The new experience based blender

Designed from an Interaction / Experience centred approach

B.A.J.H. Abbink

Universiteit Twente
de ondernemende universiteit

Universiteit twente
Ir. R. E. Wendrich
Prof. Dr. Ir. A. de Boer

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PHILIPS
sense and simplicity

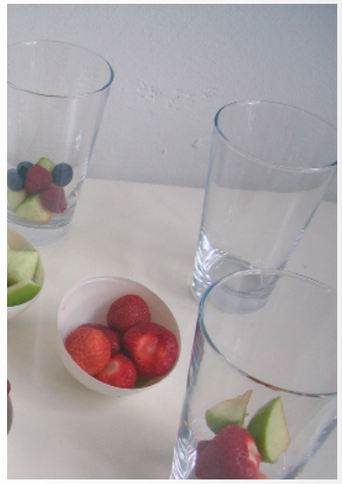
Philips
Ir. J. P. van der Voet
Ir. C. Knoop

Intro

Preceedings of the Bachelor assignment

My name is Bert Abbink, I am a student of industrial design at the University of Twente.
On the 16th of April 2007, I started the master course Design & Emotion. This course was derived from collaboration between the University of Twente and Philps Domestic Appliances and Personal care (DAP – Amsterdam).

On the 27th of July 2007 I presented my final result a 'new blender experience concept' to Ir. Margot Stilma & Prof. Dr. Ir. Arthur Eger – University of Twente, and Heleen Engelen - Design Account Director Domestic Appliancen and Don Thackary – Creative Director Innovation Design - Amsterdam. The result and presentation were received very positively as real "Sense & Simplicity" and I was one of the seven students that was asked to present their concepts at Philips DAP in Amsterdam. On the 14th of September 2007 I visited Philips DAP in Amsterdam where I was delighted to present my 'new blender experience concept' again. This time Tammo de Ligny – Sr. design account director and Jan-Paul van der Voet – Account director innovation, also joined the presentation. This final presentation resulted in a bachelor graduation assignment at Philips DAP in Amsterdam where I started on the 14th of April 2008 and which resulted in this report and visible realistic end model.



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Bachelor assignment

On the 14 of April 2008 I started the bachelor graduation assignment at Philips DAP – Lifestyle at the department Food & Beverage. Here I was welcomed by; Jan-Paul van der Voet – Account director innovation and Christian Knoop – Product design mgt – DA, team leader Food & Beverages.
I especially would like to thank them for the opportunity and the support they gave me during my four month stay at Philips. It was a great experience; I learned a lot from it the internship and most of all I enjoyed it. Above all, I want to thank many of the employees of Philips DAP – Amsterdam; they were really friendly and willing to take the time to help me during my stay at Philips and also for letting me experience and involve me in their daily activities. It was really interesting and great to be a part of it! Thank you!
And I want to thank my mentor of the University of Twente, Ir. Robert Wendrich. He also provided me direction, gave me support and helped to find and gave me a lot of inspiration.

The design project began with the statement 'Translate the essence of "the new blender experience concept" into a product proposal respectable for Philips'. I commenced with this by going trough the information provided by Philips and by being present at Philips Lifestyle. I talked to several employees with various functions: Virtual Trend Analysis (VTA) Product Designers, Directors, Assistants, etc about the way Philips works and also about the project I was going to work on for the next couple of months. This first information inspired me greatly and I started to get an overview of the work that (could and) had to been done. At this time I decided to start all over again by beginning with an analysis of the existing blender and looking for context factors. By doing so, I was able to make a complete and understandable story and I was able to make a better integration of my own vision and the vision of Philips. Before I really started the project, I set up an instructional scheme and planning that guided me through the project. By first creating a Product vision coming forward from the ViP approach (also used during the D&E course) and a Value Proposition house (VPH) a tool Philips use to realize products I managed to translate these into the final Product proposal in a structured and clear way. I was able to make an interesting integration of these two slightly different inputs because of the similarity in their basic principles and the similarity in the visions that are derived from it.

Next to making this instructional scheme, I first analyzed 'the new blender experience' concept thoroughly. I captured the essence and the strength, and I will introduce these once again during the ViP construction -context level, to be sure that the basic vision stays upright, yet it also made it possible to have a new and fresh start.
During the translation to the final Product proposal, I have paid close attention to the area of Social Sciences, (Advanced) Technology, Product Design, Visual Trends, Materials (Product Graphics).

Report

The report is build up out of three main sections, Vision; an introduction of the vision and elements that forms the foundations of the assignment here the instructional scheme will also be introduced, The product vision; witch will describe the ViP approach witch is been executed and results in the product vision and the last main section, Discipline; witch will describe the different disciplines that made the realisation of the product vision to the final product proposal reality. After this last section you will find the conclusion and the recommendations and in the extra section you can find extra facts about the course design and emotion, about me, the University of Twente and the study industrial design and facts about Philips.

Index

Vision

Vision

future

world

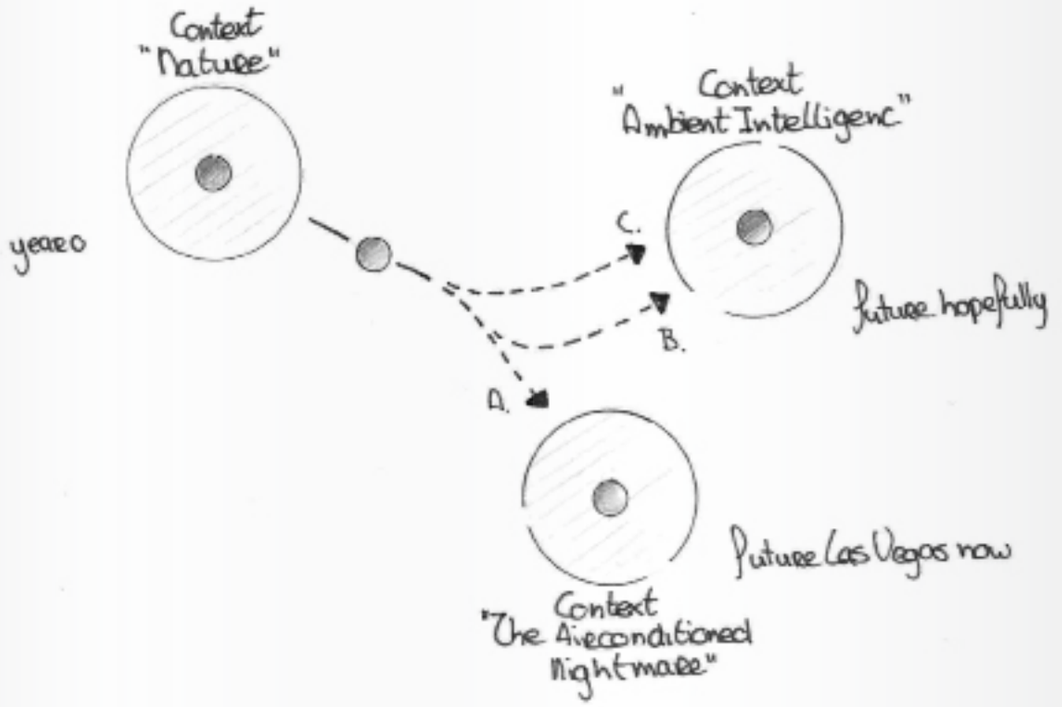
We can find an interesting development when we look at the evolution of the Homo sapiens and the accompanied constant process of exteriorization. The limits to our physical strength prompted us to start using tools, to accomplish our goals. Over time, these tools became more complex and more important to people. In the twentieth century people were able to make tools for mental faculties, the computer, and now we even 'exteriorized' our reproductive capacities. *[1]*

Our passion for tools is becoming that important and normal to us that we most of the time, even forget the most important motivation and reason why we are using and making tools. *(Arrow A.)*
- We don't realize when and even why we are using tools anymore, (until the tool doesn't work the way we expected).
and
- Another issue we are facing at the moment is that technology leads the process. The consequence of this is that making clever technology becomes a game of solving complex technical challenges and making tools not to meet with needs but to create new meaningless needs. Making tools upfront and then retrospectively looking back fitted to the end user through post rationalization of their needs. It is the end user that is expected to flex rather than the technology.

The danger & risk of focussing so hard on the existing tools and to improve these, is that we don't notice that the context around many products has changed and the goal of the end-user has shifted.
So while focussing on improving existing products and find new technology, we have to keep up with the context of the end-user and use this to find meaningful solutions for the desired fundamental goals in a much meaningful and experiential way. *(Arrow B.)* We also have to use these outcomes (of the improved products and new technology) to inspire people in a much wider area to easier and faster find solutions for other end-user desired fundamental goals also, to keep on generating innovative designs. *(Arrow C.)*

"People don't want quarter-inch drills. They want quarter inch holes." Professor Theodore Levitt, 1946

[1] [Philips (2008). The Philips design philosophy. Collected at 30 September 2008 from http://www.design.philips.com/about/design/profile/missionvision/thephilipsdesignphilosophy/index.page],



The Air-conditioned nightmare

If we are not changing this way of working, Las Vegas can be seen as a warning for a possible future! Everything you see is imitated from 'the reality' in such a way that people will be deceived and manipulated in a manner the casino owners want you to. For example, by imitating daylight in the evening your body will be deceived to not feel sleepy, you will not be triggered to go to bed and so you will not stop gambling. "It is the type of world to which environmental carelessness and materialism supported by technology could lead us, a place or state of mind which recalls author Henry Miller's expression, "the air-conditioned nightmare".

Ambient intelligence

A relationship that is interesting is no longer of user towards machine, but person towards 'object-become-subject', thus a 'subject' enriched by an intelligence that is capable of responding to stimuli from the world around them and even of anticipating them in a meaningful way. This world in which technologies are intangible, invisible and seamlessly integrated into our environment is called Ambient Intelligence.
Technology alone cannot successfully deliver solutions that take into account all the complexity that new relationships between people and object will entail: culture, personal, ethical diversity and so fort. It is therefore clear that the process that will take us towards Ambient Intelligence has to be human focused. *[2]*

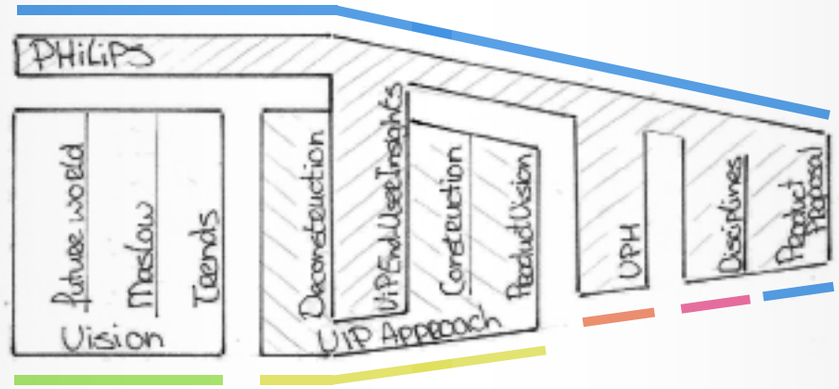
To deliver solutions that are not only technologically possible but preferable, from the social, anthropological and personal point of view, Philips have to focus on humans. (The High Design process - Philips). *[3]*

As Stefano Marzano chief design Philips states, "it is not technology that determines Man's destiny, but rather Man himself, in how he decides to use this technology. The future does not just happen by itself. It can be influenced by those who are prepared to shoulder the responsibility of making decisions today. Inaction is also action." *[1]*

[2] [Philips (2008). The Culture of Ambient Intelligence. Collected at 30 September 2008 from http://www.design.philips.com/about/design/profile/missionvision/thecultureofambientintelligence/index.page] *[3]* [Philips (2008). The High Design Process. Collected at 30 September 2008 from http://www.design.philips.com/about/design/profile/approach/thehighdesignprocess/index.page], *[1]* [Philips (2008). The Philips Design Philosophy. Collected at 30 September 2008 from http://www.design.philips.com/about/design/profile/missionvision/thephilipsdesignphilosophy/index.page]

Instructional scheme

To set up the instructional scheme (that was first mentioned within the introduction of this report), I first implemented the main elements as the visions, the ViP approach and the steps Philips normally takes, to realize their product proposal (f.e. VPH). By doing so I was able to realise a scheme that inspires the entire design track by combining really interesting elements which really gave it a surplus value. And it also provided structure by helping me oversee the project at anytime and in this way made it easier to make and clarify decisions. I used the interaction-centred design approach, called ViP, as opening element to start guiding this design process. Like the other elements that are used in this instructional scheme, ViP is based on a set of context factors, so I was able to combine these elements in an interesting way. I formed a fundamental / basis by first implementing the main elements and I completed it by fitting in interesting information which also immediately gave guidance while going through it. I was able to go from a vision, to realizing a product vision (the blender experience), and use these to eventually realize and finalize the final product proposal: an experience-centred blender by myself in cooperation with Philips.



ViP approach

Introduction

For those unfamiliar with the Vision in Product design approach, ViP is a design approach and explicitly not a method. The reason for this is that the basic assumptions/principles behind the approach are more important than de phased procedure itself.

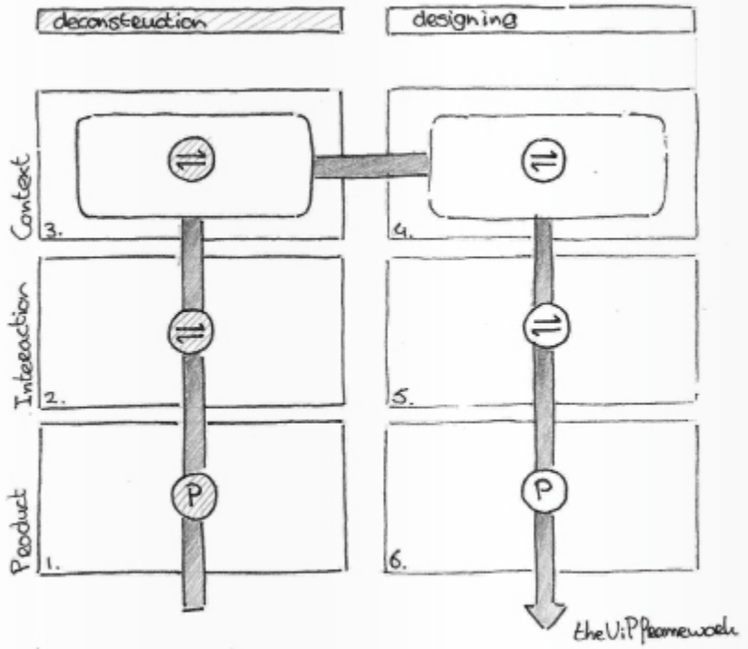
The ViP thinking frame / principles:
1-The designer is responsible for what he/she puts into the world. Because of this s/he is not able to hide behind statements as "this is the way they told me to" or "this is what they asked of me". The designer has to make free and personal, - sensitive, involved, conscious and wise decisions, and by doing this "form the world." The design process needs to give her/him this space.
2-The product delivers, according to the designer, a valuable input to the world.
It is original, in the vision that the result follows from a personal design process followed in freedom that has been pushed by possibilities instead of restrictions. Because of this, the product can be very new and unusual but this is not a requirement.

3-The context; A product, a user and their relation are not only a part of the context, but are also formed by it. The product-user relation can be seen as a fullness that has to 'fit' in the context, as an organism that constantly adjusts to the circumstances.
4- The company has to give the designer the freedom he needs. That means that his posture has to be reserved, he must avoid to force preconceived ideas about 'how things are supposed to be' onto the designer. In general this means that the company has to confirm to the first three basic assumptions, and by doing this he is able to play an active and stimulating part in the design process.
5-The user is the person who is designed for but not the person who is designing. The reason to take this position is that consumers (but in that case also designers) think and desire from their current situation and this way mainly think in problem solving ways instead of thinking in possibilities. You don't want to deviate from point 2.
6- The interaction. As the product-user relation is in a great extent shaped by the context (point 3). The designer therefore has to think about an interaction before he can design the product.
When you are using ViP it is important to make these basic assumptions your own. As long as the way of working fulfils the basic assumptions, which are fundamental then it is not that important to stick to the procedure in detail. *[4]*

[4] [Hekkert, P. and Van Dijk, M. (2000) ViP: Visie in Productontwikkeling (ViP: Vision in Product design), Internal Report, Delft University of Technology.]

Frame

To visualise this ViP approach and these thinking frame / principles, the ViP design approach has been drawn up as can seen here. A lot of attention has gone to the coherency between the deconstruction phase (breaking through preconceived ideas – look at and explore the product, the interaction, the context) and designing phase (Designing – Design a new context, a new interaction, a new product (vision)).



ViP approach and Maslow

The three important starting points of the ViP approach:
1. Design is about looking for possibilities, and possible futures, instead of solving present-day problems.
2. Products are a means of accomplishing appropriate actions, interactions, and relationships. In interaction with people, products obtain their meaning. This is why ViP is interaction-centred.
3. The appropriateness of an interaction is determined by the context for which it is designed. This context can be the world of today, tomorrow, or may lie years ahead. Future contexts demand new and different behaviours. This makes ViP context-driven.*[5]*

Designing the context, defined as a set of factors selected and combined by the designer, must be the starting point of the design project when using the ViP method. The factors can be states, developments and trends and principles. This designed context is the foundation for parameters of all aspects or factors a designer, implicitly or explicitly, considers for his design.
(Context factors that are used can be found at the chapter ViP construction context level).

Whether a development, trend, or principle, factors can differ to the degree that they are 'objectively' measurable or quantifiable. Some factors could be based on solid numbers, other factors draw more on personal interpretations of events by the person describing the context. Also principles, although assumed to be universally valid, can be based on assumptions, such as the meme-concept, or personal belief. This distinction about the validity of context factors is of importance when one tries to describe the current or future context of a user-product relationship. *[6]*

A principle that is related to a domain that interests me personally and helped me formulate a statement of my design aim, is Maslow's hierarchy of needs. By reading his books, Abraham H. Maslow left a big impression on me and I especially found the hierarchy of needs -the theory of self actualization- very fascinating.
This principle therefore formed a very interesting and important basis in the design process. With creating the new blender proposal, I want to focus on people who have reached the highest level (explained below), to stimulate and motivate them to reach and experience the 'peak experiences'.

Next to this I also want to focus on the lower levels to enable people there to grow to the higher levels. This can also mean to reach down to people from the higher levels that temporarily slided down the pyramid. You can read more about this principle in de ViPconstruction-context phase where I start to use this principle specifically in the design track.

"The American psychologist Abraham H. Maslow (1908-1970) was someone who had great faith in our capacity for cultural growth. He devised a theory of what he called self-actualization. Self-actualization he saw as the ultimate plane of human awareness, and achieving it was like climbing a ladder. At the bottom rung or lowest level were such basic requirements as food and shelter. Only when individuals were secure in these

[5] [Loyd, P., Hekkert, P., & van Dijk, M. (2006). Vision in product design (ViP): The warm bath, Delft.] *[6]* [Paul Hekkert ID Studio Lab. (2008). Designing from context: Foundations and applications of the ViP approach. Taken from http://studiolab.io.tudelft.nl/static/gems/hekkert/DiCpaper.pdf at 30 September 2008.

would they be able to progress to a higher level, to such concepts as independence and autonomy, friendship, love and esteem. When, in turn, these had been achieved, Maslow argued, the individual could ascend to the highest level of all, that of self-actualisation. This was an almost mystical state, which could be glimpsed through what he called "peak experiences", poetry or "flights of the imagination". As Maslow explained in the last interview he gave before his death (in Psychology Today in 1968), these peak experiences could come from "aesthetic moments, from bursts of creativity, from moments of insight and discovery, or from fusion with nature". Yet the "ultimate happiness for Man is the realisation of pure beauty and truth, which are the ultimate values". Maslow was also fascinated by the genuine concepts of Good and Evil and he had an essentially benign view of human existence. He was, in his own words, trying to develop "a psychology for the peace table -- Although Maslow is no longer with us, I feel we can learn much from his view of the world. We can, to paraphrase him, seek to develop 'design for the peace table'. And the way to do this is to make sure we create relevant objects. These are products which use technology to encourage the individual's cultural growth, that promote the amplification of the senses and the individual's power. The rapid advances being made in design technology are such that I believe this is genuinely possible." Stefano Marzano. *[1]*

[1] [Philips (2008). The Philips Design Philosophy. Collected at 30 September 2008 from http://www.design.philips.com/about/design/profile/missionvision/thephilipsdesignphilosophy/index.page]

Product Vision

ViP approach

Deconstruction - Beforehand

I started the design track with the ViP deconstruction phase mentioned above. For this deconstruction phase I especially looked at Philips' hr2094 blender. This is one of the latest Philips blenders and also very popular in the blender market (e.g. bring forward by kieskeurig.nl & vergelijk.nl). With this blender as a starting point and by also looking at the other Philips products in the same range off the blender, (the mini blender), the smoothie maker, the hand blender, the kitchen machine, the Juicer, the citrus press and the mixer, I got a good overview of the different products that are out on the market. And by mainly concentrating on Philips products I also got more feeling with what Philips is trying to accomplish and what their ideas are.

In this phase of the design track, I was also interested in looking at what the competitors were doing in the direction of the product category of the blender and where they focus on. But after a short study of other brands (Walita, Amo, Tefal, Braun, Siemens, Bosch, Rowenta, AEG, Krups, Moulinex, Seb, and Hamilton beach) I found little if any kind of products or features that could be interesting or inspiring. Yet I was able to find some factors, mainly 'weaknesses' and 'shortcomings,' also in the products of Philips, which have been taken along and have been highlighted during the VIPdeconstruction phase.
During the realisation of the product proposal I once again looked at what the market has to offer and at where the competitor stands compared to the new blender product proposal.

At this point I started to disassemble the blender to really be able to clear my mind and to really start the design track focused on the consumer needs.

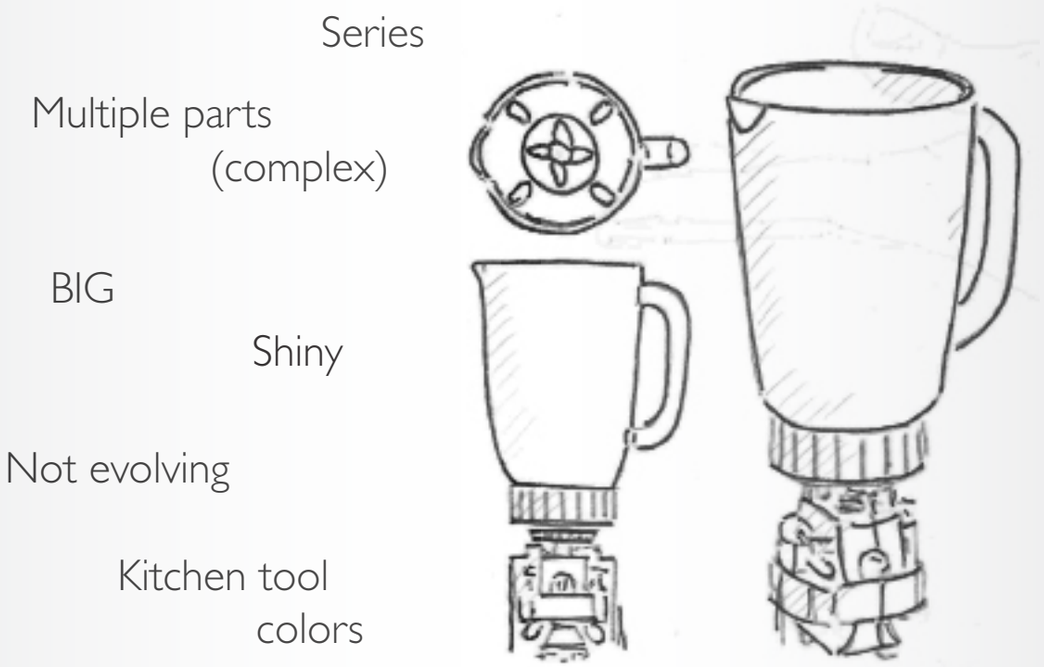
Deconstruction

The essence of the ViPdeconstruction phase lies in being freed from all knowledge and ideas that were important for the creation of the blender that is now on the market. Fixation on all these implicit basic assumptions and presuppositions that are the basic ideas of the realization of the blender, stand in the way of getting original ideas and lead to the tendency to think in solutions instead of possibilities.
It is important not only to look at features of the product, but also to discuss and to look at the user-needs and the context variables that are the foundation of these product features. To really understand the blender, why the blender is the way it is, it is important to comprehend all the blender facets on all levels, and make them your own, life them, become them.

Questions that helped to go through the deconstruction phase are:
Why does the blender look the way it looks? From which user-wants does the blender originate? Which standards / values does the blender represent? What were the technical and cultural circumstances during the realization of the blender? *[4]*

Deconstruction – Product level

The product level is the most basic level that can be used to describe the blender.
To study the blender and all quantifiable characteristics, to describe them, mirror them, and study them again is essential during the ViP deconstruction phase.



[4] [Hekkert, P. and Van Dijk, M. (2000) ViP: Visie in Productontwikkeling (ViP: Vision in Product design), Internal Report, Delft University of Technology.]

The product level is the most basic level that can be used to describe the blender.
To study the blender and all quantifiable characteristics, to describe them, mirror them, and study them again is essential during the ViP deconstruction phase.

Know that products surround us all the time and notice them when and why we are using them, not only if they don't work the way they are 'supposed' to. Realise why the product is there. Is it there to accomplish a goal or need we cannot manage because of our limited physical strength? How does it realise this task exactly? Study the qualities and facts of the blender as if the blender was a museum piece. It is important to look thoroughly at the qualities and facts you find, which ones are designed to be that way and which ones are projected on the blender by us.

Questions that match this product level and helped me find al the facts where: What does the blender look like? Which form has the blender? Which materials and colours are used? How does the surface reflect the light? How big is it? Is there any decoration on the blender? Are there products that look like the blender physically and functionally? How long will the blender last? Is the product still evolving?

- Fast
- Sophisticated
- Popular
- Moveable
- Easy
- Typical

- Time consuming

- Multifunctional
- Big

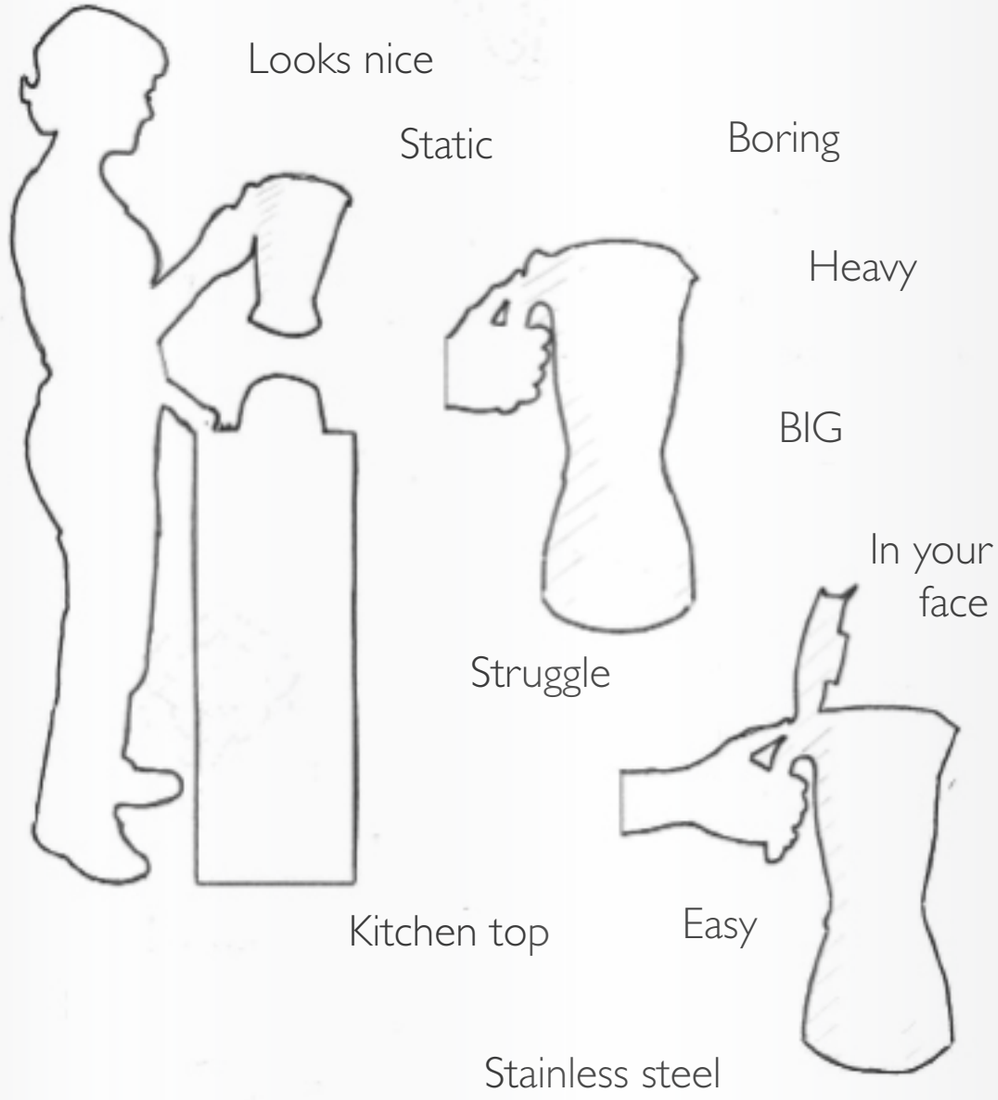
- Stays on the kitchen top

- Powerful
- Difficult

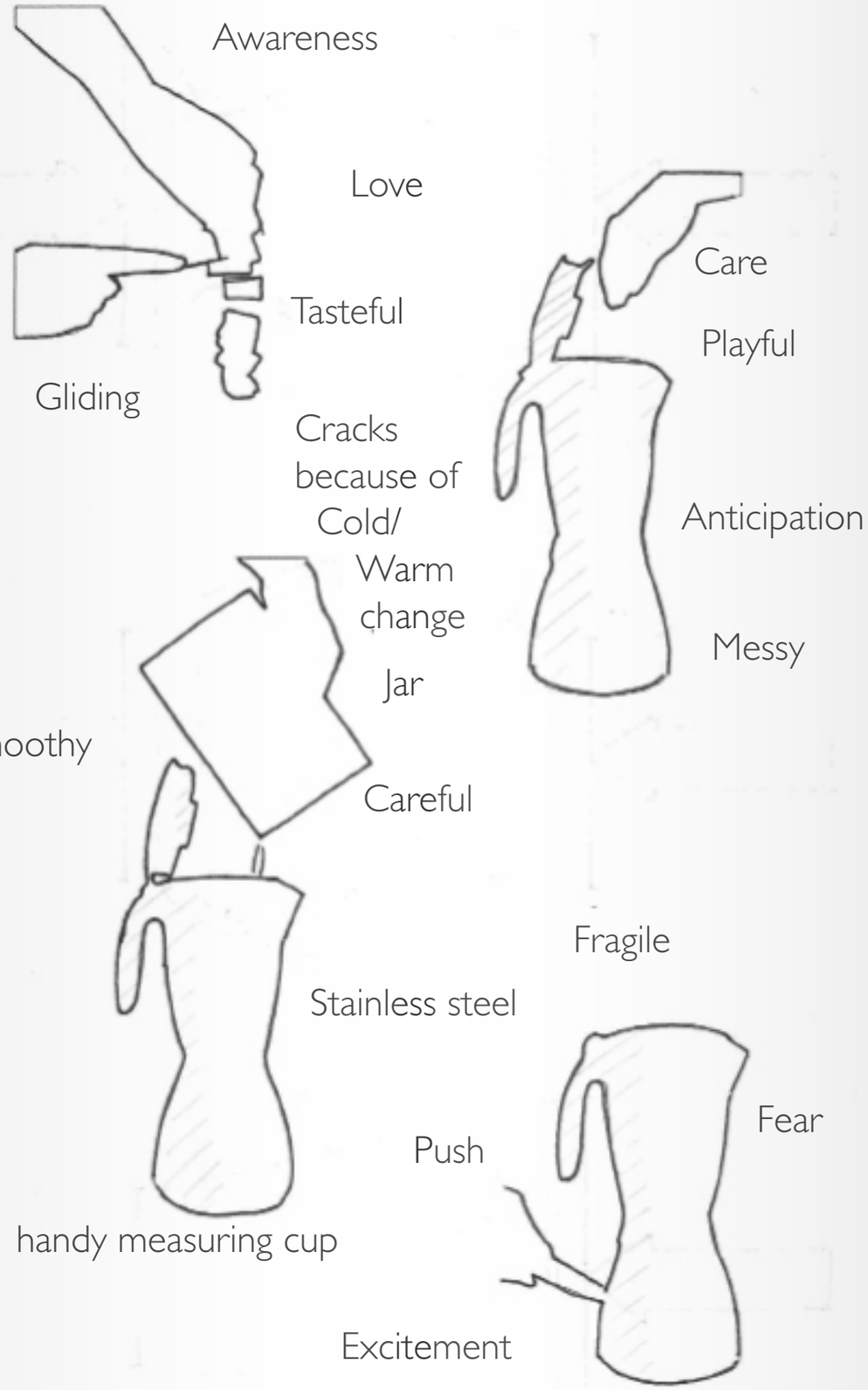
Deconstruction – Interaction level

To examine the qualities of the relation between the blender and human beings is the second level of the ViPdeconstruction. The blender only becomes functional and meaningful when it has been seen, used, interpreted or possessed by people. It is the relation to people that any product and in fact any 'being' in the world, such as artefacts, animals, plants and people, is what it is (Heidegger, 1997). *[7]*

The quality of the interaction between the human being and the blender is the most valuable interaction within the ViP approach. The ViP approach is even called an interaction centred approach. You have to see the blender and user as one, as a silhouette. This way you are sure you are looking at the qualities of the interaction. At this level, the blender will be described in terms of what does the blender mean to us, what will it offer, how do we see, feel or experience it, how is it used, talked about and thought about, by us.



[7] [Heidegger, M. (1997) Being and Time: A Translation of Sein und Zeit, New York University Press, New York (Original Work Published 1926).]


Awareness
Love
Tasteful
Gliding
Cracks because of Cold/ Warm change
Jar
Smoothy
Careful
Stainless steel
handy measuring cup
Care
Playful
Anticipation
Messy
Fragile
Push
Fear
Excitement


Pressure
Heavy
ignorance
Vibration
Care
Stuck blades
Noise
Leakage
Uncomfortable
Wiggle
Knives get no grip
Enjoy
Jummy
Flavour
liquid v.s. electric
Big pieces / chunks
Juicy
Sticky
Splashing
Dishwasher
Dangerous
enough
Struggle
fuse
annoying
dirty
Heavy
BIG
Time consuming
Plastic jar scratched
Mission accomplished

Deconstruction – Context level

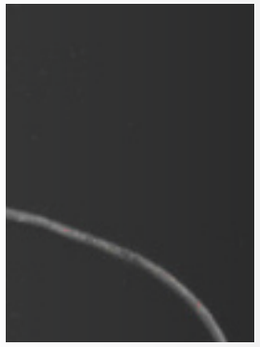
The user-product relationship is not something that takes place in isolation, but is part of a larger context. The aim of deconstruction at the context level is to try and think of which original conditions for the creation of a product, provided a possible reason to produce that particular person-product interaction. Put in another way, the context level tries to get to the factors underlying the qualities of a particular person-product interaction.

We are not necessarily trying to find the factors that the original designers used in their design process, although that is a possibility. This context consists of all kinds of factors, e.g. social patterns, technological possibilities and cultural expressions, that affect the way people perceive, use, experience, respond and relate to products, i.e. the nature of the human-product interaction (Hekkert 1997). The product was created from these factors.

What is important is to understand that products and hence interactions are created within well-defined contexts and that understanding this context can help in understanding why the product exists at all. In fact, that is what we are looking for, the answer to the question: why does this product exist? And why does it exist in this way? *[5]*

Deconstruction – Context level - History

In 1873 James and William Horlick formed a company to manufacture their own brand of infant food, and carried the name of Racine Wisconsin to the farthest reaches of the globe. The main product of the Racine Wisconsin was malted milk, which originally was a health food for infants and invalids, but found several unexpected markets and changed the way Americans ate.
Healthy people began drinking Horlick's product simply for the taste. Malted milk became a standard offering of soda fountains across the country and found even greater popularity when mixed with ice cream into a "malted." As malted milk evolved into a soda fountain treat, Horlicks began adding chocolate to its malted milk products. According to legend, William Horlick approached the fledgling Hamilton Beach Manufacturing Co. of Racine and urged them to apply their lightweight, high-speed motor to the increasingly popular task of mixing malteds. The result was the first practical electric drink mixer, patented in 1911. *[8]*



Technical
In 1919, Polish born Stephen J. Poplawski of Racine Wisconsin began the design and manufacturing of beverage mixers of various types, under contract to the Arnold Electric Compagny of Racine. At the time, the blenders originated from the preparation of malted milks.

Poplawski applied for a patent in 1922 "...for the first mixer of my design having an agitating element mounted in a base and adapted to be drivingly connected with the agitator in the cup when the cup was placed in a recess in the top of the base, the liquefier blender".

[5] [Loyd, P., Hekkert, P., & van Dijk, M. (2006). Vision in product design (ViP): The warm bath, Delft.], [Wisconsin history (2008). Horlick. Collected at 30 September 2008 from http://www.wisconsinhistory.org/museum/exhibits/horlicks/], *[8]* [Sections (2008). Milwaukee. Collected at 30 September 2008 from http://www.sections.asme.org/milwaukee/history/6-blender.html],

In 1926 that firm was sold to Hamilton Beach Manufacturing Co. of Racine, and Poplawski joined their staff.

Poplawski joined the Greene Manufacturing Company, also located in Racine, in 1932. Greene began production of mixers of Poplawski's latest design (patent numbers 1,937,184 and 1,937,445). It was also in this year that a new use of the blender was found "...in the macerating of fruits and vegetables so as to reduce them to a fluid state."

In 1933 he began working on his own time to create a blender for home rather than commercial use, ultimately forming Stephens Electric Co., and in 1940 he patented a household mixer for family kitchens. On January 28, 1946, this machine was named the "Osterizer" when Poplawski sold his business to the John Oster Manufacturing Co. The Oster engineers completed the experiments that Mr. Poplawski had started, and a new product was introduced. This product came to be known as the Osterizer® Blender, which has become the staple of Oster® Blenders today. He retired in 1946 after this sale, and died in Racine on Dec. 9, 1956. *[9]*

Populairity
Fred Waring was the financial source and marketing force that thrust the Waring Blender into the marketplace, however, Fred Osius, once a partner in the Hamilton Beach Co., had been working on improving the Poplawski design since 1926 and patented the famous blending machine in 1933. Six months and $25,000 later, the blender still suffered technical difficulties.

Undaunted, Waring dumped Fred Osius and had the blender re¬designed once again. In 1937, the Waring-owned Miracle Mixer blender was introduced to the public at the National Restaurant Show in Chicago retailing for $29.75. In 1938, Fred Waring renamed his Miracle Mixer Corporation as the Waring Corpora¬tion, and the mixer's name was changed to the Waring Blender.

Fred Waring went on a one-man marketing campaign that began with hotels and restau¬rants he visited while touring with his band, and later spread to upscale stores such as Bloomingdale's and B. Altman's. Waring once touted the Blender to a St. Louis reporter saying, "…this mixer is going to revolutionize American drinks." And it did. *[10]*

[9] [Inventors (2008). Blender. Collected at 30 September 2008 from http://inventors.about.com/library/inventors/blblender.htm], *[10]* [Explore a History (2008). Fred warding Collected at 30 September 2008 from http://www.explorepahistory.com/displayimage.php?imgId=2919]

Deconstruction – Conclusion

The ViPdeconstruction phase helped me to gain a wider view of the world of the blender.
I managed to described the blender at three levels; the product, the interaction and the context, and by analyzing these three levels I was able to notice, understand and in this way get rid of any presuppositions the blender has in the different domains.

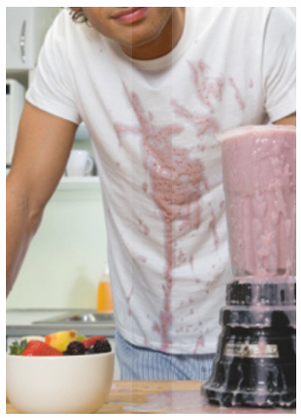
By making the blender my own, I found factors that are obsolete or do not make sense, I immediately got the feeling for new opportunities for the design phases that follow.

After analyzing the blender by using the ViPdeconstruction, I noticed that it is really easy to pick up this way of analyzing / thinking. At the first instance, I automatically noticed context factors that are involved in the domain of other products but might be interesting in the blender domain. So I am also able to use this way of thinking in the following steps, to find interesting factors that can contribute to realize a design proposal and eventually to realizing the new experience-centred blender.

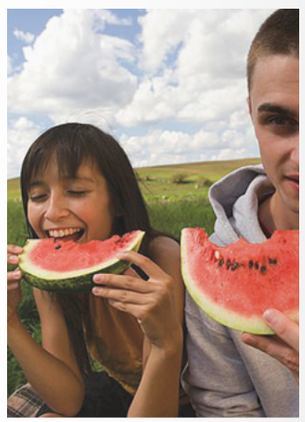
Respect (by others, Show off)

Kitchen / Quality

Family



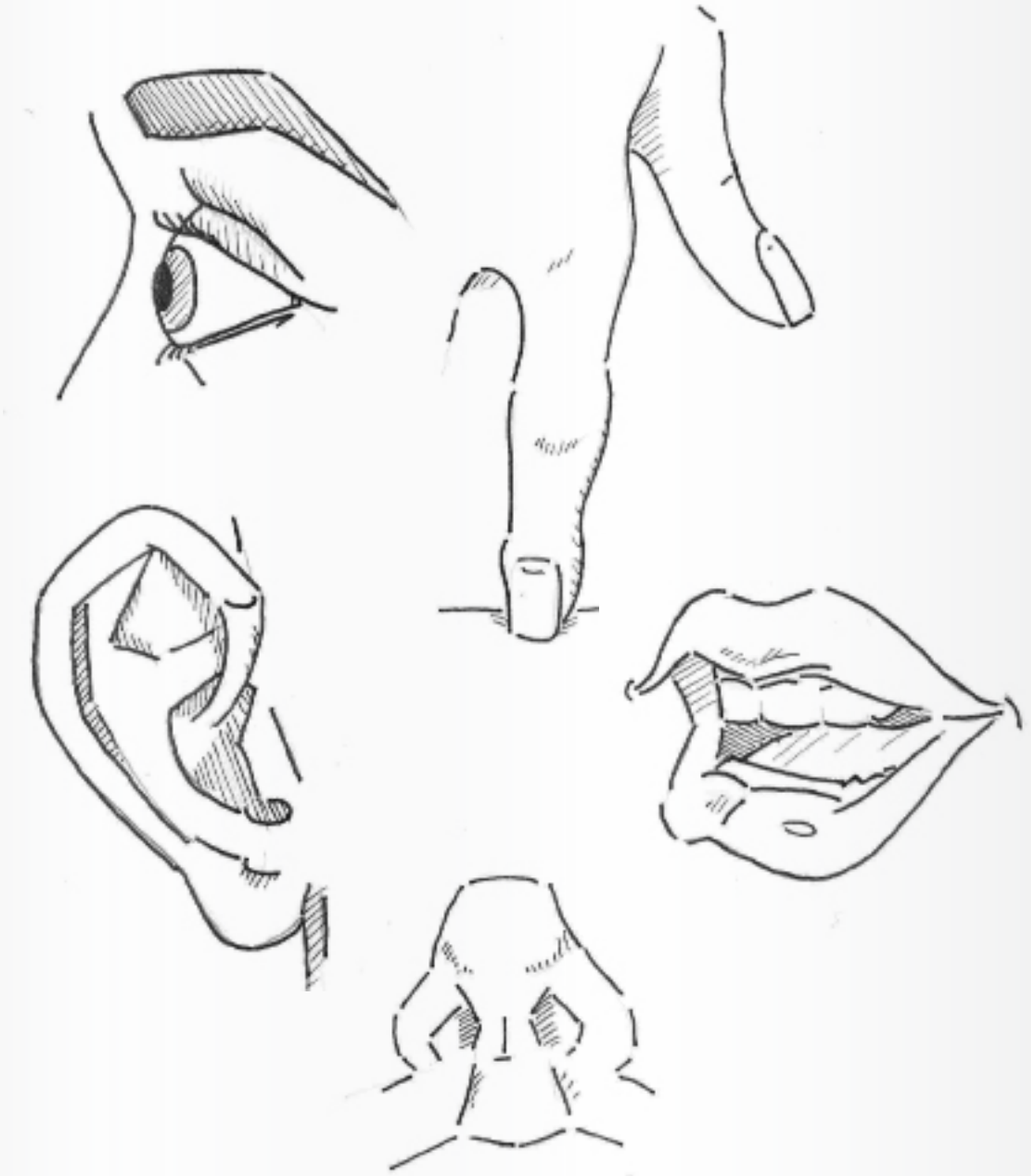
Creativity



Blender (food, water, healthy)

Construction - Beforehand

To start with this ViPconstruction phase I set up a domain, which contains the minimum set of requirements applicable to this new blender. The domain that was relevant to my design goal was to design an interaction/ experience-centred blender, based on considering the Hierarchy of needs, Ambient Intelligence, Sense and Simplicity and with the main focus on the preparation of Fruit Juices & Smoothies. To be able to design an interaction / experienced-centred blender an important focus of the design has to be based on the human senses.



Interaction:
Interaction is a kind of action that occurs when two or more objects have an effect upon one another. The idea of a two-way effect is essential in the concept of interaction, as opposed to a one-way causal effect. *[11]*

[11] [Wikipedia (2008). Interaction Collected at 30 September 2008 from http://en.wikipedia.org/wiki/Interaction]

Experience:
Experience as a general concept comprises knowledge of or skill in or observation of some thing or some event gained through involvement in or exposure to that thing or event. *[12]*

Senses:
The traditional five senses are; Sight, Hearing, Taste (sweet, salt, sour, bitter), Smell, Touch and at least six additional senses; nociception (pain), equilibrioception (balance), proprioception & kinaesthesia (joint motion and acceleration), sense of time, thermoception (temperature differences), and in some weak magnetoception (direction). *[13]*

Fruit:
True berry, - Black currant, red current, gooseberry, tomato, eggplant, guava, lucama, chili pepper, pomegranate, avocado, kiwifruit, grape. - PePo, -Pumpkin, gourd, cucumber, melon, - Hesperidium, - Orange, lemon, lime, grapefruit, - False berry, - Banana, cranberry, blueberry, - Aggregate fruit,; Blackberry, raspberry, boysenberry, hedge apple, - Multifruit; Pineapple, fig, mulberry, - Other accessory fruit; Apple, peach, cherry, green bean, sunflower seed, strawberry. *[14]*

[12] [Wikipedia (2008). Experience Collected at 30 September 2008 from http://en.wikipedia.org/wiki/Experience], *[13]* [Wikipedia (2008). Senses Collected at 30 September 2008 from http://en.wikipedia.org/wiki/Senses], *[14]* [Wikipedia (2008). Fruit Collected at 30 September 2008 from http://en.wikipedia.org/wiki/Fruit]

Construction - Introduction

The essence of the ViPconstruction phase lies in constructing a new Product context, Product interaction and eventually a new Product vision. This construction starts with and is based on the knowledge contracted from the ViPdeconstruction phase.

This previous phase let me see, realize and in this way freed me from all fixated implicit basic assumptions that were important for the creation of the existing blender. Now I have to clear my mind from of all preconceived ideas and assumptions and think in possibilities.

It is time to construct a new foundation to build on the new experience-centred blender.
I am going to do this in rank of constructing a new context, a new interaction, a new product vision which eventually forms the basis of the new blender proposal.

Construction - Context level

By using the ViP approach as a fundamental approach to guide the design process, designing the new context is the start of the VIP construction phase. The context is defined as a set of factors that are directly or indirectly relevant to my domain, and selected and combined by myself. These context factors are states, developments, trends, or principles that formulate statements of my design aims. As I turned my design aim over in my head I found more and more relevant context factors and I was able to make connections with the things I came across in the course of day to day life.

Several points that were important during the collection of information to build up the new context;
- In this stadium it is important not to gather information about the future user of future product, but only information to build the future context on.
- It is important not to feel any restrictions while gathering the information. Especially information from different domains can arouse new fresh ideas. It is important that this information is from an abstract enough level, so it can be generalized to the domain in question (Gentner, 1983).
- Inconsistence and ambiguous information needs some special attention. Exactly this information often forms the base of new solutions. (Mumford, Baughman, Supinski, & Maher, 1996).
- The information has to have a relation with the described design problem. By breaking open this description during the ViP deconstruction phase, this description can be formulated very broadly.
- The gathered information does not have to be bundled in a coherent overview. The information has to give enough input for the context that has to be designed and for the following steps that will be taken during this design project. *[4]*

After finalizing the ViP deconstruction phase I started with the knowledge contracted from the ViP deconstruction phase to build up the new blender context. Especially the information derived from the ViP deconstruction context level phase helped me to build up a new set of factors that are directly or at first sight indirectly relevant to my design aim. By not restricting myself too much during the survey, I was able to find information from different developments in al sorts of areas, that was interesting not only for this moment in the design phase but inspired me all the way to the final blender proposal.

I searched for particular trends in food and interior design, but I also looked at principles like the Pyramid of Maslow - the hierarchy of needs. By using the Pyramid of Maslow I was able to create a (sometimes different) hierarchy of importance of the context factors from different developments in all sort of areas, that could be interesting for the final blender proposal and by doing so I was able to create a future context in which I really belief in.

You can see the context factors as ingredients for a Smoothie: you have to think about how they will combine, how they relate to each other, and what the overall experience will be like.*[20]*

[4] [Hekkert, P. and Van Dijk, M. (2000) ViP: Visie in Productontwikkeling (ViP: Vision in Product design), Internal Report, Delft University of Technology.] *[20]* [Loyd, P., Hekkert, P., & van Dijk, M. (2006). Vision in product design (ViP): The warm bath, Delft.]

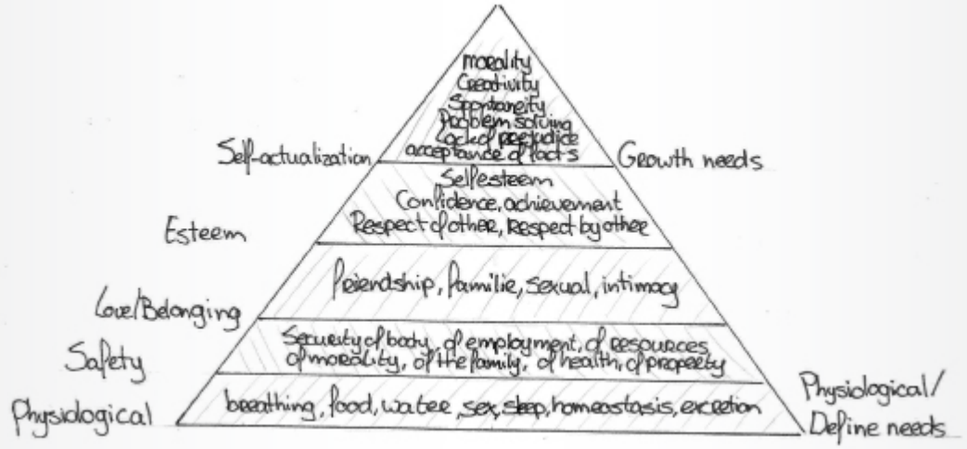
The huge number of factors of all types (also interrelated), make a web of interdependent factors which determine the complexity of the context. Ideally I would like to map all possible factors and their interrelations, but since this is an impossible task I made a selection of what, in my eyes, are the most interesting context factors for this project.

There are context factors that are, by their unvarying nature, subordinate of time. These factors we call principles and they refer to immutable laws or general patterns that can be found in human beings or nature.
A principle that plays an important role in this design project and can be found back in the constructional guide and helped me make design decisions, is Maslow's hierarchy of needs. The theory of self-actualization is proposed by Maslow in his 1943 paper 'A Theory of Human Motivation'. He subsequently extended it to include his observation of humans' innate curiosity.

Principle

Maslow's hierarchy of needs is a theory in psychology, proposed by Abraham Maslow in his 1943 paper 'A Theory of Human Motivation', which he subsequently extended to include his observation of humans' innate curiosity.

Maslow's hierarchy of needs is often depicted as a pyramid consisting of five levels.



The higher needs in this hierarchy only come into focus when the lower needs in the pyramid are satisfied.

Once an individual has moved upwards to the next level, needs in the lower level will no longer be prioritized. If a lower set of needs is no longer being met, the individual will temporarily re-prioritize those needs by focusing attention on the unfulfilled needs, but will not permanently regress to the lower level.

D-needs
Physiological needs are basic human needs. If a person is hungry or thirsty or their body is chemically unbalanced, all of their energies turn toward remedying these defensives and other needs remain inactive.
The physiological needs of the organism take first precedence. These consist mainly of Breathing, Drinking, Eating, Excretion. If some needs are not fulfilled, a person's physiological needs take highest priority. Physiological needs can control thoughts and behaviors and can cause people to feel sickness, pain and discomfort.

Safety needs take over and dominate when the physical needs is satisfied. These needs have to do with people's yearning for a predictable, orderly world in which injustice and inconsistency are under control, the familiar frequent and the unfamiliar rare. Safety and Security needs include: Personal security from crime, financial security, health and well-being, Safety net against accidents/illness and the adverse impacts

Social needs involve emotionally-based relationships in general, such as: friendship, intimacy, having a supportive and communicative family. Humans need to feel a sense of belonging and acceptance, whether it comes from a large social group or small social connections. They need to love and be loved (sexually and non-sexually) by others.

Esteem needs, all humans have a need to be respected, to have self-esteem, self-respect, and to respect others. People need to engage themselves to gain recognition and have an activity or activities that give the person a sense of contribution, to feel accepted and self-valued, be it in a profession or hobby. It may be noted, that many people with low self-esteem will not be able to improve their view of themselves simply by receiving fame, respect and glory externally, but must first accept themselves internally.

Growth needs
Maslow believed that humans have the need to increase their intelligence and thereby chase knowledge. Cognitive needs are the expression of the natural human need to learn, explore, discover and create to get a better understanding of the world around them.

Aesthetic needs. Humans need beautiful imagery or something new and aesthetically pleasing to continue up towards Self-Actualization. Humans need to refresh themselves in the presence and beauty of nature while carefully absorbing and observing their surroundings to extract the beauty the world has to offer.

Self-actualization is the instinctual need of humans to make the most of their abilities and to strive to be the best they can. Working toward fulfilling our potential, toward becoming all that we are capable of becoming.

'What a man can be, he must be' To further confound the problem of understanding motivation, Maslow points out that motives are not always conscious. In the average person, he believes, they are more often unconscious than conscious — showing the influence on his thinking of Freudian psychologists who have long been concerned with the hidden causes of human behavior.

According to Maslow, the tendencies of self-actualizing people are as follows:
1. Awareness; efficient perception of reality, freshness of appreciation, peak experiences, ethical awareness
2. Honesty; philosophical sense of humour, social interest, deep interpersonal relationships, democratic character structure
3. Freedom; need for solitude, autonomous, independent, creativity, originality, spontaneous
4. Trust; problem centred, acceptance of self, others, nature, resistance to enculturation - identification with humanity

Maslow's description of Self-actualization;
"an episode or spurt in which the powers of the person come together in a particularly and intensely enjoyable way and in which they are more integrated and less split, more open for experience, more idiosyncratic, more perfectly expressive or spontaneous, or fully functioning, more creative, more humorous, more ego-transcending, more independent of their lower needs, etc. They become in these episodes more truly themselves, more perfectly actualizing their potentialities, closer to the core of their being, more fully human. Not only are these their happiest and most thrilling moments but they are also moments of greatest maturity, individuation, fulfillment - in a word, their healthiest moments."

"Self-actualising people, those who have come to a high level of maturation, health and self-fulfilment, have so much to teach us that sometimes they seem almost like a different breed of human being." *[15]*

[15] [Wikipedia (2008). Experience Collected at 30 September 2008 from http://en.wikipedia.org/wiki/Abraham_Maslow]

Principle - Maslow

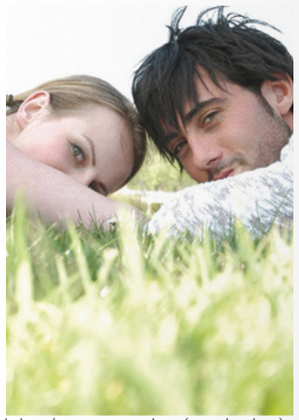
The foundation of the new blender context mainly follows from the information contracted from the ViP deconstruction part and especially from the ViP deconstruction context level phase combined with the guidance and information of the principle just described, namely Maslow's hierarchy of needs. By only laying the interesting old context factors next to the pyramid I was already able to make some interesting alterations and make a start with the new blender context.

Respect by and from others

Family & Friends

Quality (like the old days)

Blender more to (food, water health)



Morality (conscious) / Creativity / spontaneity (exploring)

I want people to Explore their senses in order to experience !!

States

Next to the principle just described, I also used other context factors for the creation of the new blender context. A factor that is or looks relatively stable at the moment of observation is called a State. States refer to conditions in the world around us and seem to stay constant in the near future, but by their nature do not have to be fixed. A State can be a fixed time ritual of three times a day eating time.

Developments

A factor that is influenced (during the observation) by a phenomenon that is currently changing is called a development. Possible fields which developments can be extracted from are society, culture, politics, economy, technology, demographics or ecology.
An interesting development reflects peoples desire to be more conscious to live more healthily. This desire is reflected in two interesting accents; people pay more attention to the world we are living in, because it brings us all the primary necessities of life: air, water and nutrition and people pay more attention to their physical and mental wellbeing.

An increasing number of these facts about the earth and our environment make us realize how important she is. For example the weather pattern is changing rapidly, bigger natural disasters are hitting us and the melting of the ice at an incredible speed at the South and North Pole threatens the polar bear with extinction. In August 2008, for the first time in history it was possible to sail around the world via the northern passage. Besides these happenings, health facts like the rise in the number of people with lung cancer after the introduction of the cigarette, the gaining of weight in western society and not to mention all the other diseases that have come along, are pushing us to be more conscious of healthy living.
These health and environmental facts are hitting us ever more personally and make us more conscious of life and realize that we need to take better care of ourselves and the earth.
These developments are the kind of factors that are often taken into account for scenario building (Schwartz 1991, Van der Heijden 1996). For a point in time set in the future, one tries to predict to what kind of context

Trends

A special class of developments is constituted by factors concerning tendencies in the behavior, values, or preferences of (groups of) people. Such developments are often specified as trends. A trend that lays in line with the development; that people are more conscious of what they eat is the trend that people desire to get closer to the earth in all things food related. The goal is to regain health and happiness by eating in a more 'natural' uncorrupted way. Manifestations of this trend have moved from an emphasis on organic food to a focus on local food, or food in tune with the season. Two trends that are in line with this trend and are also very interesting and inspirational for the development of the blender in this project are; people want to push their cooking skills and taste to delight themselves and impress others, and more and more people ask for healthy and tasty food, without compromising on time-efficiency and convenience. It is 'trendy' not to cook at all or to be a pioneer in new directions in food preparation and presentation and to prepare an impressive dinner for family and friends at home. *[6]*

Next to the principle just described, I also used other context factors for the creation of the new blender context. A factor that is or looks relatively stable at the moment of observation is called a State. States refer to conditions in the world around us and seem to stay constant in the near future, but by their nature do not have to be fixed. A State can be a fixed time ritual of three times a day eating time.

Conscious Food
An interesting development reflects people's desire to live more consciously and to live more healthily. We are pushed by happenings in our lives and the health of others and of the world we life in.
This desire is reflected into two interesting accents; people pay more attention to the world we live in, because it brings us all the primary necessities of life: air, water and nutrition, and people pay more attention to their physical and mental wellbeing.
For a period now, people have become aware of local food traditions from the far away, with the growing awareness that not all food is the same; it tastes, looks, feels, and smells different and also, some food is healthier (for some than for others). The interest in living more consciously in combination with the knowledge of food is the beginning of some interesting trends.
People want to live fairer and more honest by getting to know where food comes from, as well as understanding how it is processed and can be prepared, which gives more insights to base your decision on. People want to live more uncorrupted and therefore choose more often for local, organic, seasonal ingredients. The 'slow food' movement is one of the instigators of this Conscious food trend.

Farmers Markets – local & fresh Organic, Fallen fruit – public fruit, Carlo Petrini – founder of slow food movement, MyFreshEgg – Traceable food - food can be asked to tell its own life story, Tom's of maine – natural products for hair, teeth, skin. , Burts bees – natural personal care products, Jamba juice – all natural smoothies

[6] [Paul Hekkert ID Studio Lab. (2008). Designing from context: Foundations and applications of the ViP approach. Taken from http://studiolab.io.tudelft.nl/static/gems/hekkert/DiCpaper.pdf at 30 September 2008.]

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Food Artist
Another trend also follows from the growing awareness that not all food is the same and overlaps more and more the conscious food trend that people want to learn for themselves how to prepare and present food to delight themselves and impress others. Exposed to experiences in restaurants, on holiday, by celebrity cooks and cooking related programs on TV, food related magazines, food tool boxes, websites (AH.nl) etc, people become more and more interested in the primary necessity called food. The knowledge of intake of nutritionally healthy food will increase and people will become healthier and also more cheerful.
The delight of cooking for some people even jumps over into an urge of constant learning. They meet up to share and celebrate special meals, to develop one's taste and style, comparable to the already known wine tasting and book discussion clubs. But for most it stays with delighting themselves by developing one's taste and style and expanding their skills, by experiencing different ways of cooking in a (relaxed) fun way and impressing and entertaining others by focusing on the overall experience and inspiring all senses.

-Crafted candy, - Artisan, -Molecular cooking, -Tapas style, -Amuse gueules & tasting plates, -Small courses for sharing, -Party Foods.

The Hasty
A third trend that follows from the growing awareness that not all food is the same and more and more overlaps conscious food trend, is that people still live a fast-paced lifestyle, have little time to prepare meals but more and more refuse to compromise on the health (and taste) of food. Getting used to the benefits of time efficiency and convenience of food/snacks that are available anywhere & anytime, people now look for solutions that help to reintegrate healthy food that offers plenty of fresh vegetables & fruit and fish and are full of vitamins and fibers into their busy lives.
Offering the solution for spending less time on food, shopping, preparing and even consuming in combination with living more healthy is often represented in the creation possibilities of food, for example presenting food that can be steamed rather than heating it up in a microwave, or for example Shakies' 'fresh' made smoothie / fruit juices while you are waiting. However, these options are not always easily accessible, they are most often more expensive than unhealthy options and, as needs to be noted, the question remains as to whether they are genuinely healthy.

-Packaged, frozen, -Smoothies, -Healthy liquid monodose, -Fresh & frozen baby food, -Premium ready meals; -Ready to steam, -On-the-go, -Home cooking take away, -Packaged fresh.

Vision

Instructional scheme - Maslow

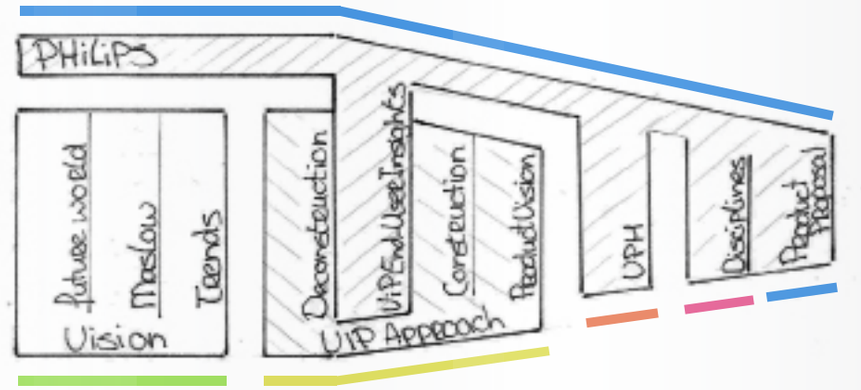
After the research for interesting context factors, I made a selection of context factors that are directly interesting and must have influence on every following step that will lead to the creation of the product proposal.

-The selected context factors started with the consideration of the principles and especially the pyramid of Maslow. The interesting focus is on stimulating and motivating people from each level to reach the higher levels or even for the people at the highest level to reach the 'peak experiences'.
By sticking to this context factor (and using the Pyramid of Maslow as guidance) during the continuation of the design track I try to keep this idea upright and to have a lot of inspiration to create the eventual blender product proposal.

-The next interesting context factor that is paying up and is more directly focused to the expectations of today are the different trends. For example the trends that people are more conscious of what they eat is the trend that people desire to get closer to the earth in all things food related. The goal is to regain health and happiness by eating in a more 'natural' uncorrupted way. These trends also must have influence on the further development of the blender.

-Next to the information already gained and phrased, I make a start to create the Value Proposition House (a tool Philips uses, which will be set forth in the chapter Value Proposition house). By starting this know you can use the advantage of the user-inside research of Philips and hereby finalizing the new blender context level. Other parts of the VPH's are created in a later phase to prevent that preconceived ideas influence the product vision. The five context factors, starting from first level, are called Easy & Fast, Space Saving, Social commerce, Anywhere, Motivate to Create.

By analyzing 'the new blender experience' concept thoroughly, I captured the essence and the strength, which properly underline the basic vision of 'the new blender concept'.
By introducing them here and combining them with the context fundamentally already laid down, I was able to keep the basic vision upright, yet I also was able to take the opportunity to make a new start. I came up with five VPH's, consisting of five strong and interesting essence which individually also fit one of the 5 levels of the pyramid of Maslow, as a result. By creating a Value Proposition House around each of these new blender essences, I was also able to directly follow the vision of Philips Sense and Simplicity.



End-user insights
Easy & Fast
"When I wake up, before a long day of hard work, I have little time for myself. It's not the right moment, to already get frustrated with the complication & hassle of the existing fruit preparation appliance. I wish there was a fast and easy way to enjoy my fresh fruit juice in the morning and help me live a more healthy life"

Space Saving
"I am a 23 year old student, and I am constantly aware of the tiny house I live in. My kitchen has limited storage capacity and this is a problem, especially for all those BIG kitchen appliances. Even though I would love to enjoy fresh & healthy homemade juices, this lack of space is preventing me. Don't you think it is time for a smaller fruit processor so I can also experience fresh & healthy homemade juices."

Social commerce
"Having fun with friends, like barbequing, enjoying a high-tea, having a fondue, is the best way to enjoy our time together. Throwing a juice party would also be great (or making the others complete) but the inconveniences of existing fruit appliances get in the way of making your own personal (single portion) variations of fresh fruit juices or smoothies. Wouldn't it be great to be able to share the experience of creating and enjoying your own cold fresh Fruit juice & smoothie and all of this in an easy and stimulating way."

Anywhere
"Having a relaxing, quiet sunny day in the park, brings back my essential energy. It is however disturbing when you taste your fresh home-made fruit juice or smoothie and it has turned brown and smelly. Additionally, like bought premixed juices, it has lost the fresh taste and the vitamins. I wish there was a way to enjoy fresh hand-made fruit juices & Smoothies without fuss, wherever and whenever I want."

Motivate to create
"I enjoy cooking and dining. It allows me to escape from my busy life and relax. The fun is in creating and experimenting with the flavors, colors & smells of ingredients. The existing fruit preparation appliances are complex, not spontaneous & [/or] innovative and do not Inspire me. I wish there was an easy to use fruit preparation tool to stimulate and help me to create the best (single portion) fruit juices / smoothies."

The reason for creating and starting with all five levels of the pyramid of Maslow is to be sincere and involve all people from each level and stimulate them all to reach the higher levels (again). By involving all five levels as long as possible, it gives the opportunity to have a lot of interesting consumer driven input (for the brainstorm sessions) that will lead to the product vision. And really important, a product vision can be created that could be interesting for people from each level and stimulate them all to reach the higher levels (again).

After finalizing the product vision, it could be interesting to choose one or make a selection of levels that could guide the design vision in the most interesting & viable direction for a product proposal, that fits this moment and the vision of Philips best.

This does not necessarily mean that if there is a product (blender) refinement, this only has to take place on this (these) level(s). (Most of the time, product refinement takes place on the higher level). By keeping the input from all the VPH's as long as possible upright, you can open up this refinement or prevent another product refinement in the future because the product could 'easily' (be made) adoptable for more levels.

Construction - Interaction level

Having built a context defined by a set of context factors selected and combined by me, I'm now able to be more creative by using these interesting context factors to develop and set parameters for a new interaction.
These parameters or qualitative characteristics can concern the product itself or the way we interact with or are related to the product but in anyway have to make sense in the defined context. *[6]* This interaction does not describe the physical usage of the product, but foremost the way it is used, perceived, and experienced. It is a qualitative notion of the relationship the user will have with the product and reflects, at the same time, the users concerns' and the products' characteristics. *[4]*

Because the context can influents the wants from the consumer as well as the quality's of the product it is wise to make this ViPconstruction - interaction step and clarify / create the product-user interaction view / vision. This product-user interaction vision is mainly there to characterize the interaction and is therefore qualitative from nature. I verbally and illustrate the concept of how the future user, experience the new blender. The product-interaction vision has to pay up to a number of dements:
1. The vision has to have a clear and consistent relation with the designed context. This is done by taking as many as possible new elements from the designed context and translate them to a unambiguous description.
2. The vision has to be adequate concrete end clear formulated so it can be used as base for the following design steps.
3. The vision has in some degree been original to the original product-user interaction. The vision become especially interesting if qualitative characterizes, are not used before in the current interaction or in combination hasn't been a starting point. *[4]*.

Following from the range of context factors I just described, a number of user-product interaction factors, which found the overall (context) vision, have been identified. In my eyes these interaction factor not only have to support but also, where possible, have to motivate and stimulate the user to explore there senses in order to experience the context factors.

In this section the user-product interaction will be described. The most important interaction characteristics are caught in a unity of text and pictures. They must be considered in unity;

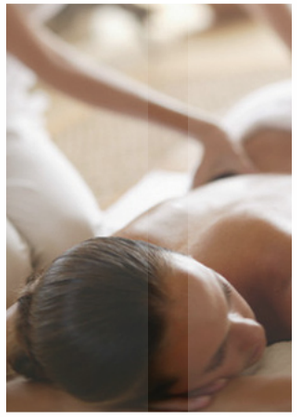

Fun


Playful

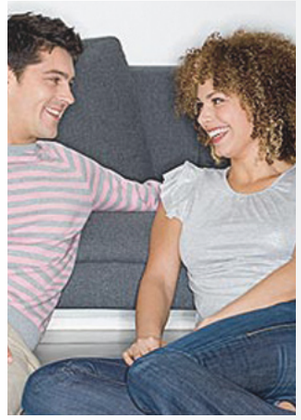
[6] [Paul Hekkert ID Studio Lab. (2008). Designing from context: Foundations and applications of the ViP approach. Taken from http://studiolab.io.tudelft.nl/static/gems/hekkert/DiCpaper.pdf at 30 September 2008.], *[4]* [Hekkert, P. and Van Dijk, M. (2000) ViP: Visie in Productontwikkeling (ViP: Vision in Product design), Internal Report, Delft University of Technology.]

Stimulating

Relaxing



Lovelyness



Exploring

Refreshing

Friendship

Construction - Product level

Having specified the qualitative product-user interaction performances, it's now possible to define qualitative characteristics for product-concepts and the eventual final product, called the product vision. The qualitative characteristics can be aimed at the function, value, style, appearance of the product. In all cases it gifs a closer product related completion of characteristic from the interaction vision. A good product vision together with the underlying interaction vision and context vision, gifs direction to the design process and moet in zekere mate een oorspronkelijk licht werpen op de bestaande blender(s).

Arriving at the product level again it's important that the interaction and product vision both:
- inspire and give the belief that's possible to get to an original solution to the design problem.
- giving direction to find product ideas. This can be done by looking at possible principles in other domains that can be translated to solutions in the current domain.
- The product vision also can help by selecting interesting concepts that derived from the original vision.
- A clear vision not only inspires the designer but everyone who is involved in the design process. By doing this its even good possible that the product idée get accepted at a early stage of the design process.

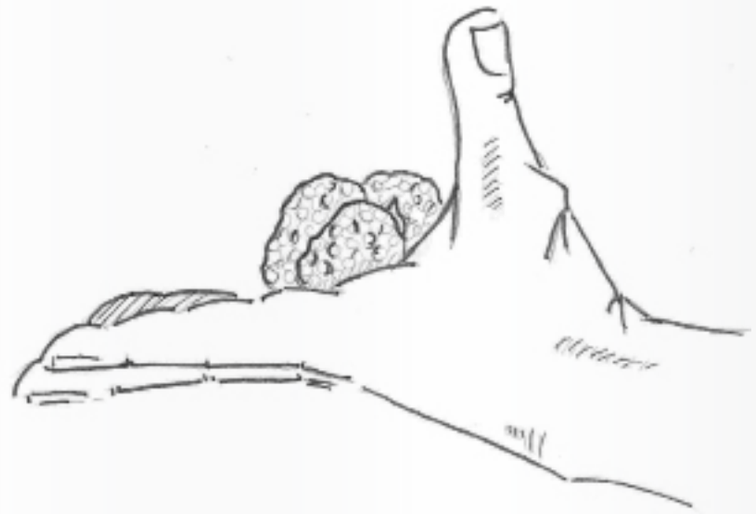
Hence you can put forward that the interaction and product vision can function as a program of dements, they give direction to the concept synthesis and provides qualitative (and not normative) information for the evaluation *[4]*

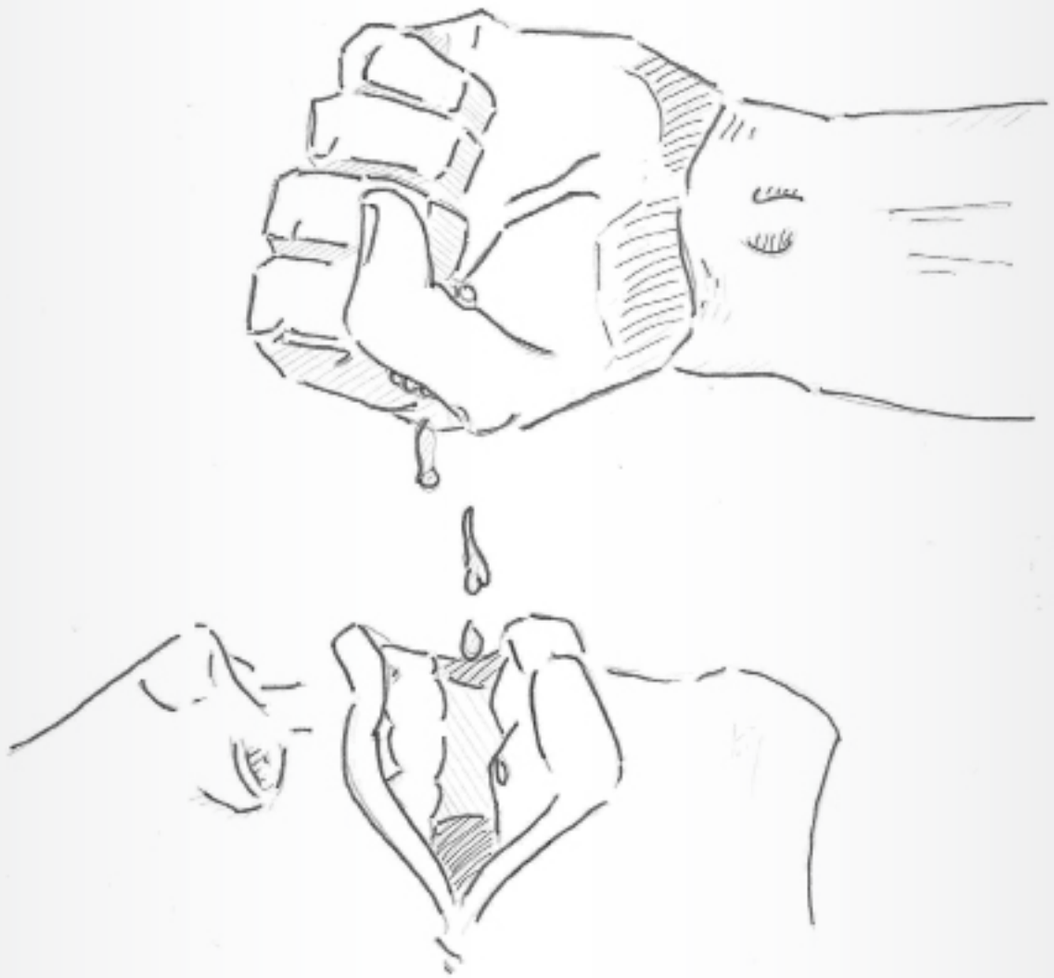
Many words so far. Words are important to the ViP process. Words allow abstract manipulation and developments of ideas. Now it's time to fix idea and to start to think at product level. ViP is about thinking at the other levels of abstraction. *[5]*

[4] [Hekkert, P. and Van Dijk, M. (2000) ViP: Visie in Productontwikkeling (ViP: Vision in Product design), Internal Report, Delft University of Technology.] *[5]* [Loyd, P., Hekkert, P., & van Dijk, M. (2006). Vision in product design (ViP): The warm bath, Delft.]

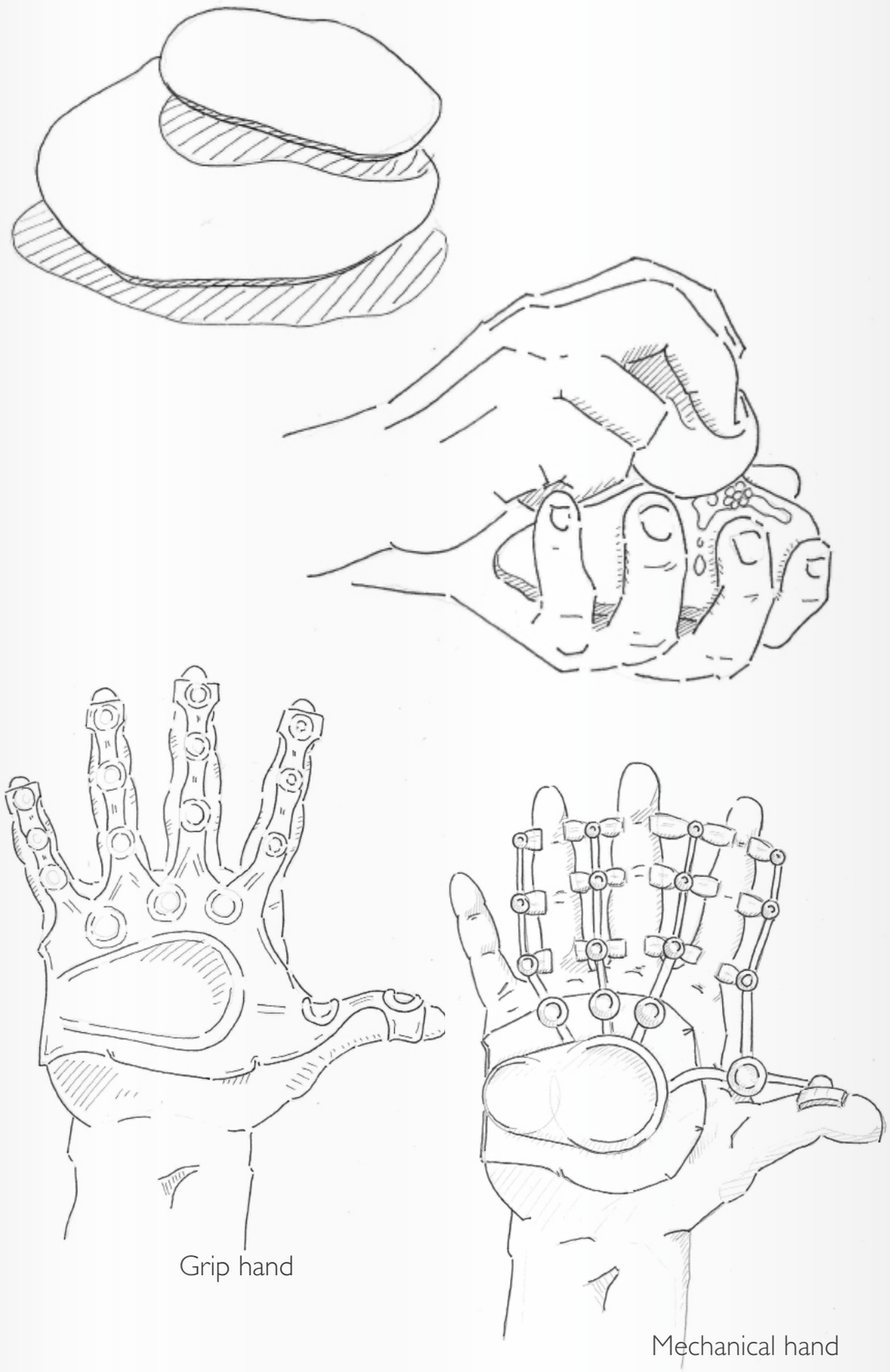
Construction - Product vision

With trying out new combinations of malted milk drinks, people started to add fruits to the malted milk blends with a very tasteful result in 1932. From this point on, people started to experiment with the blender and the possibility to combine different fruits and ingredients together and to explore with their sense of taste, smell, hearing, touch and sight.
With this blender project I want to lay the foundation, not with the original malted milk liquefier blender, but by looking at the possibilities of fruit and by keeping close contact with the fruit.

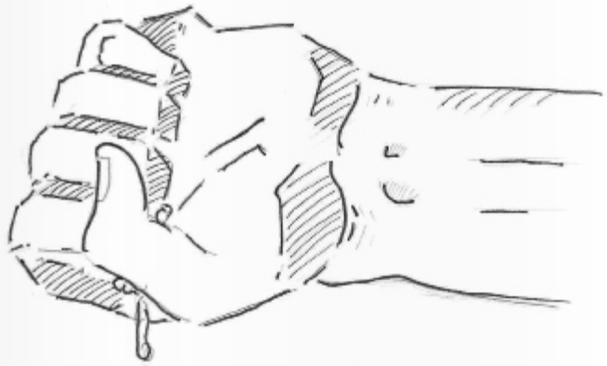


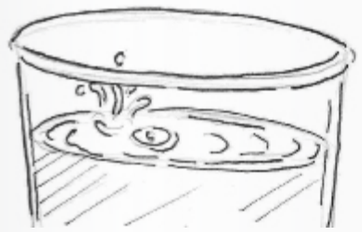


To grow, live and reproduce, plants absorb water. By absorbing water trough really small structures, plants purify the water and use this clear water to grow. Animals – homo sapiens, got aware of this storage of clear water and found out which plant or part of a plant could be consumed. Especially many of the fruits attracted the attention, not only because the high amount of water and nice taste, but also of the high concentration of the necessary nutrients, like vitamins and minerals to stay healthy and alive. People started to eat and collect and experiment with the possibilities of the fruit. By for example squeezing them and sometimes separating different parts it was easier, faster, more tasteful to consume the fruit.
The limits to our physical strength can stop us from living healthily or prompted us to start using tools, to accomplish our goals. So it is interesting to look at the physical qualities of the fruit and the 'shortcoming' of humans to make a nice Fruit juice or Smoothy out of the fruit. I will try to accomplish this within a minimal number of steps and as close to nature and your senses as possible.

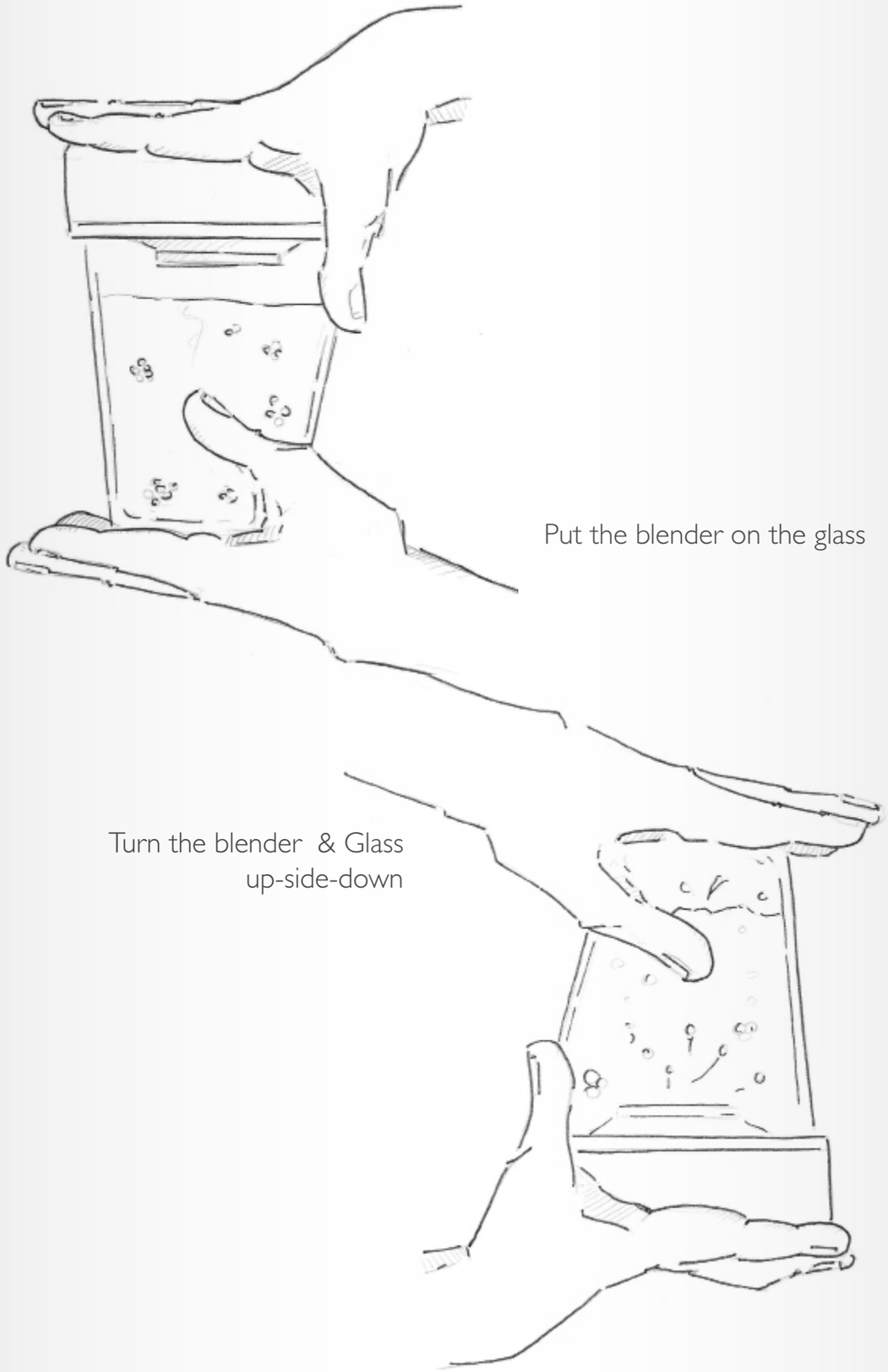


Power-rib-bag



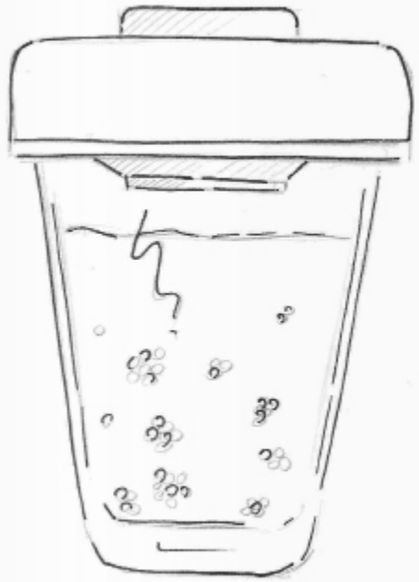


Put the Fruit and the other ingredients in the glass

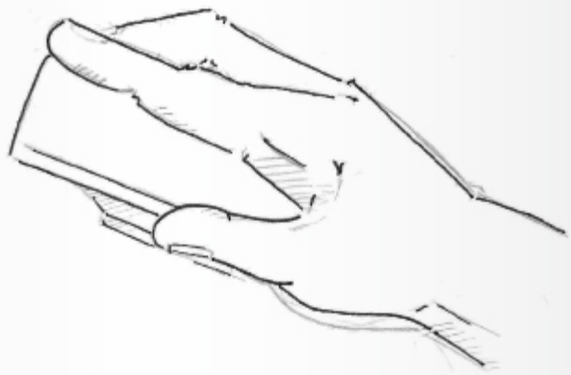


Put the blender on the glass

Turn the blender & Glass
up-side-down



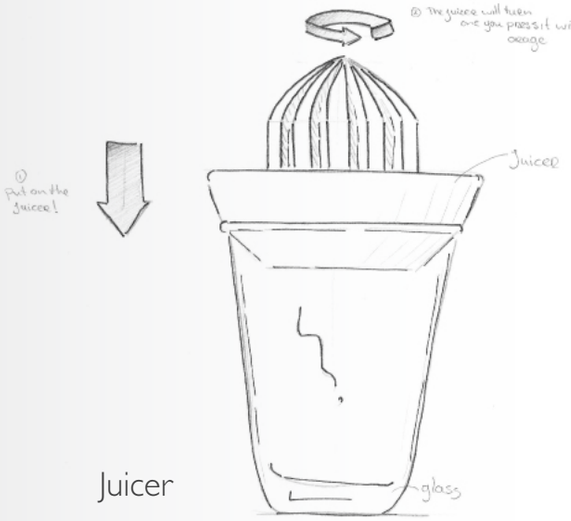
Ready



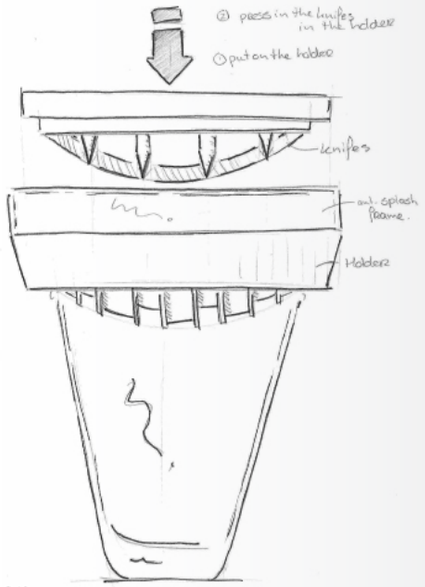
Refreshing
Fruit juice

In order to really live healthily, we need to learn, among other things, how to be able, without destroying the freshness and good nutrients, to prepare healthy food. People should be motivated by helping them to overcome obstacles and empowering them to take action in a playful, flexible, fun and easy to adopt motion to not to make it an extra step or additional activity but an integral part of their daily routine.

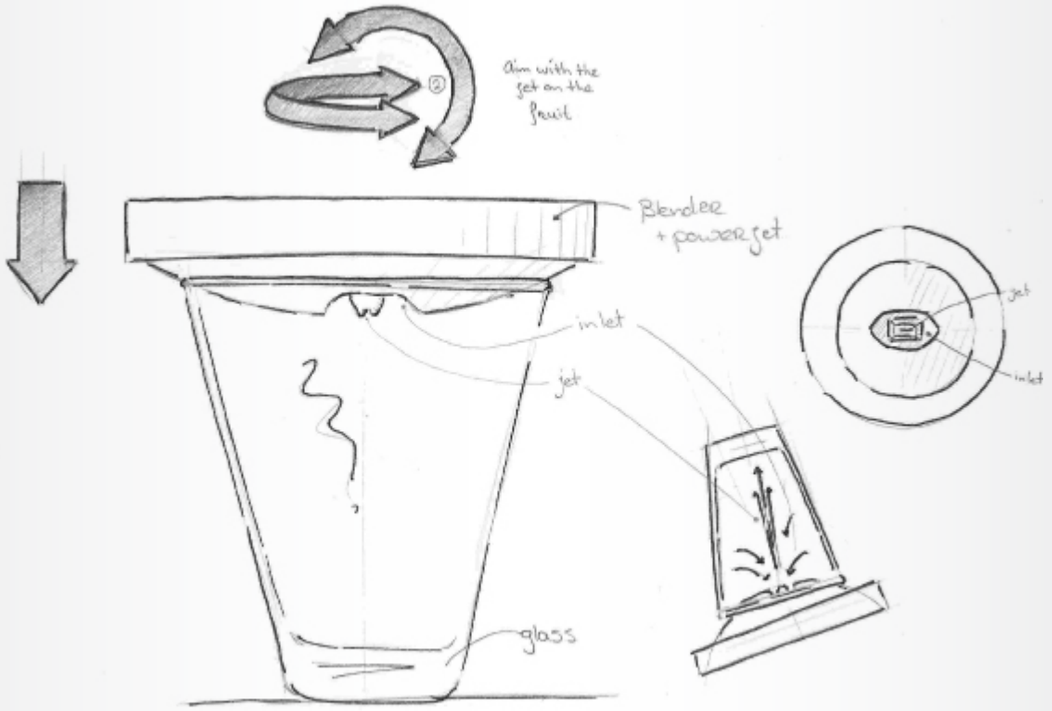
Other Ideas



Juicer

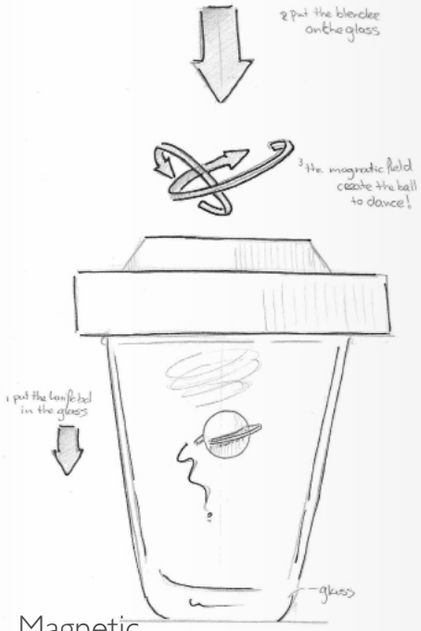


Cutter

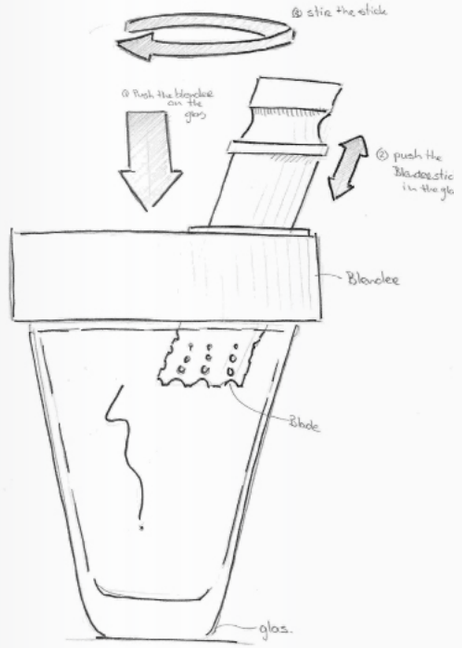


Power stream

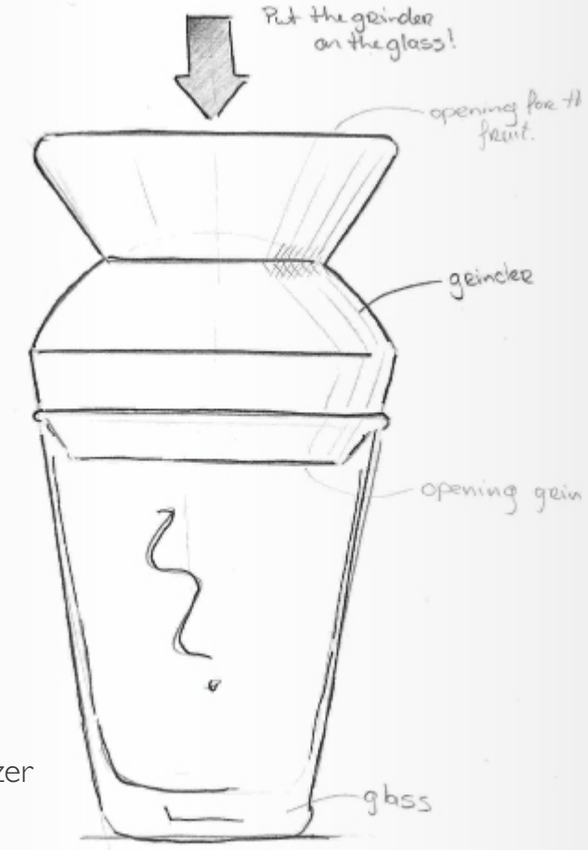
Stamper



Magnetic blades



Movable miniblender



Pulverizer

Other Ideas

VPH

Introduction

After creating the final Product vision, and so a further completion of the final product proposal it's time to use the guidance of the Value Proposition House introduced during the Vip construction context level phase. In this VIP construction – context level only the End-user insights of the five VPH's has been created, to overcome that preconceived ideas will influence the product vision. Now all five VPH's starting from the first level; Easy & fast, Space saving, Social commerce, Anywhere, Motivate to create are being created.
This VPH's is a Philips (marketing) tool to help develop winning propositions that are designed Around You, Easy to Experience and Advanced. The VPH's are build up out of 3 overall structures; the Brand Position and the Inside-Out & Outside-In, which are subdivided in different parts; The target, Consumer insight, Competitive Environment, Benefits, Reasons to believe, and the Discriminator.

Target

The Target has a leading role and is thus very important and determine for the VPH's and therefore directly for the completion of the product proposal. To find the best relating target group for each VPH's I use the research – Philips Cold Beverage Segmentation's (and Philips Food Preparation) executed by Synovate Research reinvented in assignment and cooperation with Philips. It's a research to come up with a quantified consumer segmentation based on Domestic & Household needs. Is has been executed in France (800) Germany (800) China(1000) and Brazil (1000). The research has been executed to define & priorities range of consumer needs, identify target groups of interest and improve success of the new & existing product.
By using the outcome of this research I was able to combine each VPH's to a target group and use the related information (for example there other needs) to improve the success of the blender proposal for each VPH's in the domain of Cold Beverages for Philips.

A short impression of the six different target groups that came out of the research;
Passionate Professionalism: Need for high quality, innovative tools & appliances that help to deliver professional results; Likes to make new & different drinks to impress others
Guidance & Support: Need for help, like guidance and support in a practical way (but not per se only via tools and appliances) to create professional looking and tasting cold drinks that impress others and that foster a healthy lifestyle.
Just doing it: Need for good value, basic appliances that prepare cold beverages in an easy and practical way without per se leaving the user fully in control.
Traditional competence: Need for straight-forward, reliable, without frills tools & appliances that deliver great results and that simplify the task of hot drink preparation.
Out of home & premium: Need for premium quality, innovative appliances that help to display status and/or save time that can then be spent on other activities: 'Out of home' image, quality and convenience are the standards aimed for
Negative: Need for basic, but low cost appliances that do not require any competence, time and effort and do not cause frustration.

Every Target has his own characterizes (household incomes, market, etc) and therefore give the linked VPH's more related information and a more specific direction. So it's important to find the best suitable Target that underline and strengthen the essence of each VPH's. To realize this I used the questionnaire from the Philips Cold Beverage Segmentation's research, with regard to Domain Specific Attitudes and vs. marked segmentation.
By looking at each question I was able to compare the attitude of the question to the VPH and by looking witch target group Agree (strongly) – Neither – Disagree (strongly) with the question I was able to find the best related target group for each question for each VPH. By doing this for each VPH with every Domain Specific Attitude question is was able to find which target group was most interesting for each of the five VPH's.

Motivate to Create
For example the question: 'I like to add my own personal touches to the drinks I prepare';
Agree (strongly) – Neither – Disagree (strongly)
PP(A91% N7% D3%)
JDI (A74% N15% D11%)
TC (A72% N15% D13%)
G&S (A70% N21% D10%)
OOH&P (A63% N27% D9%)
N (A32% N 31% D34%)

For the VPH; MtC the sequence of target groups for this question is PP-JDI, TC, G&S - OOH&P - and N where PP is the most interesting by (quite) far and N isn't that suitable for the VPH MtC.

Some attitudes really underline the essence of the VPH, like the example question does really nicely for the VPH MtC. I gave these questions a small weight factor for that particular VPH to give this question a more surplus value in compare to less interesting questions that put forward a less relevant target group. As also the question 'There is no point making your own cold drinks as it is so easy to buy them ready made' is interesting for the VPH MtC but then in particularly the target groups who respond in disagree (incline to neither).

By going to each question 5 times (for each VPH), to look of the attitude suits the VPH and look witch target group responded in a interesting way an enumeration of sequences of target groups could be made for each VPH. Here you can find these enumerations:

Easy and fast
1. Just doing it
2. Guidance & support
3. Negative
4. Traditional
5. Passionate Professionalism
6. Out of home & premium

Space-saving
1. Negative
2. Out of home & premium
3. Just doing it
4. Traditional competence
5. Passionate Professionalism
6. Guidance & Support

Social commerce
1. Guidance and support
2. Passionate professionalism
3. Out of home
4. Just doing it
5. Negative
6. Traditional competence

Anywhere
1. Passionate Professionalism
2. Guidance & support
3. Just doing it
4. Out of home & premium
5. Traditional
6. Negative

Motivate to create
1. Passionate Professionalism
2. Guidance & Support
3. Just doing it
4. Traditional competence
5. Out of home & premium
6. Negative

I applied the same method to combine the most interesting Targets to each VPH by using the research Philips Food Preparation -Synovate Research reinvented. Because this research lies a bit further from the Blender and making Fruit juices & Smoothies I used this trial particularly to verify the last result.
Another interesting and affirmative result came to light when I laid each target group on the most corresponding level of the pyramid of Maslow where I already laid down the VPH's on. The target group that lays on the same level with one of the VPH's is generally the same as the combinations just came forward.

Set up

With the combination of a Target to each VPH I was able to used the information related to each Target to set up and strengthen each VPH's. The information consist out of; Demographics, Segment profile -lifestyle Attitudes, -Appliance Needs, Brand ownership, Appliance Ownership and frequency of use, Purchase decisions.

Easy & Fast - JDI

1. Target
Attitudinal:
-Basic appliances that prepare cold beverages in an easy and practical way.
-Very low level of concern regarding the professional appearance and taste of cold drinks made and low desire to pay extra attention and to impress others.
-Not averse to trying new flavors and blends.
-Always considerate of price and with a strong aversion to premium high end goods.
-Average possession number of fruit drank makers.
-Not to sensitive for brands looks & styles and innovation.
Demographics:
Relatively higher number of females
Lowest levels of household income

2. End-User Insight
"When I wake up, before a long day of hard work, I have little time for myself. It's not the right moment, to already get frustrated with the complication & hassle of the existing fruit preparation appliance. I wish there was a fast and easy way to enjoy my fresh fruit juice in the morning and help me live a more healthy life"

3. Competitive Environment
(The ready made drinks and BIG blenders).
Citrus press
Moulinex
Philips
Seb
Krups
Senseo (Philips)

4. Benefits
I feel more healthy and relaxed, because I'm able to enjoy my daily amount of fresh fruit in an easy and fast way.

5. Reason to Believe
- Use drinking glass as starting point
- Just before you drink.
- Has to work good, don't have to be quite.
- Don't have to have many features and versatile.
- Powerful

6. Discriminator
Only Philips *** provides an easy and fast way to make excellent one portion Fruit juices & Smoothies personalized to your own taste preference, without a hassle.

Brand Position
Design around you
(Emotional Benefit)
With the Philips *** I can fast create an excellent fresh Fruit juice & Smoothie and even feel relaxed while doing so.

(Functional Benefit)
Philips *** one piece system that is focused on easy and fast preparation of Fruit juice & Smoothies.
Advanced
Without the time-consuming cleaning and set-up & break down you are able to create excellent fresh hand made Fruit juices & smoothies.
Easy to Experience
You only need the minimal; the small Philips ***, a glass and the ingredients to quickly great an excellent one portion Fruit juice or Smoothie.

Space Saving - Negative

1.Target
Attitudinal:
- Lack of enjoyment in making cold drinks, little care to output.
- Task difficult
-Whilst having a firm belief that appliances are unnecessary and over complicated.
-Sees appliances as adding further complication, not simplifying or easing process.
-Considering price and strong aversion to premium high end goods.
-Not to sensitive for brands looks & styles
Demographics:
Higher proportion of males
Higher amount of 18 – 24 year olds
Lower level of household income
Lower levels of household responsibility and frequency of undertaking task
Relatively low level of drink making appliance ownership

2.End-User Insight
"I am a 23 year old student, and I am constantly aware of the tiny house I live in. My kitchen has limited storage capacity and this is a problem, especially for all those BIG kitchen appliances. Even though I would love to enjoy fresh & healthy homemade juices, this lack of space is preventing me. Don't you think it is time for a smaller fruit processor so I can also experience fresh & healthy homemade juices."

3. Competitive Environment
(Hand blenders, mini blenders).
Krups
Braun, AEG
Severin
Senseo (Philips)
Siemens, Rowenta

4. Benefits
It's only fair that I am able to experience the convenience of fruit processing, only possible because of this small fruit processor.

5. Reason to Believe
- Use drinking glass as starting point
- Just before you drink.
- Minimum amount of space possible (and easy to store) (light weigh)
- Freedom and portability of appliance, to work wherever I want them to
- Powerful
- Easy to personalize and improve the taste

6. Discriminator
Only the really small Philips *** creates the possibility to simplify and ease my fruit juice & smoothie making processes.

Brand Position
Design around you
(Emotional Benefit)
With the Philips *** I am able to make fresh Fruit juices & Smoothies by experiencing the convenience of a fruit processor.
(Functional Benefit)
Philips *** one piece system is focused on creating Fruit juices and Smoothies without taking a lot of space and time.
Advanced
Even being a real small cordless fruit processor, you are still able to make excellent Fruit juices & Smoothies.
Easy to Experience
You only need the minimal; the small Philips ***, a glass and the ingredients to quickly great a real fresh, excellent one portion Fruit juice or Smoothie.

Social Experience - G&S

1.Target
Attitudinal:
-Likes to make extra effort when making drinks for others believing this will make a positive and lasting impression.
-Strong desire to make high quality looking & tasting cold drinks
-But unable to deliver the desired results due to a perceived capability gap
-Wants to live a healthy lifestyle, looks for healthy options (to make at home)
-Thinks that drinks made at home are better than those prepared out of home
-Somewhat positive towards drink making appliances but looks for appliances specifically with practical / sensible benefits e.g. quiet, energy efficient, compact appliances but considerate of price.
-Sensitive for brands looks & styles.
Demographics:
Average income
Higher proportion of females

2.End-User Insight
"Having fun with friends, like barbequing, enjoying a high-tea, having a fondue, is the best way to enjoy our time together. Throwing a juice party would also be great (or making the others complete) but the inconveniences of existing fruit appliances get in the way of making your own personal (single portion) variations of fresh fruit juices or smoothies. Wouldn't it be great to be able to share the experience of creating and enjoying your own cold fresh Fruit juice & smoothie and all of this in an easy and stimulating way."

3. Competitive Environment
(BIG Blenders).
Juicers and Citrus press
RU
Tefal 25
Philips 17
Midea 17
Moulinex 16
Braun, Scarlett 11

4. Benefits
This fruit processor makes it possible to share the experience, stimulate each other in the creation process and easily enjoy different variations of Fresh fruit juices & Smoothies (in a cheerful and relaxing way).

5. Reason to Believe
- Use drinking glass as starting point
- Just before you drink.

- Save
- Work simple, straight from the box (intuitive, convenient, dynamic).
- Work quiet as possible
- Freedom and portability of appliance, to work wherever I want them to
- Minimum amount of space possible (and easy to store)
- Energy efficient as possible

6. Discriminator
Only Philips ***, provides the unique possibility to share the experience and stimulate each other in the creation of your own special fresh hand-made Fruit juices & Smoothies.
Brand Position
This fruit processor makes it possible to share the experience, stimulate each other in the creation process and easily enjoy different variations of Fresh fruit juices & Smoothies (in a cheerful and relaxing way).

Design around you
(Emotional Benefit)
With the Philips *** I can share the experience and stimulate each other in creating different variations of Fruit juices & Smoothies.
(Functional Benefit)
Philips *** one piece system that is focused on stimulating and helping me to make the nicest Fruit juice & Smoothies in an intuitive and convenient way.
Advanced
To share the making of Fruit juices en Smoothies and stimulate each other in de creation, delivers the most special and excellent tasting creations.
Easy to Experience
Because of the dynamic and playful, intuitive way of using the Philips *** it stimulates yourself and each other to make the nicest Fruit juices & Smoothies on a fun and cheerful way.

Anywhere - PP (G&S)

1.Target
Attitudinal:
-Very positive towards all aspects of making cold beverages
-But sometimes experience difficulty to deliver the desired results due to a perceived capability gap
-Wants to live a healthy lifestyle, looks for healthy options (to make at home).
-Wants to make a positive and lasting impression.
-Extremely positive towards the benefits of owning and using top quality appliances with practical / sensible benefits.
- Likes high quality deliverables, but not naturally affiliate with premium goods.
-Sensitive for brands looks & styles and innovation & different in the way that they work.
Demographics:
-Highest (-average) household income
-Relatively high number of household appliances
-Highest number of beverage making appliances and interested in keeping up to date with technology

2.End-User Insight
"Having a relaxing, quiet sunny day in the park, brings back my essential energy. It is however disturbing when you taste your fresh home-made fruit juice or smoothie and it has turned brown and smelly. Additionally, like bought premixed juices, it has lost the fresh taste and the vitamins. I wish there was a way to enjoy fresh hand-made fruit juices & Smoothies without fuss, wherever and whenever I want."

3. Competitive Environment
(Travel blenders).
Juicer
Citrus press
Smoothie maker

AEG
Braun
Krups
Philips
Siemens

4. Benefits
Making personalized fresh hand-made fruit-juices & smoothies anywhere you want and without (experiencing) a fuss, gifs you a relaxed and honest healthy feeling.

5. Reason to Believe
- Use drinking glass as starting point
- Just before you drink.
- Freedom and portability of appliance, to work wherever I want them to
- Easy to personalize and improve the taste
- Minimum amount of space possible (and easy to store) (light weigh)
- Work quiet as possible
- Energy efficient as possible
- Save
- Things done in the shortest possible time
- Work simple, straight from the box (intuitive, convenient, dynamic).
- Simplify my life

6. Discriminator
Only Philips *** provides the possibility to make real fresh and delicious Fruit juices & Smoothies, that suit the taste preference at the moment, without a fuss and anywhere you are.
Brand Position
Design around you
(Emotional Benefit)
With the Philips *** I can make fresh Fruit juices & Smoothies anywhere and without a lot of fuss.
(Functional Benefit)
Philips *** one piece system that is focused on easy and fast preparation of Fruit juice & Smoothies anywhere you are.
Advanced
You can prepare your fruit juice & Smoothie anywhere you are just before you drink, so it is real fresh, the vitamins are preserved and it suits the taste preference of the moment, without any fuss.
Easy to Experience
You only need the minimal; the small cordless Philips ***, a fruit container (or a glass and the ingredients) to quickly great a real fresh, excellent one portion Fruit juice or Smoothie.

Motivate to Create - PP

1.Target
Attitudinal:
-Very positive towards all aspects of making cold beverages
-Wants to stand out from the crowd,
-Mainly motivated by high quality deliverables, not only price
-Wants to be in control.
-Extremely positive towards the benefits of owning and using top quality appliances.
-Sensitive for brands looks & styles and innovation & different in the way that they work.
-Passionate about trying out new things.
Demographics:
-Highest household income
-Relatively high number of household appliances
-Highest number of beverage making appliances and interested in keeping up to date with technology

2.End-User Insight
"I enjoy cooking and dining. It allows me to escape from my busy life and relax. The fun is in creating and experimenting with the flavors, colors & smells of ingredients. The existing fruit preparation appliances are complex, not spontaneous & innovative and do not Inspire me. I wish there was an easy to use fruit preparation tool to stimulate and help me to create the best (single portion) fruit juices / smoothies."

3. Competitive Environment
(hand pers)
Juicer
Citrus press
Smoothie maker.
AEG
Braun
Krups
Philips
Siemens

4. Benefits
Only now I am able to personalize and truly experience the creation of the nicest fruit juices & smoothies, because of the stimulating and conscious way of making single portions that I easily can taste and improve.

5. Reason to Believe
- Use drinking glass as starting point
- Just before you drink.
- Easy to personalize and improve the taste
- Many features and versatile (less components)
- Powerful
- Fit with the look and style of my home (and match other appliances)
- Simplify my life
- Things done in the shortest possible time.
- Save
- Freedom and portability of appliance, to work wherever I want them to
- Minimum amount of space possible (and easy to store)
- Energy efficient as possible
- Work quiet as possible
- Work simple, straight from the box (intuitive, convenient, dynamic).

6. Discriminator
Only Philips *** motivates and makes it possible to precise translate your taste preference into a excellent personalized hand-made Fruit juice & Smoothie, in an intuitive and convenient way.
Brand Position
Design around you
(Emotional Benefit)
With the Philips *** I can easily experiment creating excellent tasting and looking Fruit juice & Smoothie.
(Functional Benefit)
Philips *** one piece system that is focused on stimulating and helping me to make the nicest Fruit juice & Smoothies.
Advanced
The Fresh Fruit juices & Smoothies taste even better because of the intuitive, convenient, dynamic and easiness in use.
Easy to Experience
The creation of the excellent personalized Fruit juice and Smoothies takes place in the most natural way.

Most interesting

After the creation of these five VPH's a questionnaire has been handed out to ask different employees of Philips – VTA / Product Designers, Directors, Assistants, Consumer Marketing Manager, etc. complete and/or make changes and to state which VPH is most interesting. After collecting the questionnaires and having interesting discussions with most of the questioned, about the five VPH's and the created Product vision the outcome, despite of the different ideas and visions, came particularity down on one general idea.

This general idea was mainly based on the personal idea and vision, which VPH they like best and in there opinion fill up the greatest demand of the market at the moment. A more professional view gave more direction and specification to a part of this general idea that particularly could be interesting for the consumer & market and fits best in the Mission and Vision of Philips.

This general idea nicely corresponded to the context factors and especially fell in line with the trends described in the VIPconstruction – context. In brief; on one hand you want to be able to create the nicest Fruit juices & Smoothies anywhere and on the other hand you also want to be able to do it Easily and without a lot of fuss. According to the questioned the combination of the VPH's (Motivate to create) Anywhere and Easy and fast described this idea perfect and this should be the most interesting direction.

The more professional and specified view was more focused on a particular part the top of this general idea.
You want to create the best self-made Fruit juices & Smoothies but you don't want to experience many disadvantages and you don't want restrictions of freedom and portability of the blender, you want to work wherever you want. Still it's interesting to be able to do it quick and fast without the complications & hassle of the existing fruit preparation appliances but this should not be the main focus.
Therefore the final VPH should be a combination of the VPH; Motivate to create and Anywhere and because these VPH's are on more then one point quite similar (because of e.g. they have the same Target and a together shape a specific part of the general idea) I was able to nicely combine these in one final VPH that should be the most interesting direction to guide the product vision to the eventual product proposal.

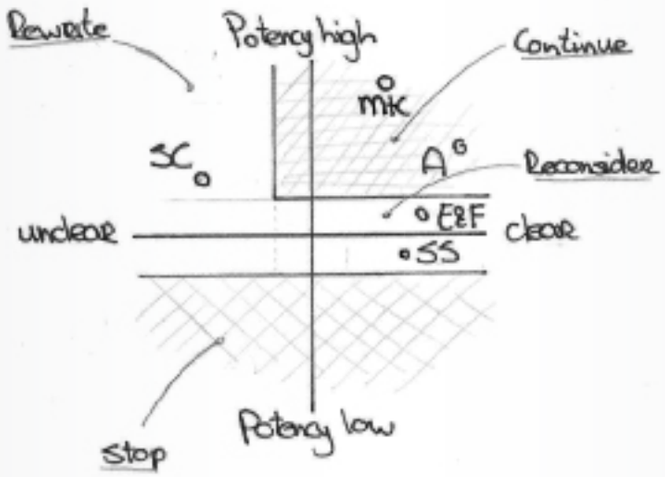
Result of the questionnaire; Average personal preference of 22 questioned (personal view):

1. Anywhere – PP 36%,
2. Easy & fast – JDI 36%,
3. Motivate to create - PP 18%,
4. Space saving – N 9%,
5. Social commerce – G&S 0%.

Result of the questionnaire; Average professional preference of 22 questioned (professional view):

1. Motivate to create - PP 36%,
2. Anywhere – PP 27%,
3. Easy & fast – JDI 23%,
4. Social commerce – G&S 14%
5. Space saving – N 0%,

Potency



The most marked result that came forward from the discussions lead followed from the questionnaire was the indistinction considering the VPH Social commerce.
This VPH isn't incomprehensible in first instance and while setting forth the idea and essence behind Social commerce, questionnaired get more and enthusiastic for this VPH. Although the greater part find this VPH really interesting they don't think this VPH is strong enough by itself but could be a nice combination or addition to another VPH particularly Motivate to create.

That this could be an interesting VPH's becomes a bit more clear if we once again focus on the enumeration of the sequence of Targets that came forward when combing the Targets to the VPH's. Three Targets came forward quite often as interesting target group and as overall interesting Target came G&S which also has been linked to the VPH Social commerce.

Basing the decision of interesting VPH's not by the questionnaire but by looking at there related Target's, you again get an interesting and quite similar result. For making a decision based on which is the most interesting Target, I looked for Lifestyle attitudes, needs and numbers that show that the Target stands positive regarding (appliances for) the Fruit juice and Smoothie making.

If you look to the owner ship of number of appliances:
PP (2.5) G&S (2.0) and JDI (2.0) are most interesting. Especially PP owns often more then 2 or 3 appliances.
If you look more specific to the Smoothie & Fruit Juice making appliances (Smoothie maker, Citrus press, Juicer), you again find these three Target groups in the same order of rank. PP again leading with specially interesting the biggest number of the ownership of Smoothie makers.

If you look at the drinks that are served in the household, and especially the Smoothies and Fruit Juices, it can be concluded that PP, G&S and JDI are most interesting. A difference is made in Fruit Juices (bought / pre-prepared), Fruit juices (blended / made at home) and Smoothies. Blending and drinking Fruit juices and Smoothies is mostly done by PP followed by G&S and JDI. Where as drinking Fruit juices bought is mostly done by the same three but now is a reversed order; JDI, G&S and PP.
PP could be an is maybe the most interesting target group because they are most often willing to make there own Fruit juices & Smoothies but it also could be interesting to find out why exactly JDI (and G&S) are often buying Fruit juices instate of creating them themselves. Maybe you can motivate them with a new blender concept to create fresh Fruit juices & Smoothies, that are also much healthier because of the higher concentration of vitamins in the drinks if you create them just before you drink.

Juicer freq						
GeneralOccasions per day.29	PP .41	G&S .24	JDI .18	TC .15	OOH&P .38	N .23
Citrus press						
GeneralOccasions per day.47	PP .67	G&S .43	JDI .42	TC .46	OOH&P .44	N .28
Smoothie maker						
GeneralOccasions per day.50	PP .7	G&S .23	JDI .26	TC n/a	OOH&P .91	N n/a

The three remaining target groups, TC, OOH&P and N hasn't been mentioned in this part because of there negative attitude / lesser interest regarding Fuit juice & Smoothy making. They could be an interesting point of attention because of, for example there low ownership of Smoothie maker, Citrus press, Juicer at the moment and although OOH&P are much out of home, when they are at home the often drink taped water and home made Fruit juices and Smoothies. However these will be difficult target groups. For example because they don't have any enjoyment of task (healthy, New & diverse), the barrier of the use of appliances is high and TC and N can not be considered as early adaptors for new innovative products.

PP, G&S and JDI are most of the time close together although there can be find big differences based on the professional output. Where PP & G&S find it important that the result is good, JDI doesn't care and have a low interest in the result and don't put in the extra effort and attention because after all most of the time they buy pre-prepared Fruit juices.
The Competence and Premium (Height of income) are high for PP also compared to the target groups G&S and JDI. Where the height of income for JDI is the lowest compared to all target groups.

Interesting country
%Markets

PP DE22, RU,BR21 CH18 FR16 (Germany lays can be compared most to the general demographical nr.)
JDI biggest in FR20 BR17 DE,RU,CH14, G&S biggest in Ch Ru21 FR,BR20 DE15, N biggest in DE16 CH15 RU14 BR12 FR11.
Most interesting market should be DE. The general picture should be [FR – DE + RU BR CH little bit]

Drink making General Occasions per day 2.0		DE 2.4	BR 2.4	FR 2		
No. of appliances General Mean number 2.0		DE 3.0	FR 2.5	RU2.1	CH1.4	
Appliances ownership General	Juicer 21	RU42	CH30	DE19	FR 10	BR5
	Citrus 34	BR56	FR51	DE40	RU5	CH1
	Smoothie maker 7	DE17	FR8	RU5	BR2	CH1
Juicer freq Occasions per day .29		FR .2	DE.37	RU .2	CH.28	BR.4
Citrus press Occasions per day .47		FR .36	DE .3	RU.27	CH /	BR .74
Smoothie maker Occasions per day .5		FR. 19	DE .52	RU.47	CH /	BR /

Motivate to Create, Anywhere - PP

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1.Target
Attitudinal:
-Very positive towards all aspects of making cold beverages
-But sometimes experience difficulty to deliver the desired results due to a perceived capability gap
-Wants to be in control.
-Wants to live a healthy lifestyle, looks for healthy options.
-Wants to make a positive and lasting impression / wants to stand out from the crowd.
-Extremely positive towards the benefits of owning and using top quality appliances with practical / sensible benefits.
-Mainly motivated by high quality deliverables, not only price
-Sensitive for brands looks & styles and innovation & different in the way that they work.
-Passionate about trying out new things.
Demographics:
-Highest (-average) household income
-Relatively high number of household appliances
-Highest number of beverage making appliances and interested in keeping up to date with technology

2.End-User Insight
I like to create the best fresh self-made Smoothies & Fruit juices, by experimenting with inspire full flavours, colours & smells of ingredients. However current blenders are boring and I can only use them at home. I wish there was an enjoyable way to do so wherever and whenever I feel like it.

3. Competitive Environment
AEG
Braun
Krups
Philips
Siemens


Black & Decker PartyMate Portable Drink Maker DM100BG blender


ColemanRechargeable Portable Blender, Model No. 850-870


The Boat or drill blender


GSI Vortex Blender


V8-powered margarita blender


The juice peddler Townie 3 + Mini-B3


Tailgator gass powered blender

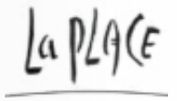

Innocent little tasty drinks


Hero – fruit today


Knorr vie


Campina Goedemorgen Fruit!


Chiquita Smoothie



Smoothies – la place

The Smoothie company

Shakie's

4. Benefits
Experience the making of personalized fresh self-made Smoothies & Fruit-juices whenever and wherever gifs you an honest healthy feeling.

5. Reason to Believe
- Use drinking glass as starting point.
(-Good sealing, -Nice presentation serving Fruit juice & Smoothie)
- Just before you drink
(-Available whenever you feel like a fresh drink, -Distance between preparation and drinking in time and proceedings as small as possible)
- Easy to personalize and improve the taste
(-easy to taste, look, smell, feel)
- Many features and versatile (less components)
- Powerful
(-Have to deliver 10 smooth servings without charging, - To be able to crush ice)
- Save
(-Every interaction with the product)
- Fit with the look and style of my home (and match other appliances)
- Freedom and portability of appliance, to work wherever I want them to
- Minimum amount of space possible) (and easy to store) (light weigh)
(-max.150x150x150mm (-max ?kg)
- Simplify my life
(-Extending range of healthy options)
- Things done in the shortest possible time
(-max of the min preparation time 30sec)
- Energy efficient as possible
- Work quiet as possible
- Work simple, straight from the box (intuitive, convenient, dynamic).
(-Simple and Informatierijk userinteraction)

6. Discriminator
Only Philips *** provides the possibility to make real fresh and delicious personalized Smoothies & Fruit juices wherever and whenever you feel like it.
Brand Position
Design around you
(Emotional Benefit)
With the Philips *** I can easily experiment creating excellent tasting and looking Fruit juice & Smoothie.
(Functional Benefit)
Philips *** one piece system makes it possible to prepare Smoothies & Fruit juice wherever and whenever you want.
Advanced
You can easily prepare your Smoothie or Fruit-juices anywhere you are and just before you drink, so it is real fresh, the vitamins are preserved and it suits the taste preference of the moment.
Easy to Experience
You only need the minimal; the small Philips *** and the glass with the ingredients to simply great an excellent personalized fresh Smoothie or Fruit juice.

Disci

plines

Introduction

Product proposal

After finishing a satisfying ViP approach with an interesting Product vision as a result and creating a final VPH, it is now time to realize the blender Product proposal by fixing ideas again and thinking at the product level.

The Product vision already created a product direction for this Product proposal and to take it further and to realize it, I took into account and played with the following disciplines; the Environment, the Ergonomics, the Techniques, the aesthetics; Form and Decoration & Pattern, the User Interface & Interaction and Safety and the Material & Finishes, Detail & Colors. Each of these disciplines interacted with one another for every decision that had to be made. This resulted in many links and connections between the different disciplines. However to phrase a clear product proposal, I described each discipline with the most relevant decisions made individually, and as complete as possible in the most chronologic self-evident sequence possible. Sometimes two or more disciplines had a big influence on a single decision which forced me to deviate from this well-organized description. Mainly the discipline ergonomics was often involved in other disciplines.

Realizing this Product proposal is about creating and specifying the quality of a person's experience and interaction throughout the entire period of engagement with the blender. A bridge has to be formed between the user, the Product vision the VPH and the different mentioned disciplines but is also directed by these.

To realize an identity of the products coming from Philips DAP - department Food & Beverage, Code for Domestic Appliances (CoDA) has been developed involving the creation and specification of the Form, User Interface, Materials, & Finishing, Deco & Pattern and Detail. This approach describes a harmonization / diversification and achieves simplicity in design. The ingredients for the CoDA are based on Aesthetic guidelines on DA level, Aesthetic guideline description per chosen IPP theme, General aesthetic theme approach versus price points for form language, detail, material & finishing, decoration + pattern, colour and user interface. Philips' brand promise: Sense & Simplicity, most recent aesthetic trend research (culture Scan).
Where Healthy living and Trigger the senses are chosen to be the most interesting IPP themes for this blender.

Environment

The process of how products are developed nowadays, consists of really complex networks, consisting of people from different competencies from within but also from outside the company that are simultaneously working on compositions of the same product. Also because of these complex networks, it has to be the responsibility of all the people who are directly and indirectly participating in the development of the product, to come up with environmentally friendly solutions and improvements. Especially in for large companies, it is important to concentrate on their own employees and to motivate them to think of what they can do and

how they can contribute personally. Make them aware of what an enormous power they in fact have. Large companies put an enormous number of products onto the market, so even a small step can have enormous results.

Seen in this way, there is a remarkable opportunity for the designer, because a lot of the decisions a designer makes directly involves the environment. In my opinion a designer has to be focused on promoting Man's self-actualization by working on personal, social and environmental well-being so he can improve the quality of Humans life in all aspects. The designer is responsible for delivering a valuable input to the world and therefore has to make conscious and wise decisions.

Because of the close connection to men's health for the product range where the blender takes part in, environment should be a very important standard discipline to take into account. Especially for the product proposal I am creating, where the product vision has a close bond to the environment, it needs to be taken very seriously. Every decision made (i.e. form, materials, etc.) should be considered environmentally conscious and I will start to think of solutions and possibilities beforehand.

An inspiring direction Philips is already working on, are green products. "By designing products that outperform their predecessors and competitors in terms of their ecological footprint it's easier for people to contribute in saving our world." *[16]*

Offering sustainable choices
We enable consumers to make simple, responsible choices about the products they buy and the impact they have before, during and at the end of their life cycle. Our Green Products offer customers, users and society a significant environmental improvement in one or more of the Philips Green Focal Areas:
With our longstanding commitment to reduce the environmental impact of our products, we enable consumers to make simple, responsible choices about the products they buy and the impact they have before, during and at the end of their life cycle. *[16]*

Although this is an interesting and inspiring path, it can also work misleading; not only for the consumer but also for Philips itself, they may never rest on the assumption that they really offer a simple, responsible choice.
Because Philips is not offering all the data to the consumer, people still do not really know how much impact a product (in total) has before, during or at the end of their life on our / the world and thus also can not really compare the product to predecessors and competitors.
So they should be aware that with the introduction of these Green Products, consumers assume that Philips is really making significant environmental improvements and in my opinion Philips obligates itself to do everything they can to make significant environmental improvements not only on one or more Green Focal Area's but on every area possible.
Only when Philips is making people really aware of what kind of impact a product has on the environment, Philips can hand over the responsibility of making a simple and responsible choice to the consumer. But even then employees within Philips still have to make conscious decisions and should feel responsible for what they contribute in and put into this world.

Before going through the different disciplines to realize the product proposal, I listed environmentally friendly solutions and possibilities for the blender beforehand:

- Materials and connections between parts need to be carefully selected and designed so that even complex components, sometimes made out of different materials, can be easily broken down into homogeneous or chemically compatible parts. So when the blender reaches the end of its lifecycle, it can be dismantled easily and broken down into parts which can then be used in new cycles of production.

- Inline with the previous strategy, it could be interesting to carefully design connections between parts so even the consumer can easily dissemble the blender and replace components when they are failing or when new generations of parts are available. These components & tutorials should easily be available to order or buy in stores. The cycle of production and consumption has to slow down and a possibility has to be created to let people build a stronger, more meaningful relation with their blender.

- Like a recipe of a nice Fruit Juice or Smoothy, it will be interesting in more than one way if you introduce and make available the recipe of the blender. Which components & materials are being used, how many of each and how are they prepared for the creation of the blender. Consumers can make a more honest and responsible choice and consider if this ingredient fits their taste. And also may get more involved to find and improve the recipe with interesting and meaningful changes.

- Including a contract or adding a passport to each blender, so the user or new user can 'take over the responsibility' of the blender and can retrieve all interesting details about production, distribution, use and recommendations for the final disposal.

- The quality of each component and the total product assembly has to be high, so this generation of blenders will continue to function for a very long time. Give products back their old dignity and replace the 'use and throw away' mentality (by i.e. simply starting with choosing components, materials and colours that endure and age with dignity). And if you want to part with the blender (or a component) consider donation or selling, and if not possible, recycle it properly.

- The strategy for the next generations should be aimed at a smaller / flatter blender, with a reduction in the amount of materials and energy needed to obtain the desired results. By for example reducing the weight and size you find environmentally friendly results in all parts of the lifecycle; production, distribution, use and disposal. And replace as much of the physical product (for example instructional guides) with software products as possible and reduce the amount of packaging by using the structure of the blender itself.

By listing up environmentally friendly solutions and possibilities for the blender, I hope to make an interesting start for the product proposal and to participate in the contribution to a more environmentally friendly future.

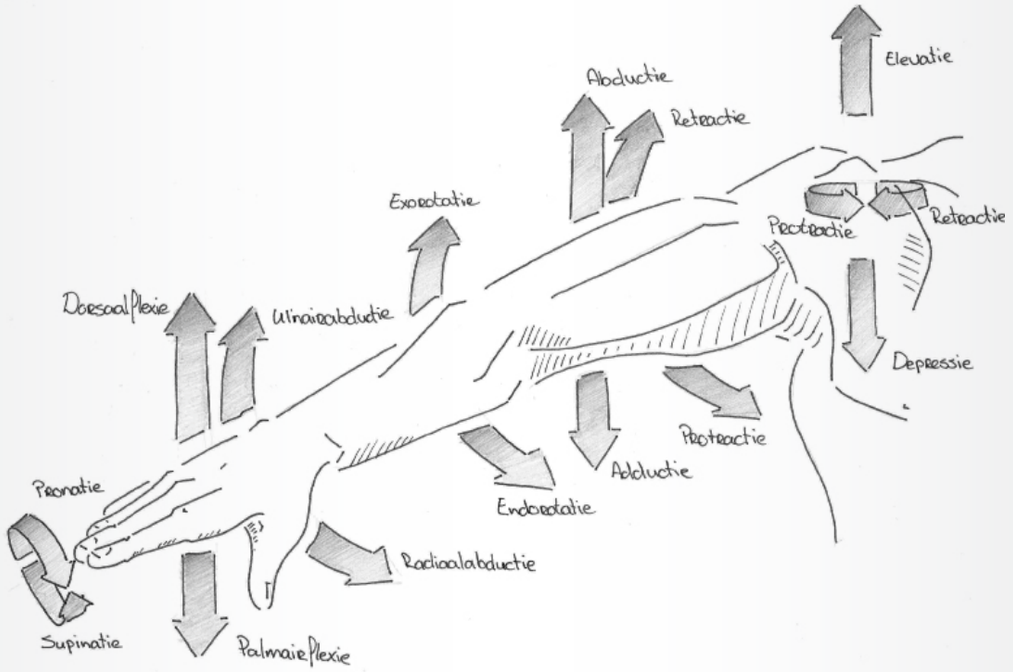
[16] [Philips (2008). sustainability. Collected at 30 September 2008 from http://www.philips.com/about/sustainability/index.page]

Ergonomics

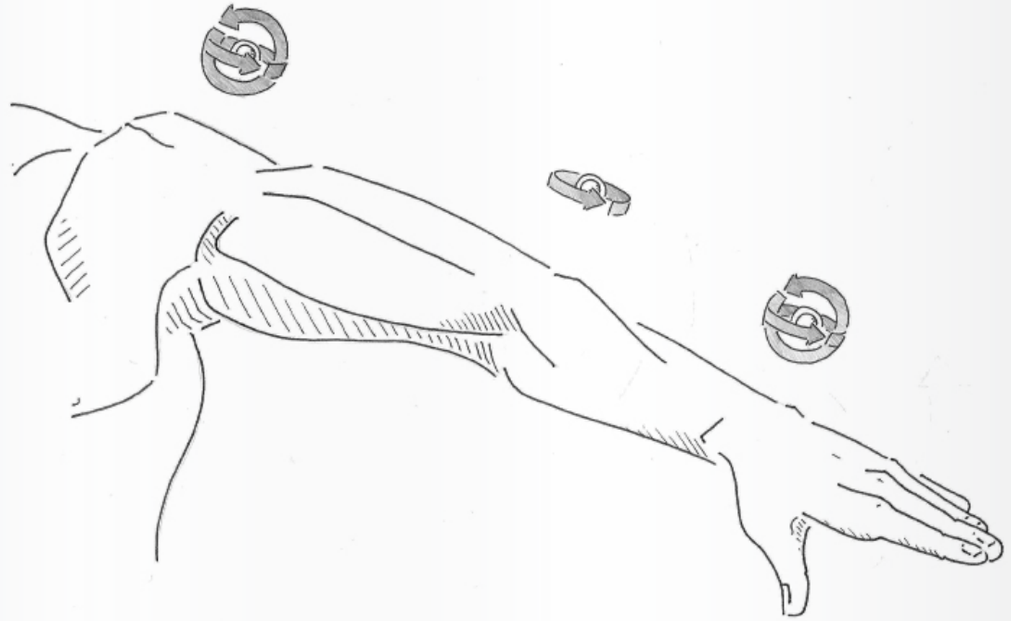
To be able to make the translation from the Product vision to the Product proposal, I once again looked at the physical qualities of the (normal functioning) human body. Even before the realisation of the product vision, I already played around with and focused on the different movements and positions the hand and arms could perform without facing difficulties or obstructions. When the Product vision was realised and ready to be translated into the Product proposal I wanted to get a good idea of how people interact and react to the new blender; the ergonomic interaction. For this reason, I involved and asked twelve persons aged 17 to 72 of different genders and a created physical variation to execute different movements with a glass and different simple shapes but without telling them beforehand what they were doing or could expect. The lively interaction that followed was really interesting to see and to observe.

This discipline is also important when making decisions in other disciplines, especially decisions that are directly related to the physical qualities of the human being. This discipline therefore only makes an initial description of general possible and interesting positions and movements here, and further on, more specific ergonomic details related to the blender can be found.

The first actual physical contact with the product will probably be made with your hands. So I started my investigation here by looking at the possible movements and positions a hand can make with respect to your body, by trying out myself, observing others and recalling the information learned during a first year of Biomedical Technology studies.

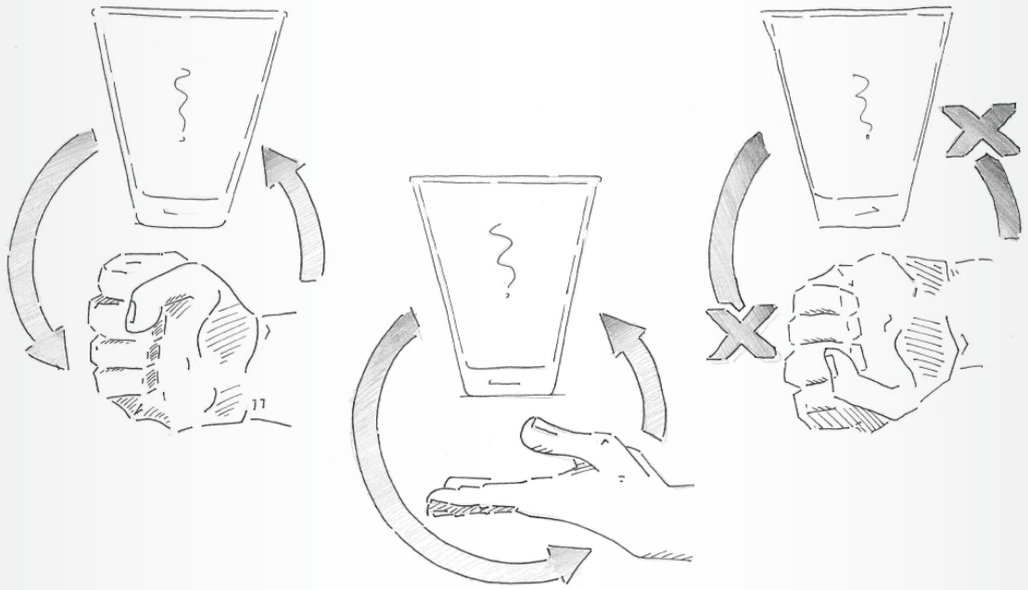


As can been seen above and on the right top side, there are a many movements and possible positions you can keep your hand in.
The main positions of your hand are made possible by three joints; the wrist, the elbow and the shoulder which individually can position the hand, but most of the time a position or movement will be managed by combining the ability of more joints. This makes it interesting to not just focus on the hand or wrist.
The muscles and the tendons take care of the movement of these joints and are therefore responsible for the movement of your hand. These same muscles en tendons also restrict some movements because of the position of the attachments and the direction into which these muscles will contract. These restrictions will also have consequences on the use of the blender which makes this discipline an important and interesting

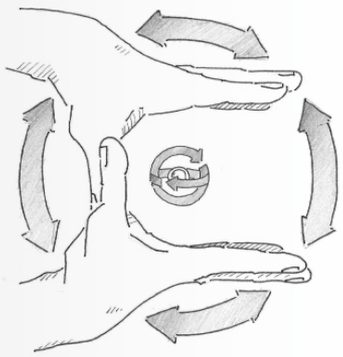


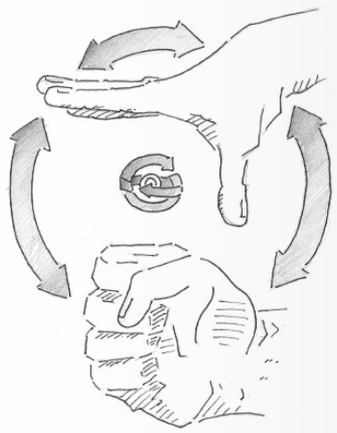
For one of the most ergonomically interesting properties of the Product vision, you have to be able to turn the blender upside down to blend the Fruit juices and Smoothie. To make this turning movement with the blender, you first have to pick up the blender with two hands. You will probably position one hand on or more or less underneath the glass and your other hand will be used to hold the blender. The position of these two hands with respect to each other are important because this can cause restrictions on the movement that is to be executed.
Many people were able to turn the glass and the blender in many desirable directions quite well when the hand that is positioned on the blender lies horizontally or vertically with the thumb underneath (or any position in between). It becomes more complex for many if they are holding the blender with the hand vertically and the thumb pointing upright. This is an important factor to keep in mind when f.e. designing the final blender. When trying out different possible shapes and sizes it was a normal position for many people to hold the hand when grasping the blender. They faced restrictions when turning the blender completely upside down and are only able to make the full 180 degree turn by turning the glass away from them (around the x-axis in the y-z plane), which makes the movement feel tedious and less controllable for most of the people.

The people experience the same restrictions when turning the blender and the glass upside-down if the hand that is positioned on the glass lies vertical with the thumb pointing downwards. They now make the same turn, around the x-axis but now the other way around. A remark has to be made that for many people this is already a strange position to hold their hand in when grasping the glass.



The best position of the hands, with the least restrictions on the movements, is to roughly hold both hands horizontally or vertically with the thumps pointing at each other or by making a combination of positions between these two hand 'extremes'. It is really interesting to see that when both shapes of the blender and the glass have similar characteristics, many people already try to mirror their hands when grasping them. By trying to focus more on these main positions and by trying to exclude the others I will try to ban the reaction of people who try to reposition their hands while blending and when they experience that they cannot immediately make the full 180 degree turn nicely.
The turning of the blender when holding it in this best way will then mainly happen around the z-axis (in the y-x plane) which also gives most people a calm and controllable feeling. This feeling allows and stimulates most people to try out and experience new positions in a relaxing and playful way.



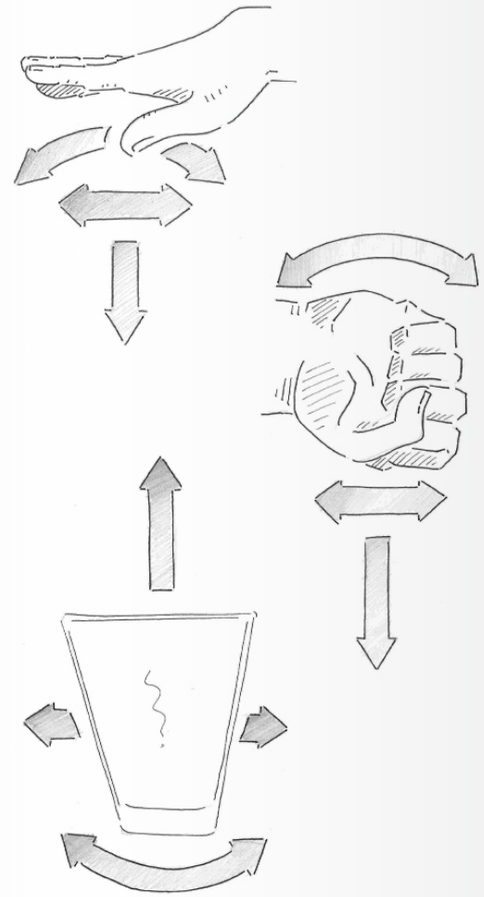


From this point on I did not only focus on the turning movement just described, but because this is the most general and interesting direction coming forwards from the observations I will for now focus on the interesting points that can be stated about this movement.

By focusing on this last turning movement (mainly around the z-axis and in the y-x plane) and by strictly looking at the hand, different interesting hand movements can be observed.
When your hand lies in a horizontal position, three main movements can be observed when holding the blender: a movement in horizontal and vertical direction and a turning movement around an imaginable turning point underneath the hand.

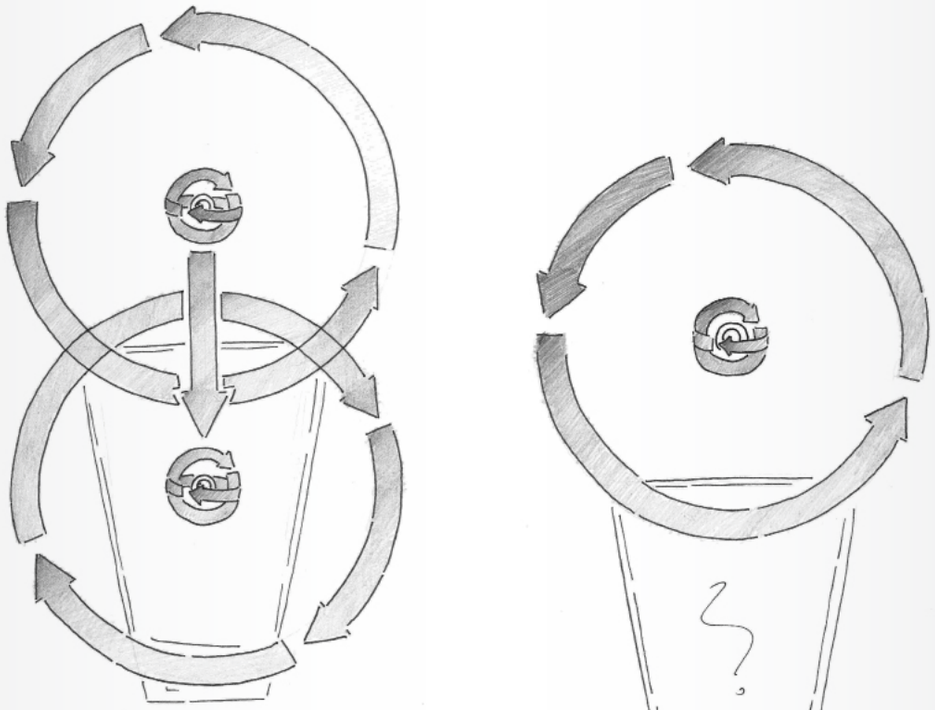
The same can be done for a hand that lies in vertical position with the thumb underneath on the blender. Here also three main movements can be observed, when holding the blender: a movement in horizontal and vertical direction and a tilting movement around an imaginable turning axis in the hand at the same level of the wrist (caused by the turning of radius and ulna).

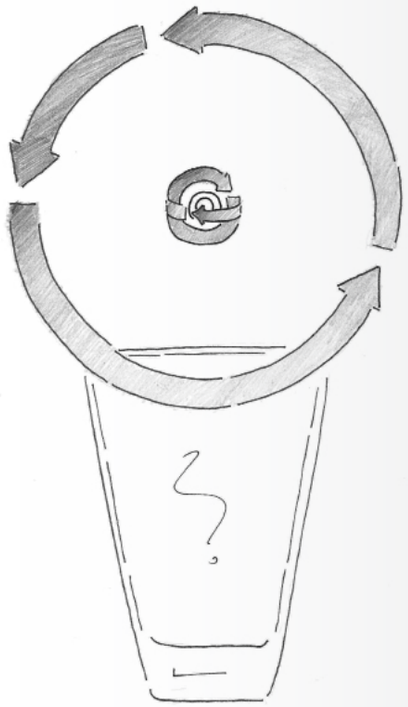
This is also done for the hand that is holding the glass. Here also three main movements can be observed when holding the blender: a movement in horizontal and vertical direction and a turning movement around the gravity point of the glass.



The horizontal and vertical movement just mentioned is executed most of the time in a rough, less controlled way because for these movements people especially use a combination of joints (the wrist, elbow and the shoulder). If you ask people to move in the same direction but in a more controlled way you only see the movement of the elbow or, for even better control, only the wrist. A remark can be made that the better controlled the movements are executed, the more direct force is put on the blender or glass instead as seen as one whole.
The different turning movement also just mentioned is most often directly executed with the wrist and also here the blender and glass experience more of the direct force than when the turning is executed with a combination of joints.

This direct force is also an interesting factor to focus on because it can cause a problem when the points of gravity of both the blender and the glass lie apart from each other. These points of gravity will now not be experienced as one combination, so both hands may want to turn separately from each other which can easily cause a tilt effect between the blender and the glass. So a recommendation for the future design should be to try to combine both points of gravity or to get them as close as possible which can be brought about by the shape of the blender. But this also automatically occurs when the blender is somewhat heavier than the glass with the ingredients of the Fruit juice or Smoothie inside. When combining both the blender and the glass in this case, people experience the point of gravity of the blender more as a main turning point when they already experience the weight of the blender when putting the blender on the glass.





This last point of attention is also portrayed and experienced in the description technique.
So from this point on it will be more interesting to describe further ergonomically interesting involvement by going into more specific ergonomically detailing that is directly related to further shaping of the final blender and therefore more ergonomical descriptions can be found in the next disciplines.

Technique
Introduction

By determining the Product vision, the final VPH and going through the other disciplines, many wishes and demands came forward that can be related to the discipline of Technique.
From this summed up list, three important technical directions came forward that specifically caught my attention; the motor, the connection between the glass and the blender and the important electronics and batteries. It was my task to find out what is possible and to come up with interesting solutions, for this moment or for the near or further far future.
Because I am working on a new not yet existing product, I was dependent on looking for and combining knowledge and information from other closely related products (f.e. hand-blenders) as well as for products that in at first sight are not related (f.e. breast pumps). But most of all I had to try and find out new interesting solutions by executing discovering different kind of possibilities myself.

The motor

The wishes & and demands that were listed up, provided the requirements that directed me to find the most interesting motor to fit the new blender.
This search created the possibility to have a small glance at the development of the electro motor within different product directions, Philips is working on right now. The enormous complexity that is involved with this development of a seemingly simple electro motor particularly moved struck me. Next to the product requirements there are a lot of other factors to take into account, most of them impalpable, but also these had a big impact on the specifications of a motor.
The knowledge gained from the contacts with Klagenfurt and Drachten created an interesting image of what the possibilities are, and what the electro motor is capable of and may looks like in the (near) future. Especially the development focussing on the shaver motor and the knowledge that is gained and already available here could be a really interesting direction to use and focus the search and development of the future blender motor (for this concept) on.
Because of experiencing the enormous complexity and being strongly advised by engineers working on the Advanced Technology Centre in Klagenfurt and Drachten, I focused the search for an interesting motor on for looking and trying out motors already available and fitting the lined up requirements best.

The search for the motor that fits the concept best at this moment, started with the requirement and points of interest that followed from the important and most interesting wishes and demands following from the Product vision, the VPH and the other disciplines. These requirements eventually direct to minimal qualities the new blender motor has to live up to.

Most of the interesting requirements:
The motor:
- has to be powerful (ratio: speed, torque, time – size, weigh),
- 200 g of only fruit has to be processed within 30 seconds,
- Crushes ice
- has to be able to be powered by batteries,
- has to be energy efficient,
- must have the possibility to pulsate,
- has to be shock proof,
- has to be as short (small) as possible,
- has to be reliable,
- has to be as lightweight as possible,
- has to be quiet,
- its price has to be considered,
- may not get to warm,
- may not vibrate,
- has to be able to be used often in short intervals of time,

Interesting motor brands;
-Maxon motor, - Mabuchi motor, -Johnson electric, -Panasonic.

Points of interest:
The blades;
- shape,
- dimensions,
- material,
- position with respect to: the blender, the glass and the ingredients,
- blunt- or sharpness (fruit is most often smashed instead of cut to pieces),
- dented.

The ingredients;
- properties,
- the composition,
- the amount,
- hot / cold.

Available glasses:
- width (diameter),
- contents,
- depth,
- wall thickness,
- shape.

Extra specific attention for;
The peak power (or temporary maximum output) is an important characteristic to keep in mind when looking for an interesting motor. The peak power is a factor that says something about the force impulse an electro motor can generate, which is important when you are blending solid / heavy ingredients. Every time the connected blade hits an ingredient of the Fruit juice or Smoothie you do not want the motor to slow down too much, with the risk it is eventually forced to stop turning. This is also a reason to focus on and look for (brushed/brushless) DC motors which can recover more easily from the consequences of the collisions when compared to other motors.
Brushless DC motors offer several advantages over brushed DC motors, including higher efficiency and reliability, reduced noise, longer lifetime (no brush erosion), precise speed control, elimination of ionizing sparks from the commutator, and the reduction of electromagnetic interference (EMI). The maximum power that can be applied to a brushless DC motor is exceptionally high, limited almost exclusively by heat, which can damage the magnets. Although all these advantages are really interesting, there are some disadvantages that have to be considered seriously. The brushless DC motor is higher in costs, which arises from two factors; the brushless DC requires a complex electronic speed controller and many practical uses have not yet been well developed in the commercial sector (f.e. the motors often hand-wound while brushed motors are armature coils which can be inexpensively machine-wound). Engineers add that the differences (dis/-advantages) between the brushless and brushed electromotor are becoming smaller in the area I am looking at a motor and some are even negligible. (For example, under high mechanical loads the brushless motor and high-quality brushed motors are comparable in efficiency and the brushes do not significantly wear out that fast with the applied speeds). So the search for a motor should be focuses on both brushless and brushed DC motors.

Regarding other kinds of electro motors, the Coreless or Ironless DC motor with rapid acceleration for example, has to be cooled by air and the stepper DC with high holding torque is really bad at slow speeds, and should for now be omitted in the search of an interesting motor.

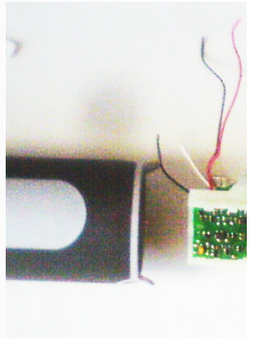
In the search of an interesting motor for the new blender, I started with a reconnaissance to see what I could expect from available motors when blending Fruit juices and Smoothies. To execute a most sincere reconnoitring I set up a test as close to the final situation as possible, in which I compare each motor to the requirements that were lined up as true as possible. For this test I particularly used motors from related (cordless when possible) products to have a better chance to find an interesting motor or direction as a result. Thanks to this product similarity and often a similarity in motor (specifications), I was able to make an

interesting division in the selection of motors.

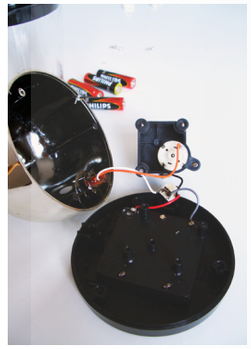
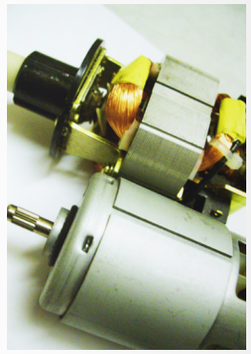
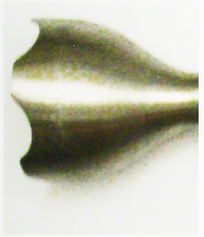
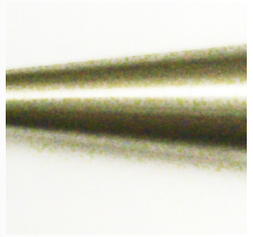
I tested the performances of the ten different motors (products) while making Smoothy of a one apple, five strawberries and one teaspoon of honey. If the motor was able to complete this task, I tried to process five ice cubes.
Because I was not always able or allowed to remove the motor from all the products, I first tried out and tested each product in detail and made a second selection of the most interesting products (motors) which I then connected to the test set-up to thereby realise a more true and realistic test result.

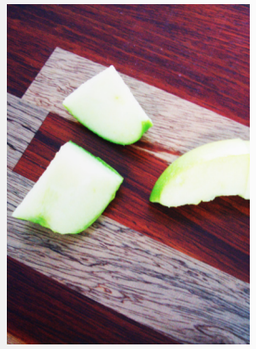



The test rack provided a good representation of the use of the final motor. I used the blender bar of the Philips HR1364 each time, which I sealed to a glass with the ingredients of the Smoothie already inside to keep the circumstances as similar as possible. On the other side of the HR1364 blender bar I connected the second selection of motors one by one to execute the test. The motors were the RoadPro, the Bosch MSM6a70, the Braun Multiquick, the Philips HR1378 and the HR 1364 – motor. A remark has to been made that by using the blender bar of the HR1364 this blender (motor) had a small advantage over the other motors.




The results following from these two tests were surprising, interesting and in general very hopeful.
With the information collected from the first and second test, I managed to form an image of the relation

between the properties of the different motors and the quality of the performance they each delivered. I also got the answer to which of the motors tested complied with the requirements and which one came out best.

An interesting two way division could be made when looking at the speed, torque and power ratio of the different tested motors. This division is created by the two directions of making Fruit juices & Smoothies and is related to the extremes of the properties (solidity / heaviness) of the ingredients. You can choose to have a low speed and high torque to more or less crush the ingredients or you can choose to have a higher speed (and a lower torque) to strike the ingredients to bits. Sometimes these extremes are counterbalanced by adding a single or multiple speed button(s) to be more in control of the preparation.
Both ratio directions may bring in extra points of attention for the new blender. Although it did not occur during the tests, it may happen that, when choosing for the high speed, an ingredient gets launched by the blades and hits the inside of the glass at such a speed it may crack. Or when going for the high torque to crush the ingredients, it can also cause a dangerous situation when a blockage arises and develops a pressure against the inside of the glass.
Therefore I will try to find a motor with just enough power so it is possible to prepare excellent Fruit juices and Smoothies and to choose a motor that performs best in (a) torque – speed ratio(s) that are not that extreme.

$$\text{Power} = \text{torque} \times 2\pi \times \text{rotational speed}$$

$$\text{Power(kW)} = \frac{\text{torque (N·m)} \times 2\pi \times \text{Rational speed (rpm)}}{60000}$$

The most striking and positively surprising result came forward when trying out the gadget blender. I did not expected much of it, with its low power of 3.59Watt 6Volt motor (that can deliver about 14000rpm and was lowered to 1750rpm by its 1:8 gearbox and the torque from 2 to 19) but it did its job unexpectedly well.
When the milk was not added yet, the blades powered with a relative 'low' speed - 'high' torque ratio had a good grip on the fruit and did its work (a [little] bit slow yet) perfectly. But when the milk is added, first the results dramatically decrease: the blades were not able to create enough movement/disturbance in the milk to draw the fruit properly and get grip on it, and when the blades did hit the fruit they did not have enough impact to cause much damage.

The results gained from the other motors, especially from the first test, were not really unexpected. Most of the time, the increase of power resulted in a better performance, as could be expected. However, when trying out products where more attention was focused on the performing components, like the blades, you were definitely able to experience a positive contribution from it. The results gained from the second test were more interesting for the selection of interesting motors. Here the different motors could directly be outweighed to each other, and could be compared which one fits best in the line of requirements.

I experienced some difficulty when connecting the different motors within the test rack, but I was easily able to point out one motor, the motor of the Philips hand blender HR1378, as most interesting within this representation. This motor fitted best within almost all of the requirements, but the requirements of this motor that were particularly the best were: able to be powered by batteries, quiet, shockproof, reliable, did not get too warm and did not vibrate and is short (small). And this motor also had none of the negative / tedious points that attracted attention when testing the motor's, like smell, irritating noises, bad reaction when turning the motor on or off or changing the speed, rattling sounds when shaking the motor, a lot of moving air.
The direct connection between the motor and the blades and the absence of a gearbox already helped al lot in the reduction of the noise, but when using the HR1378 the noise reduced even more. And although the HR1378 was one of the shortest motors tested, and the use of a gearbox could help to find a smaller motor and possibly reduce the overall length, I was motivated to use the specs of this motor to search for a similar model that may be a little inferior in power, but is smaller and lighter and still pays up the same requirements and is as good as the motor of the HR1378.

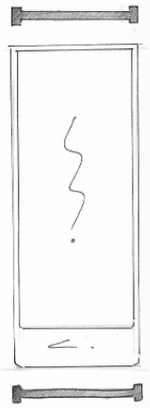
I was able to find an interesting model of the same type but 10mm shorter. I was able to borrow and test this motor and although the power was a little bit less, 160W compared to the 200W HR1378 motor, I was still really satisfied with the performance when for instance preparing the Smoothy. After checking the motor also with the requirements lined up, I chose this motor as coming forward most interesting.
Advise has to be given that a more detailed test with more specific focus on the points of interest and representations of different possible circumstances is strongly advised.

Sealing

One of the important technical directions that came forward and to which I specifically paid my attention, was the connection between the glass and the blender. This part of the blender was really important to realise the Product proposal following from the Product vision and to let the new blender stand up or make it fall over. Especially for this part I was forced to look at products, which at first sight do not have any relationship with the new blender, to come up with and gain information to find new interesting possible solutions.
I for example looked at the Philips breast pump and many sealing objects like different lids of jugs and pots.
But most of all I had to execute different kinds of possible solutions myself, to find out if the ideas really work, to come up with and try out new ideas and improvements and especially to gain experience.

I started the search for possible solutions with the investigation of the glass. To come up with a general image of the glass I searched for properties and characteristics of glasses by looking on the internet at progressive glass making company's like Bormiolli, Libberty and Picardie (seventy glasses) but also by going to the Ikea (forty-three glasses) and looking in the cabinets of twenty-two households (264 glasses, minus one).
Most of the glasses are aimed at specific drinks, like wine, whiskey, beer, water, etc, so I also tried to find out what the properties and characteristics of the Fruit juice & Smoothie glass look like. I did this also by searching on the internet, looking at the progressive glass making companies and by asking the people who let me have a look in their cabinet, to point out which glasses the would use to serve and drink Fruit juice or a Smoothie from. These searches provided an interesting image, not only for technical use but maybe even more as aesthetic input.

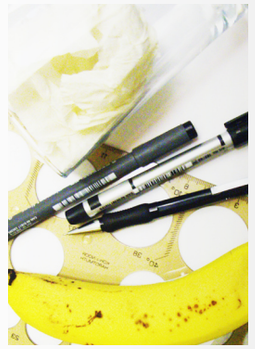
General universal glass properties and characteristics: Made from glass, Can often be divided in a drinking, holding, and foot section, Top and bottom are straight, Top and bottom are round (may vary in diameter),
Top edge has a small rounding, Bottom most of the time has a massive foot.

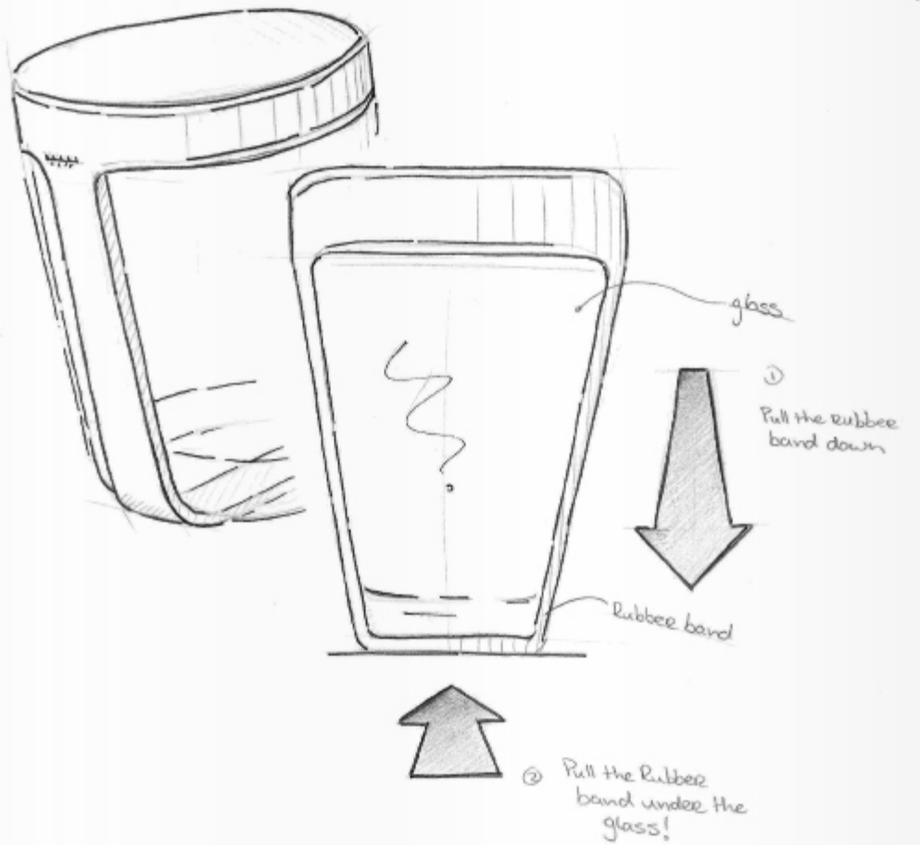


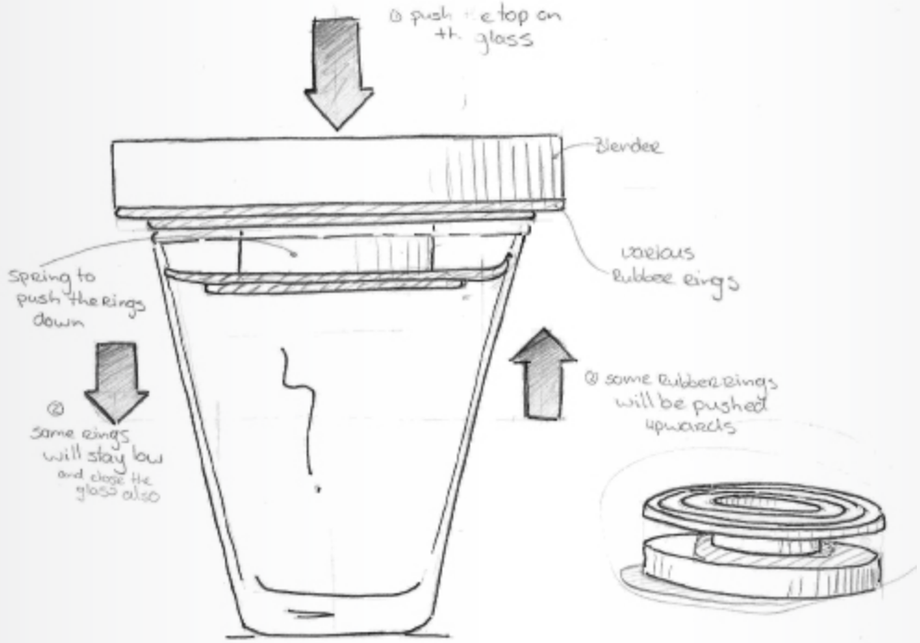
General glass
Average of the general;
diameter: 76.48 mm
contents: 10.71oz (or 30cl)
wall thickness 1.1 mm
- most often straight down
- angled inwards and straight
- angled outwards curved and with a foot (wine glass shape)

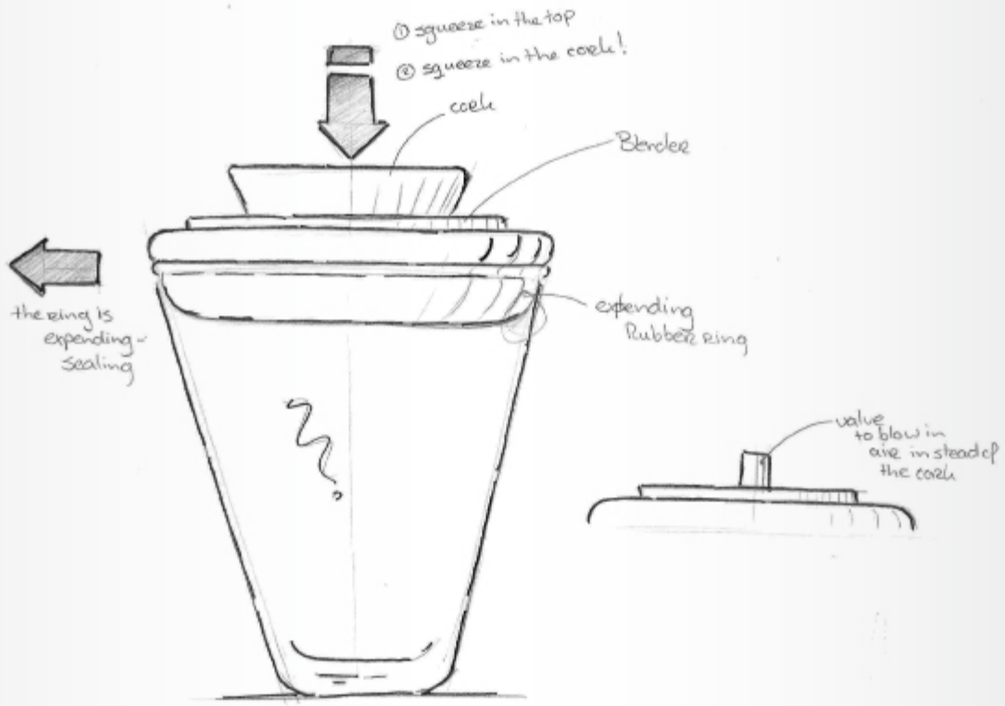
The Fruit juice & Smoothie
Average of the Fruit juice & Smoothie glass;
diameter: 82.2 mm
contents: 15.8 oz (44.2cl)
general wall thickness 1.9 mm
- angled inwards and straight

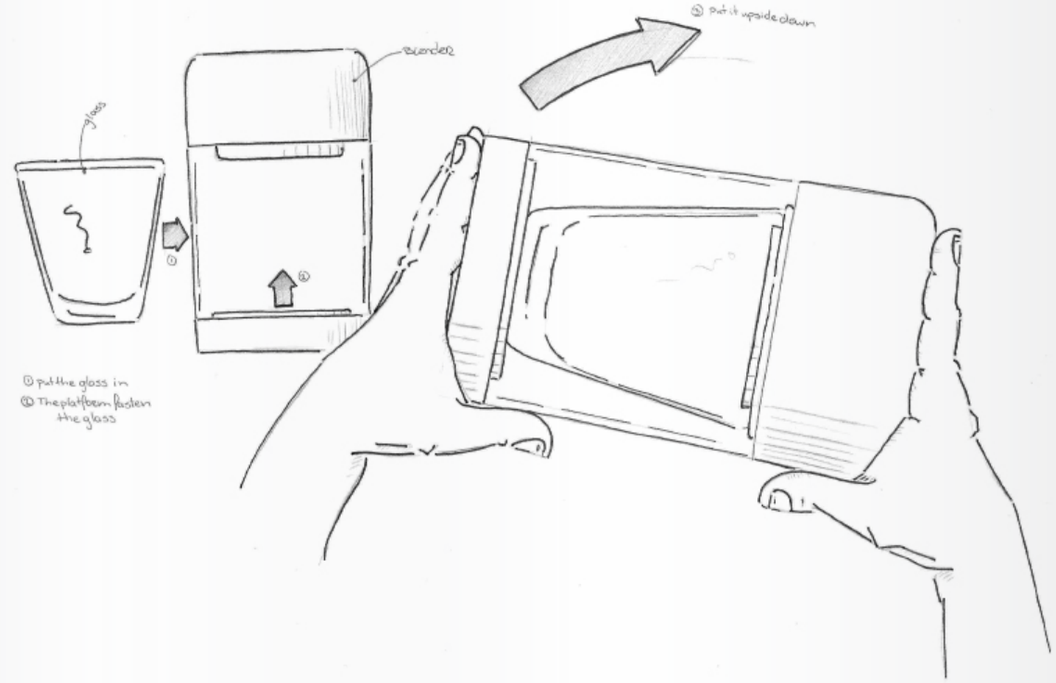
When the Product vision was realised and going through the other steps of the report, I already started to think of solutions for this technical challenge. With the Product vision, the VPH and the properties and characteristics of the general glass (and Fruit juice & Smoothie glasses) as the main foundation and the acquired information from other products, I had a relatively rough first brainstorm / sketch session to come up with and fix 'as many as possible' first idea's of possible solutions. This session ran alongside other work related to the discipline of technique and was stretched over a couple of days. A lot of first inspiration flowed through my pen onto the paper and resulted in an about 88 rough first ideas. Some ideas were very futuristic, others very simple or complicated and some could probably go straight into the wastebasket but these also gave new inspiration for a second more structural brainstorm / sketch session. For this session, I installed myself at the biggest table in the centre of the studio and surrounded myself with all the materials and tools I could get my hands on, f.e. rubber bands, paper, paperclips, scissors, sticky tape, different glasses, a jar of water, sheets of foam and rubber, clay, etcetera.





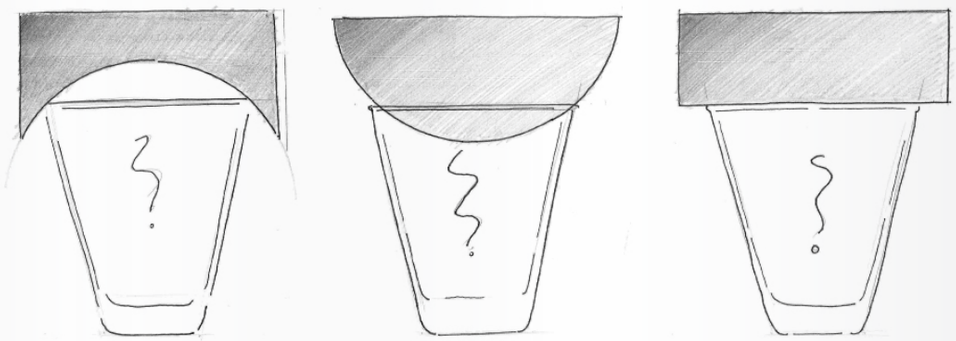


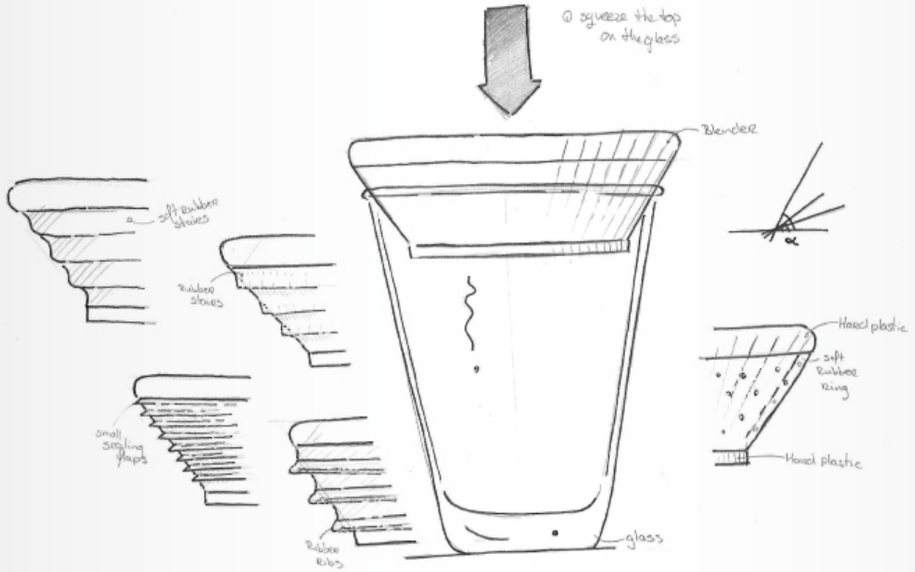


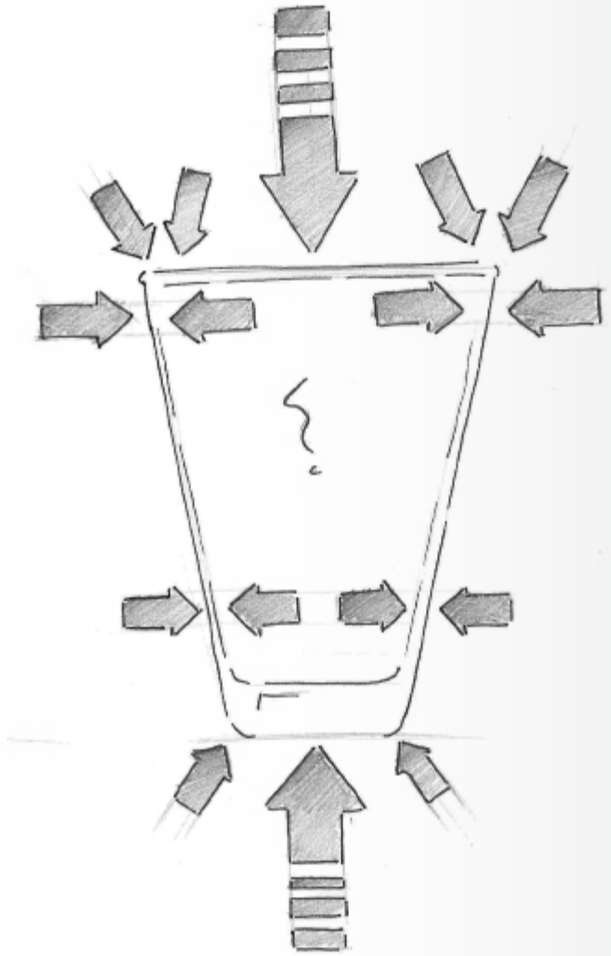


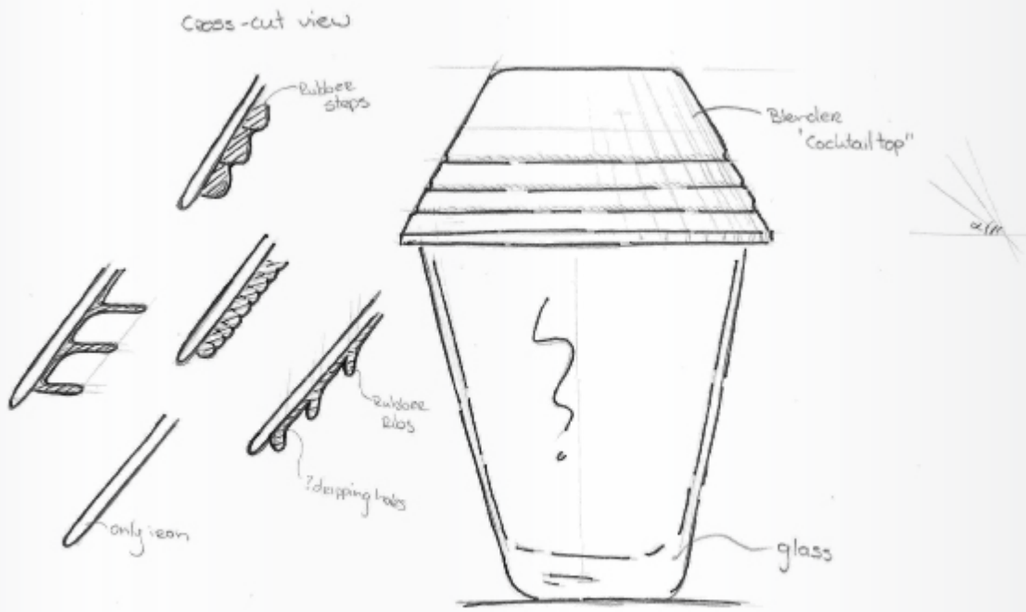
After these two brainstorm/sketch sessions, I sat together with one of the designers to go trough all the ideas and bundled together an evaluation summary with the most interesting and strongest ideas. Especially sketches from this last resourceful and inventive session were picked out and combined with some strong first inputs.
After handing over this evaluation summary I talked over the ideas with a couple of the designers and a designer from VTA individually but I also managed to gather a small group of four designers which ended up in a lively conversation and resulted in a nice overview and summary of the ideas and brought in some new idea directions.

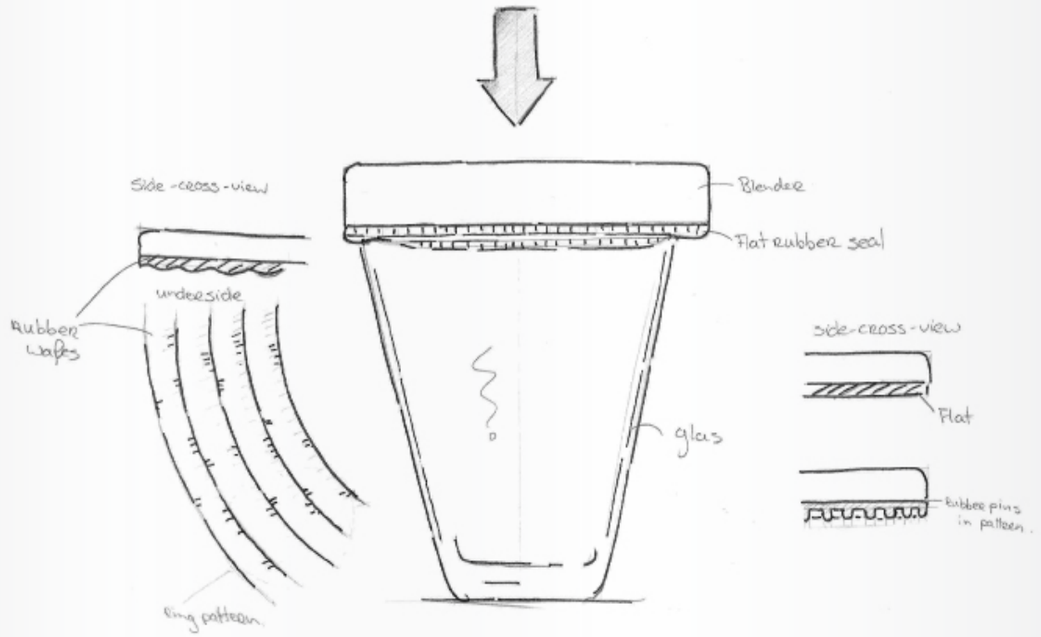
Some of the ideas were specifically focused on the sealing or the connection between the glass and the blender but it would be more interesting to combine these into one solution that stands in one line with the act of connecting the blender to the glass, turning it, *blending*, turning it back and separating the blender and the glass again in one flowing movement. If you want to realise the sealing and connection between the blender and the glass without an extra act, this first and last most likely vertical movement, which will passing on in a vertical force when touching the edge of the glass, should be and interesting operation to use. This one flowing focus was nicely brought forward in three main simple directions that made sense and probably had a good chance of success, according to my experience so far and the feedback I received.



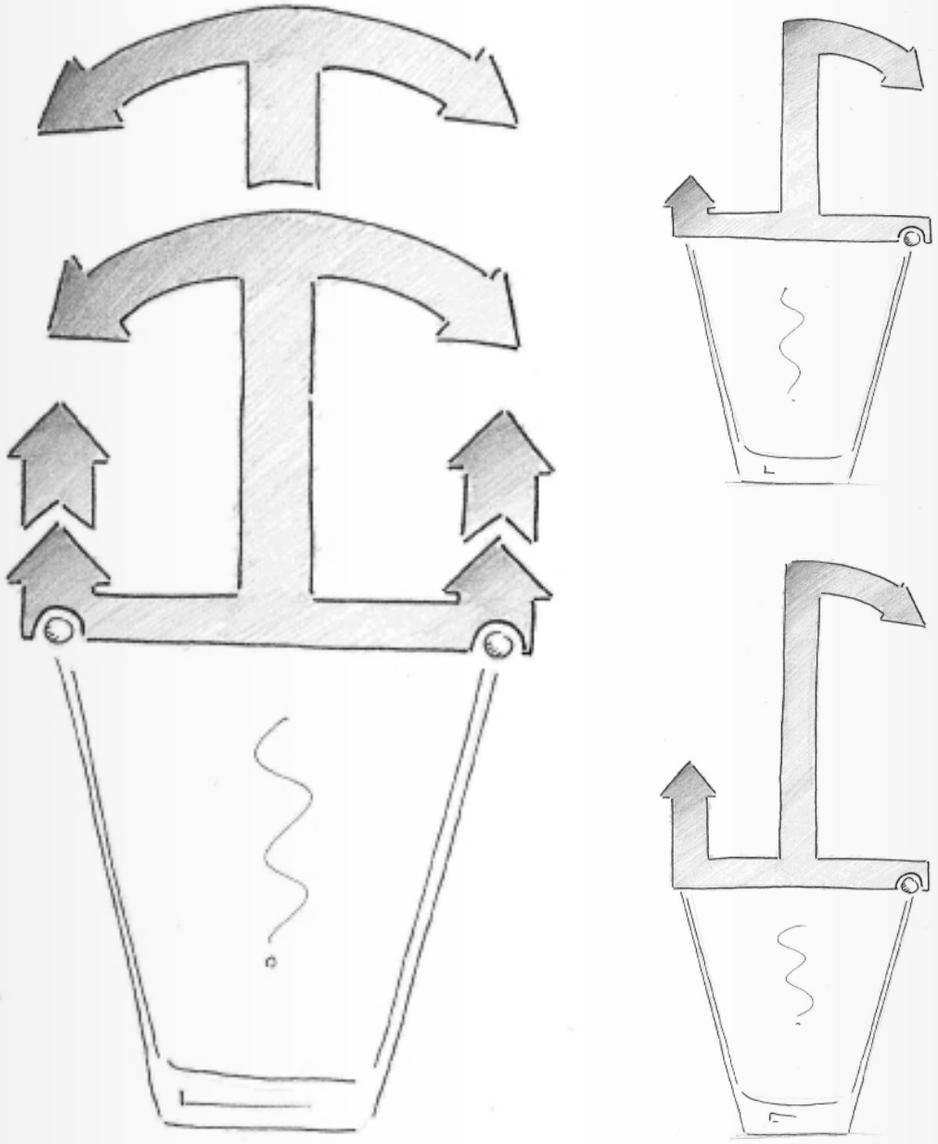

① squeeze the top on the glass
Blender
soft rubber strips
rubber strips
small sealing flaps
rubber ribs
glass
Hard plastic
soft rubber ring
Hard plastic




Cross-cut view
Rubber steps
Blender "cocktail top"
rubber ribs
?dripping holes
only seam
glass

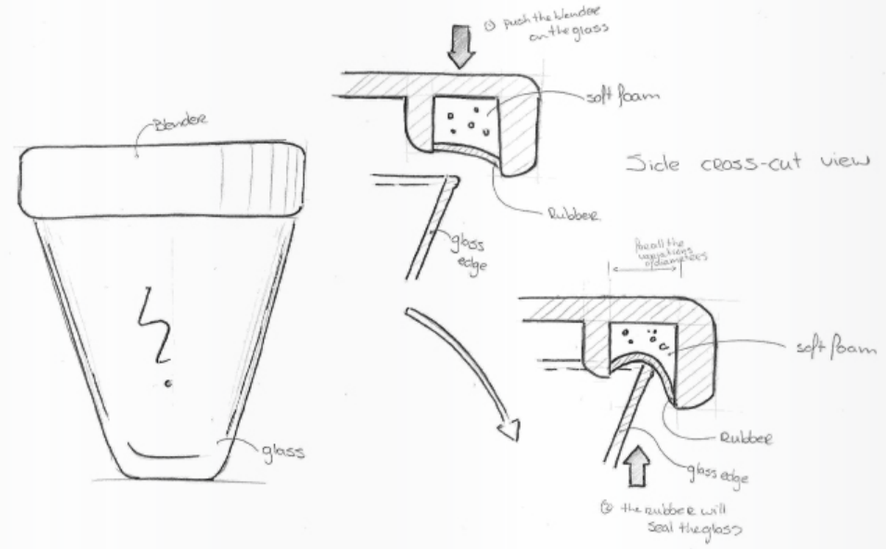

Side-cross-view
Blender
Flat rubber seal
underside
Rubber strips
glass
ring pattern
side-cross-view
Flat
Rubber pins in pattern

I translated these three simple directions into main shapes that were easily adjustable by combining them with foam and other materials, I was allowed to let make hard models of. To have a nice and a more realistic representation of the final use, I made it possible to place these hard models around the blender bar of the HR1364 and HR1378 hand blender. By first pushing one of the models around the blender bar I was able to experience and find out the effects of the different models and different adjustments when combining them to a glass filled with milk. I was able to fulfil different possible blending movements while watching how the different solutions were performing. After the first quick round of testing, I already was really satisfied with the performances, and I was convinced enough to test the solutions again but now with a fully functional blender connected to the blender bar. The effects of the operational blender were immediately noticeable and small points of remark now got bigger and could use some improvement. The points were not only aiming at the sealing and connection but it also provided information for the direction of the future design and aesthetics of the new blender. For example, the overall combination of the hand blender, a model and a glass with ingredients, was much too long and too heavy: the movements performed for making a Smoothy were big and clumsy instead of playful. These movements together with dealing with two separate points of gravity led to multiple problems facing the connection and sealing of the glass. Especially the bigger vertical movements between the glass and the connection, resulting especially from this long combination, were causing problems. (See also the discipline ergonomics).



The smaller movements triggerd by these bigger movements but also by a more focused coordinating reaction especially caused problems regarding the small horizontal movements. By shoving the glass horizontally regard to the models, it sometimes occurred that the sealing was not performing properly anymore and extra attention to create more stability in this direction was needed. This problem especially came forward when trying out the flat model where the horizontal movements faced little opposition. But it has to be mentioned that beside this remark, the simplest model was performing surprisingly well. It met the vertical movements really nicely which caused the turn-tilt movement problems at the other models. Especially when I attached a little thicker foam layer to this flat model, the wobbling effect was better intercepted and the sealing constantly maintained.

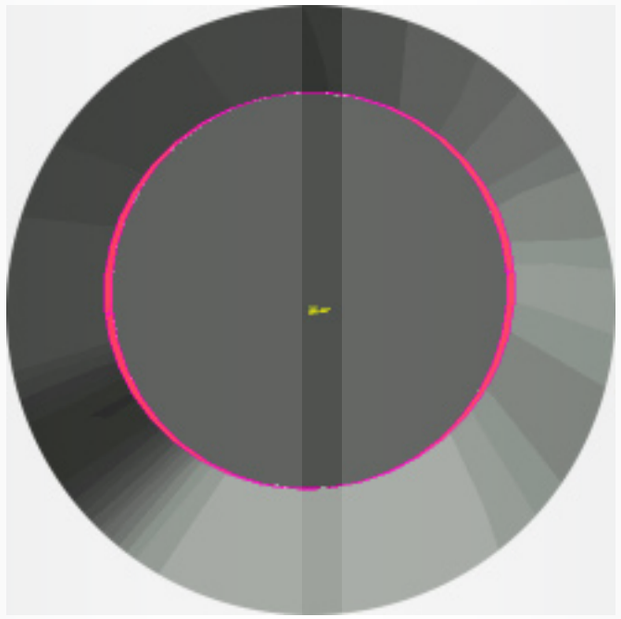
Another idea and model came forward from this last improving solution. Because the construction of this idea was a little more complicated to make, I was again allowed have a model made. I filled the U shape ring with foam and covered the top with the same flat foam ring as I was using for the flat model. With this model I was examining the horizontal and vertical movements and trying to achieve a better connection and sealing by using the edge of the glass as a sealing surface and to be able to push the glass more into the U ring to create more stability. This model caught the positive points of the flat model and this sealing and connection solution was an important direction to use and to come up with new ideas in the next brainstorm and sketch session.



Maybe it was because my expectations for the cocktail shaker (CS) connection were the highest, but the performance of this model really disappointed me. Some of the problems maybe could have been solved by changing the angle of the model or by using other material (like using metal – for a more realistic CS connection) but the most tedious experiences could not be solved by this. When the connection is slightly failing and ingredients escape from the glass, the first reaction is to stop blending and turn the blender back into its starting position, and here it gets really messy. Even when experiencing a small spillage of ingredients you are not able to get these back into the glass without making it worse and ending up in a lost situation. There is no clean way out, where if you are lucky only the blender and the glass end up in a mess, but you will definitely lose your inviting and desirable Fruit juice or Smoothie and probably your appetite.



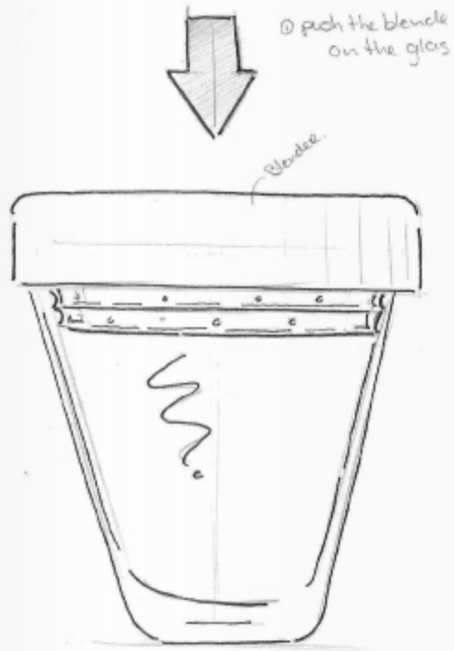

This happening turns out to be positively met by the ball model which can be seenas the opposite shape of the CS model. When the connection is slightly failing here and your reaction is turning it into its original position, the spillage will automatically flow nicely and more controlled and diverge down into the glass. Also when you are ready with creating the nicest Fruit juice or Smoothie, you are easily capable to guide the superfluous ingredients on the blender back into the glass.
The ball model also handles the turn-tilt movements between the model and the glass more smoothly which is caused by the vertical (pressing) forces. This movement causes less extra undesirable happenings like the tilting effect of the glass caused by the edge of the model and there will remain equal round shapes connecting surfaces between the glass and the blender. If you compare this connecting surface of the model with a more coned shaped model in the same situation, the connecting surface of the model becomes more ovally shaped. (The connection surface is then comparable with a slope cut through view of a cone model).

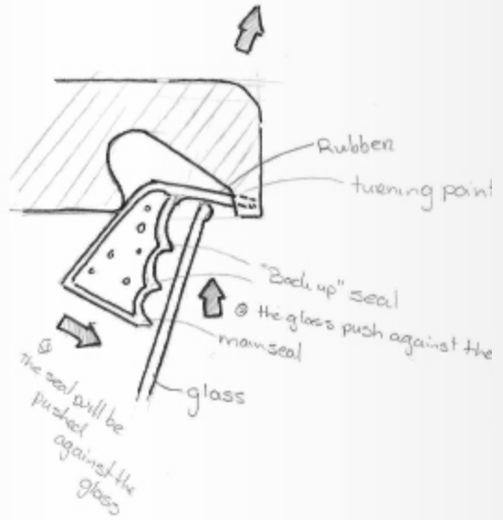


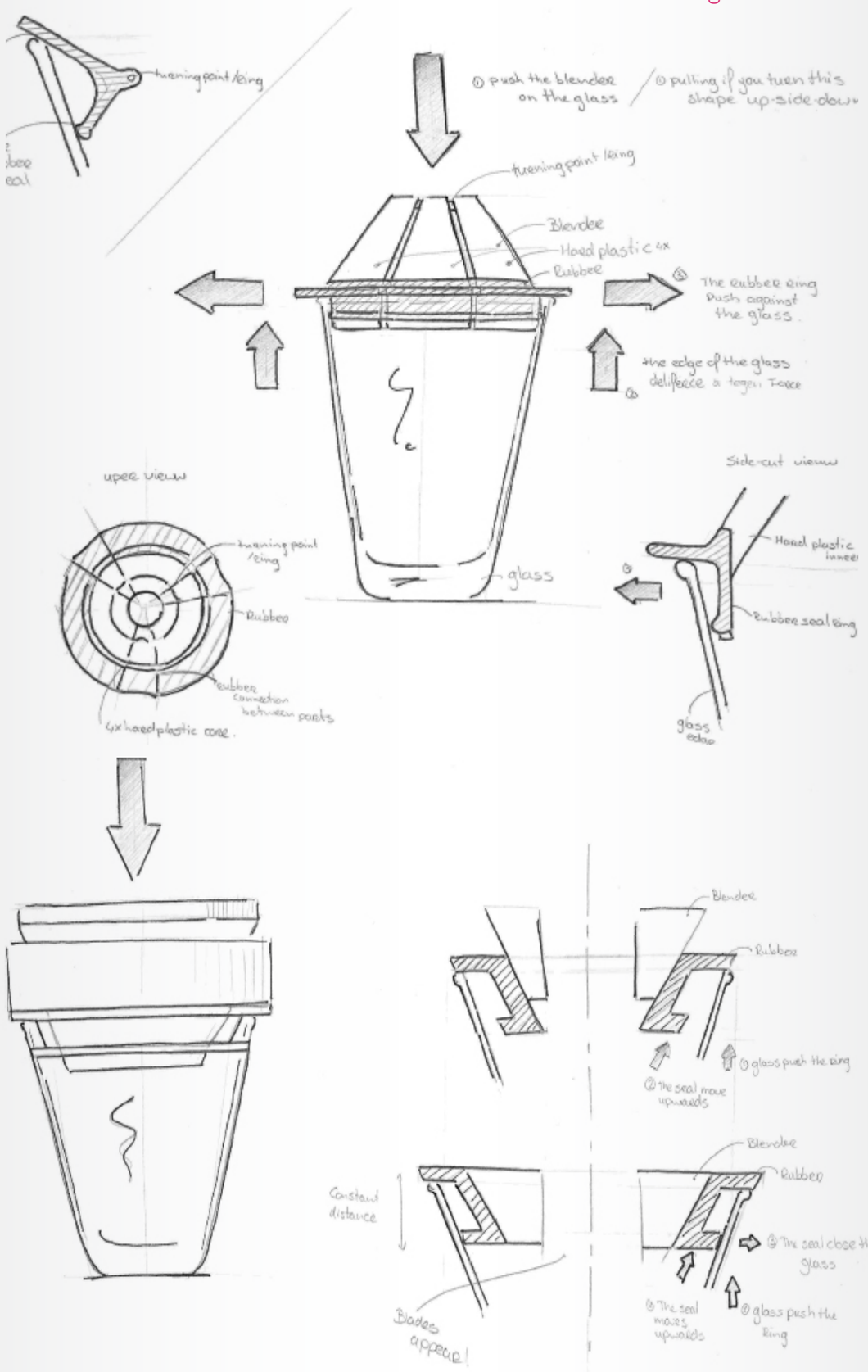
I already mentioned some advantages of this ball model over the other models, but when looking at the performance of the model itself, it really surprised me positively when testing this it! Without any adjustments, it already performed really well in both the sealing and connection area and next to these achievements an unexpected and very interesting added effect occurred which was very positive and promising.
When the added foam layer on the surface of the ball became even a little bit wet and combined with a little volume from the ball model that enters the glass, it already resulted in enough vacuum to make a really nice seal and connection. Even when a little bit of volume entered the glass it was already enough to lift the glass, but was also really easy to undo.

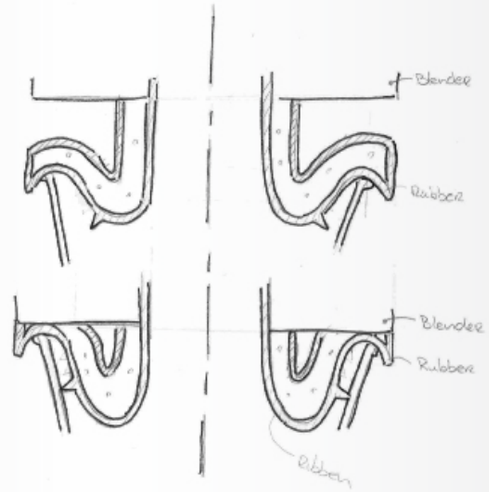
The good performance and this added effect motivated me to try out and study this model in various ways. I started with applying different surface structures and materials, collected from the VTA studio, to the model and studied the performance. But I also directly researched this added effect by looking at various products that work with vacuum, like the breast pump, and also by executing different directions to try to make use of this effect in different ways. For example, the performance of the sealing when shoving a glass horizontally with regard to the model improves when vacuum is applied to the glass. I came up with this result by taking a glass of water, put it upside down on a sheet of foam and created a little vacuum with the use of a syringe. I was better able to shove the glass with water around on the foam without notable leakage. However, in this test formation too much vacuum resulted in folds in the sheet of foam and a wet table.

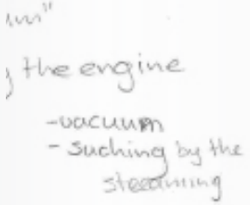
After a lot of research on all the models, sometimes with the help of a designer that in exchange received a really nice, fresh and self-made Fruit juice or Smoothy, I could not come up with anymore interesting improvements, solutions and new directions, or new delicious drinks to persuade the colleagues to help me with inspiring me with new directions. At this point I started cleaning up the mess and had to roll a more than good for him, Fruit juice and Smoothy satisfied designer to the table and made another evaluation summary of all the interesting findings I came up with that day. An interesting aspect is that this evaluation summary mainly consisted out of solutions that were inspired by or had the U and Ball model as main foundation.

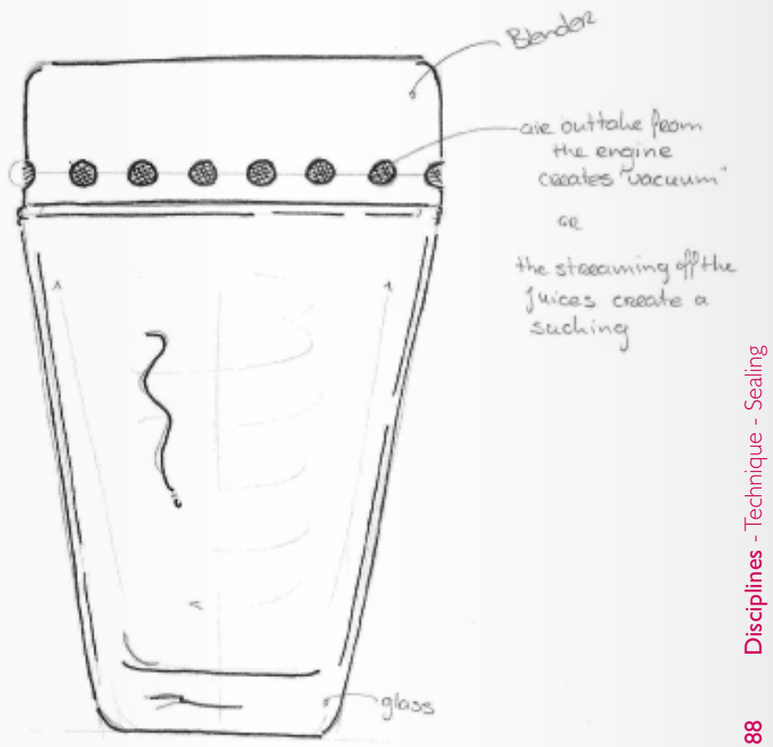






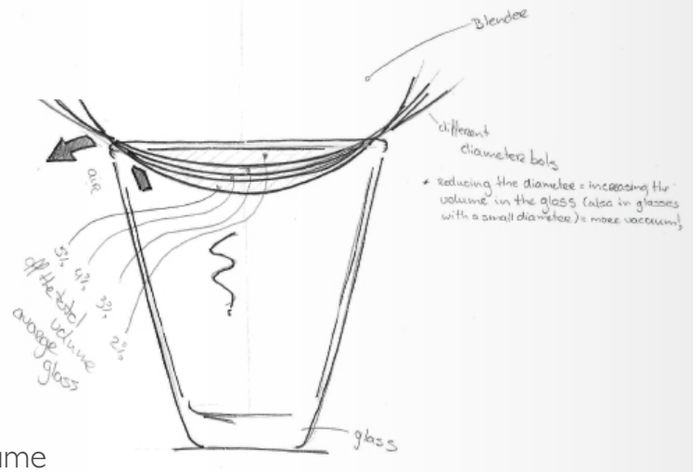




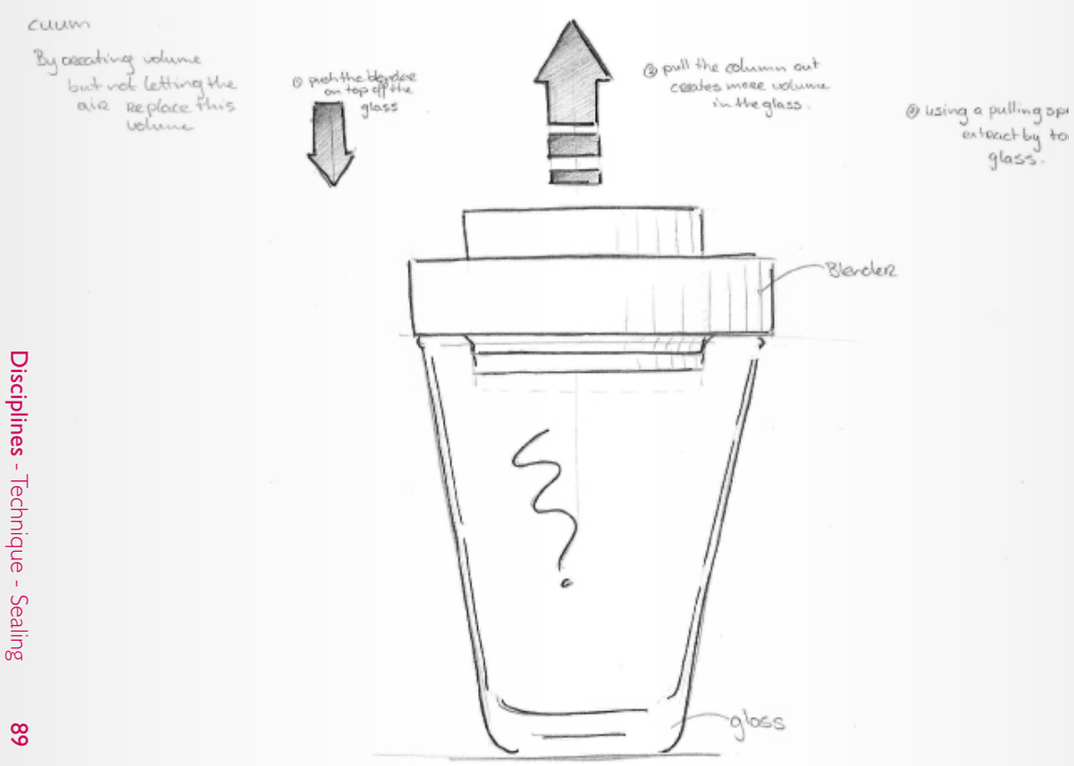


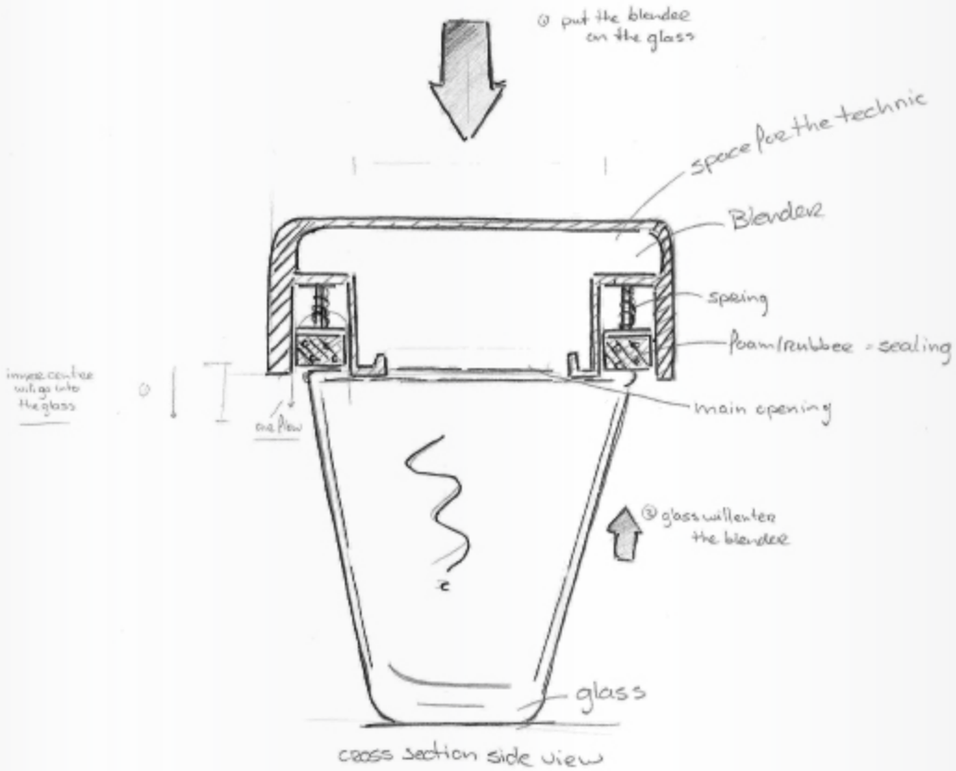
Vacuum by the engine

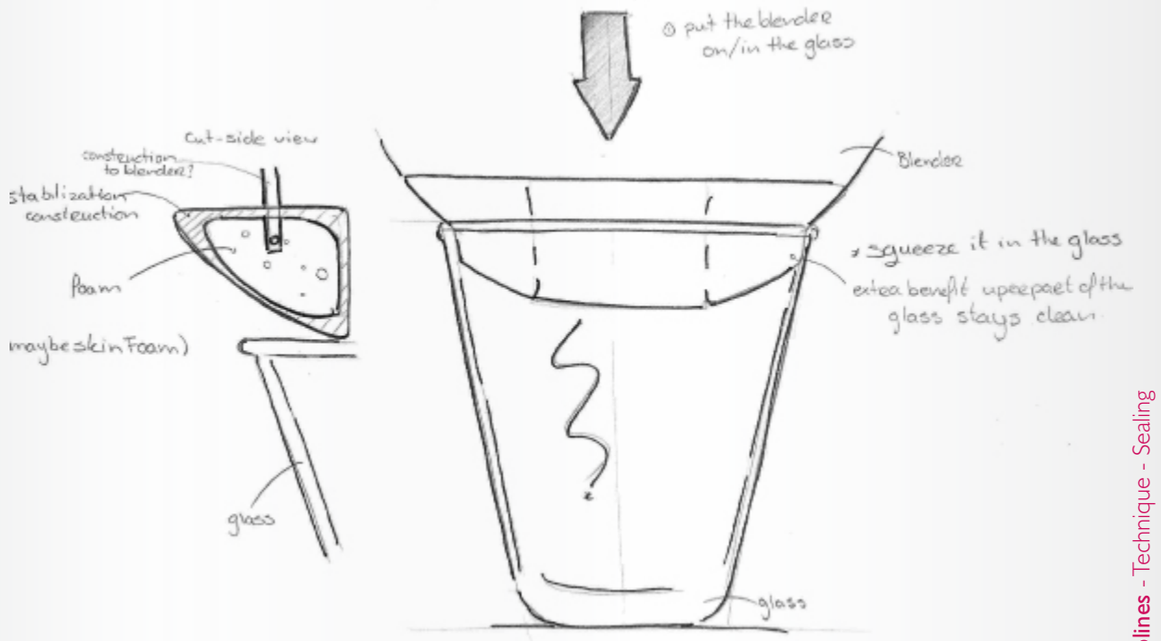
Vacuum by temp. change

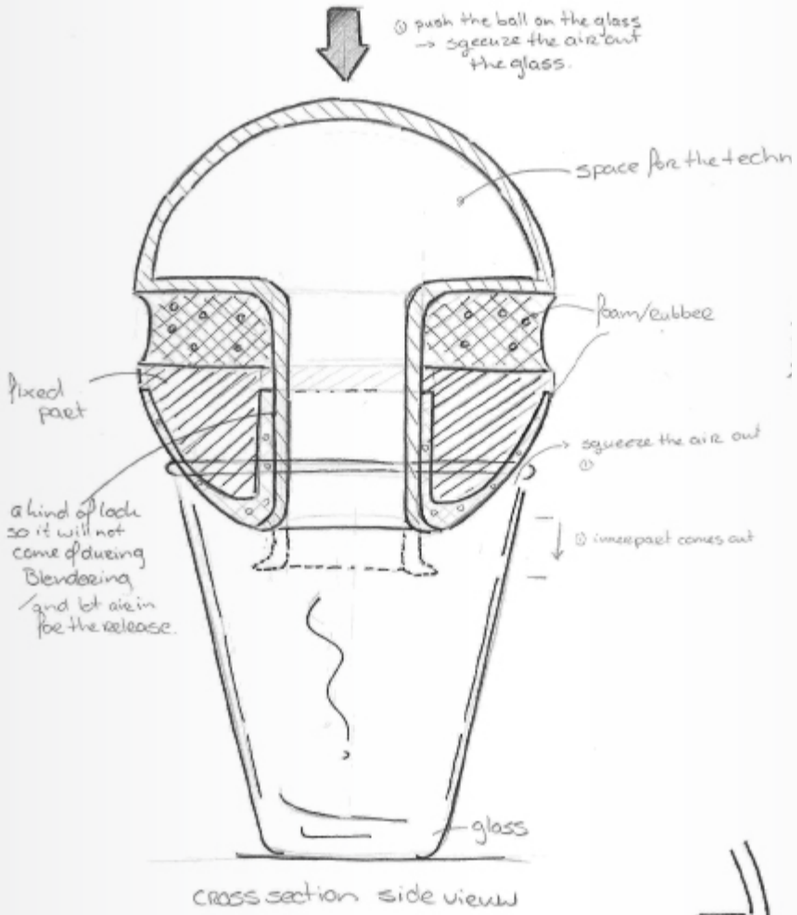


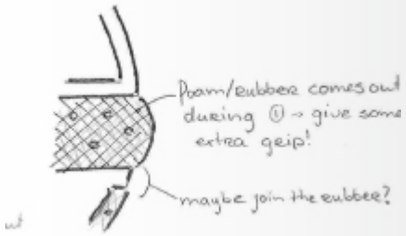
Vacuum by change in volume











To come up with a final decision, I involved among others product and VTA designers to discuss the solutions that were combined into this final evaluation summary. By involving the expertise and experience of these colleagues I was better able to base the final decision also on a first indication of other factors like durability, production technical factors, costs, cleaning, hygiene, etc. The different conversations were interesting and indicative and guided me to the final decision by one by one dropping less interesting ideas to reach the final most interesting direction.

This final direction mainly came forward from a first and very simple idea of a main form covered with rubber that has to be pressed against and partly into the glass. This first idea initially led to the ball model that already performed really well without any improvements made and already stood strongly for the vision sense and simplicity which is definitely the biggest strength of this direction.

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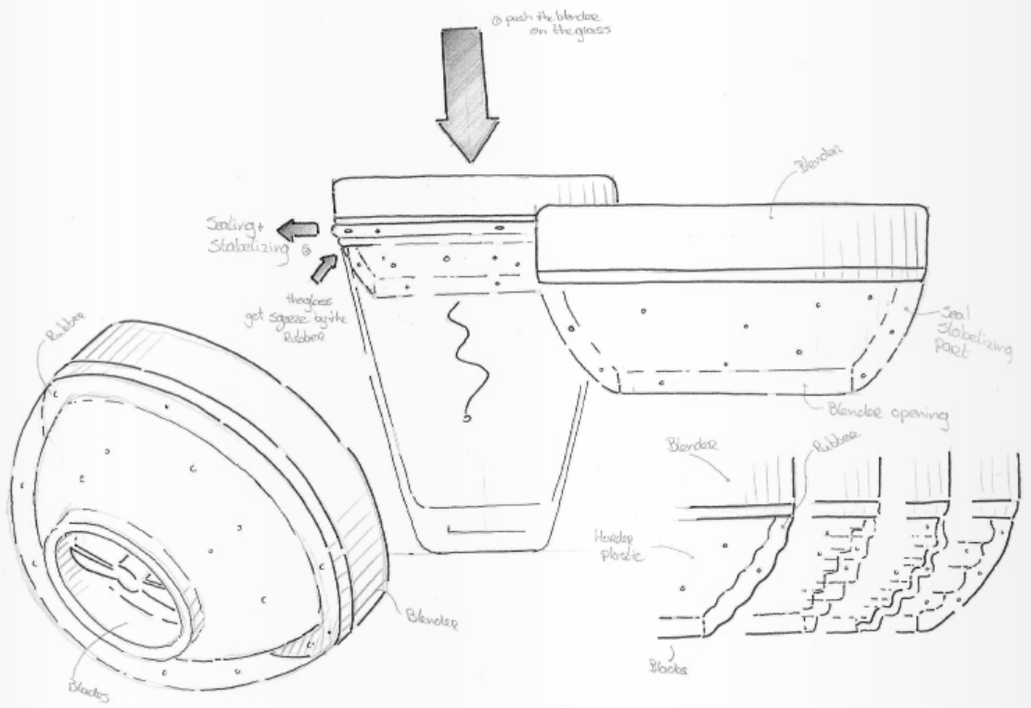
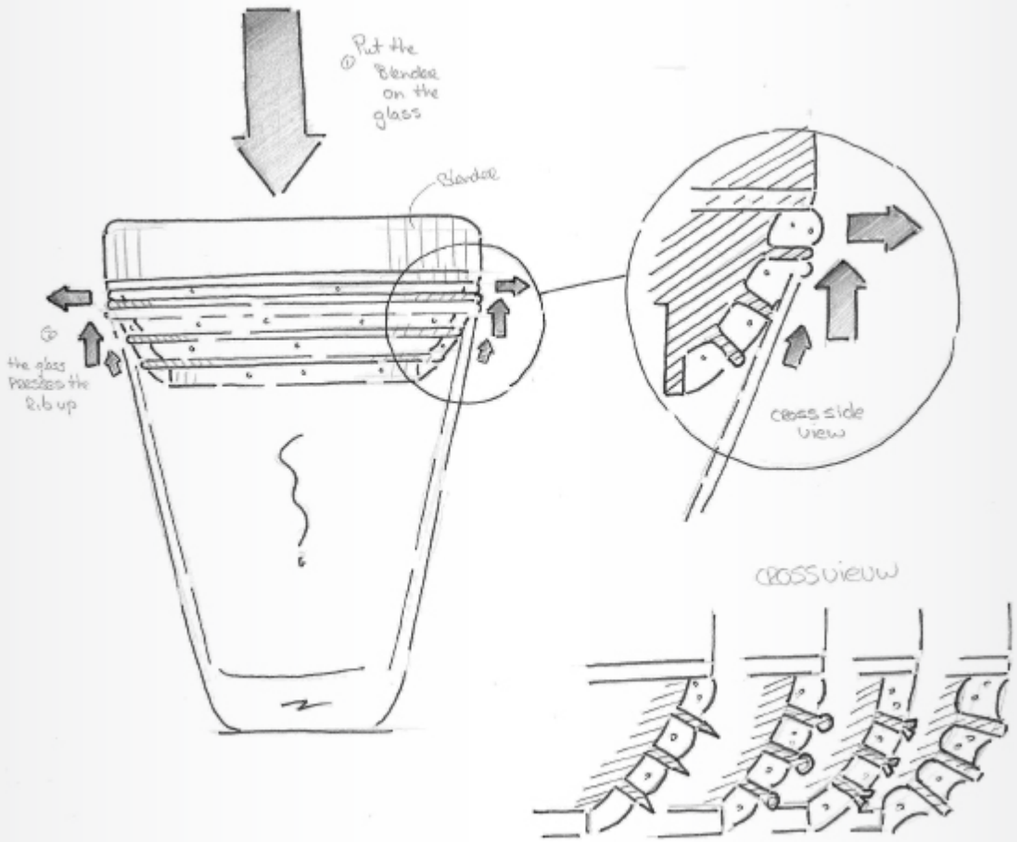


The foundation of the final direction is based on this ball shaped form covered with a rubber sealing layer. This layer should have a smooth surface that can easily be cleaned and forms an interesting and precise seal between the blender and the glass that can also support the vacuum effect. The rubber layer should be minimally 2.5mm preferably maybe up to 5mm thick so that in combination with the round shape it will receive the edge and the upper part of the glass to create a first good sealing and stable connection. Three imbedded rings of a stiffer rubber (70/80) and connected to each other, have to give direction to the user to where the final position of the glass will be.
Because these rings stick out of the surrounding softer rubber a bit, they will offer guidance when the blender is put on the glass and the first ring that is a bit wider than the diameter of the glass will intercept and support the glass to stay straight. Because of the upwards force of the glass on this first ring, and the surrounding rubber, a second lower positioned ring, that is a little bit smaller than the diameter of the glass will also be pulled upwards by this transmitted force. Because this second ring also has a small sloping downward angle, it will be pulled outward and against the inside of the glass. The lower the rings are positioned and smaller the diameter gets, the more the rings stick out of the surrounded rubber. This is done because the lower you get the faster the shape of the ball goes inwards and the longer the horizontal distance between the edge of the ribs and the inside of the glass can get.



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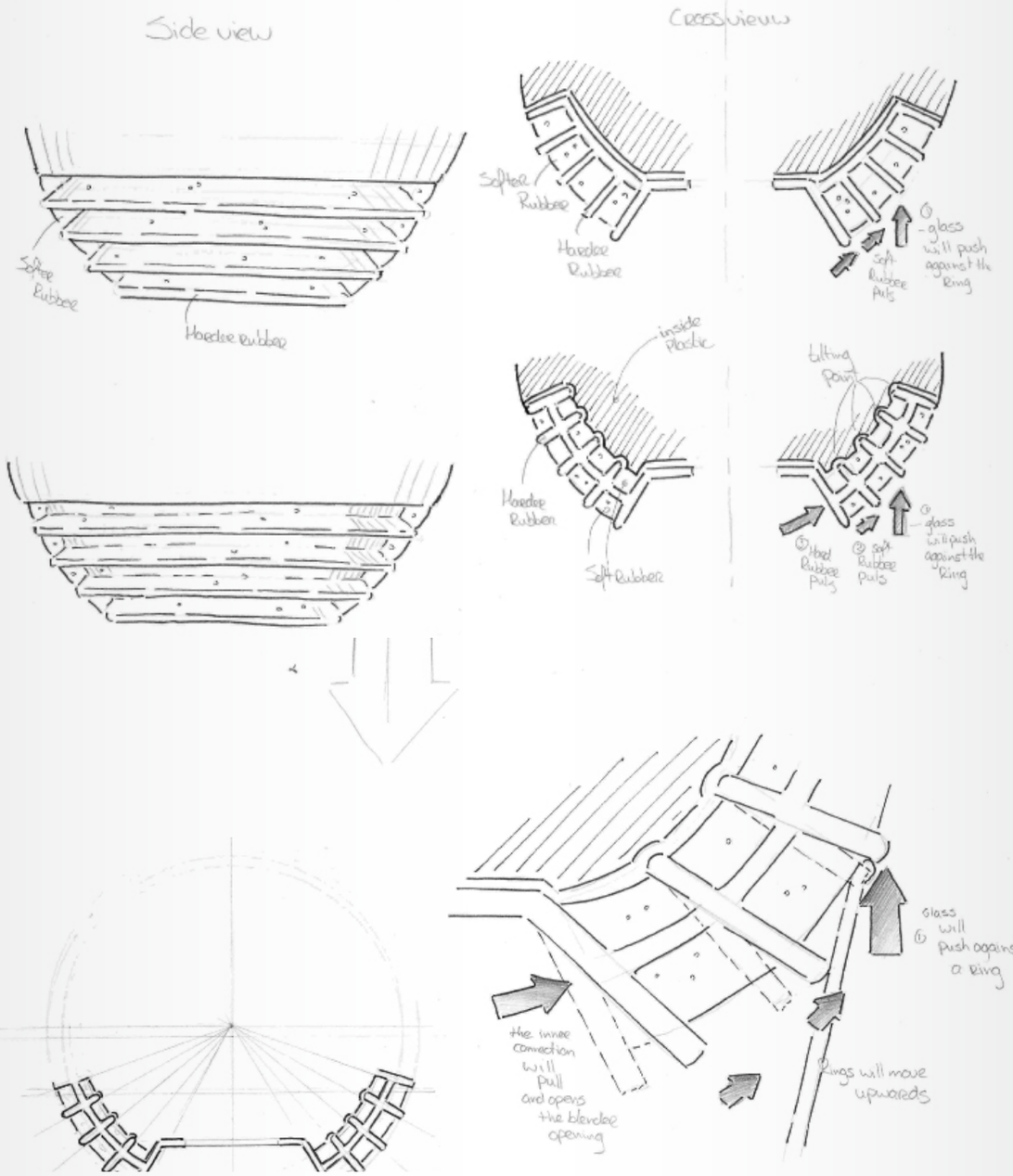
This second ring provides extra stability and a second important sealing. This sealing lies 7.5-10mm beneath the edge of the glass and provides a good sealing as well as a clean top edge surface which is an important feature when you want to present an inviting and attractive glass of Fruit juice or Smoothie. This 7.5-10mm decrease witch probably also result in a decrease of usable glass volume results in another positive effect, user are now more on the guard to not fill up the glass all the way up to the edge with fruit and if they still do they now squeeze down the fruit, when applying the blender, so the blades are more cable to do there job and perform better.
The thickness of the rings is a middle course between the wish for a thick ring that supports the glass better and the thinness to create a nice minimal sealing surface that delivers the best result. An idea that supports both directions is to narrow down or to use a fillet at the edge of the ring so the connection surface with the glass becomes smaller and still you are able to use a thicker ring.
Because I do not prefer to make dent in the rings, which will diminish the sealing effect, the upward flexibility of the ring also has to be considered when making a decision on the thickness of the ring. The surface of these rings needs to be as smooth as the surrounding rubber, which also makes it easy to clean and provides a good sealing. The opening of the blender, where the blades are positioned and a most upper ring that is positioned within the upper part of the blender are connected to and are from the same material as the three rings just described. The opening and this last ring are a bit thicker and could be coloured differently, so it offers an indication of the smallest and biggest glass size that can be used with this blender. A support on the inside of the opening of the blender will stabilize this wall at the level of the blades, to prevent it from bending inwards and touching the blades. However, when the blender is put on a glass the still flexible part of the wall nearest to the edge will bend outwards. This results in two advantages; the ingredients of the Fruit juice or Smoothie can more easily reach the blades because the opening is wider and tunnel shaped, and when the wall is bending outwards the main round shape of the sealing will be flattened out more which makes the V shaped gap between the sealing and the glass smaller.
That the opening of the blender and the rings stick out a bit from the surrounding rubber has another reason which has to do with the superfluity of the ingredients of the Fruit juice or Smoothie that sticks at the blender after the creation. Because of these slightly sticking out parts, the superfluity on the blender will experience a small delay when flowing downwards, just enough to get more control over them and be better able to guide them down and tap them off into the glass. The small downward angle of the rings will care for not too much delay as it also prevents the superfluity from floating to the handle part of the blender when the blender is (with or without a glass) put upside down again.

By making some changes to the ball model with the use of rubber foam and lute, I was able to test this final direction, which resulted in a convincing performance in both the sealing and connecting direction. The results supported the main aspects and ideas behind the construction just described, but I remained curious if I was able to make improvements by using the experience and knowledge gained from all the try-outs and tests I executed. Although the sealing of the second ring worked tolerably well, this is an interesting focus for further development in this direction.
By brainstorming again with a lot of the catered materials beforehand, I may have found a possible improvement on the final direction, but because of the complexity of the new shape I was not able to try out and examine if the changes worked and really improved the performance.

By extending the ribs and surrounding these also with softer rubber further inwards, I will improve the tilting effect of the ribs which most probably results in better working sealing and connecting properties of these rings.
By also moving the connection between these rings to a position more in the middle, I may improve the pulling effect between these rings. So when a ring is pushed upwards by the glass this ring may be better capable of pulling the other rings and the wall of the blender opening in the same direction.

When applying these changes, other adoptions as the thickness and other properties of the ribs and the surrounding rubber have to be reconsidered. For example there is a good chance that the ribs, when lengthening them but keeping the same thickness, will easily bent on an undesirable location. Also the possibilities of the parting of the rubber components from the moulds will become more important here.



The final direction that is based mainly on one of the first ideas, which was translated into the ball model, has been completed with the best properties that came forward from testing the U model. This very simple looking direction may give the user an exiting feeling when used for the first time, but after experiencing the good performance it will deliver a good reliable feeling that is not drawing the attention anymore when blending Fruit juices and Smoothies. The connecting properties will still ask for attention which is also important to make the user conscious of the danger of the knifes when applying the blender to the glass.
The direction that is aimed for, is based on a very interesting technical background of using the characteristics of different plastics and by combining them to one component you can make use of the different properties to construct many technical solutions. The technical background based on double shot plastic moulding already made big jumps in the last couple of years and has much future potential also for the use in this product.

Important Electronics and Batteries

Batteries
For making an interesting choice for the most interesting battery, I was able to get in touch with a development engineer of Power processing within the Advanced Technology Centre in Drachten. Also here I was moved struck by the complexity that besides the product requirements, there are a lot of other factors, most of them incomprehensible, but also these had a big impact on the specifications of the battery. The development behind the technology of the rechargeable battery is going really fast and already made some enormous steps the last decennia.

Different kinds of rechargeable batteries:
Lead-acid, Alkaline, Ni-iron, Ni-admium, NiMH, Ni-zinc, Li-ion, Li-polymer, Lisulfur, Nano Titanate, Thin film Li. NaS.
There are a few directions of batteries that could be most interesting:
- Nickel cadmium - highly taxable, quickly rechargeable, the quality decreases when the battery is recharged, but not complete empty (memory effect), cadmium is poisonous, most considerate, (Energy density 45wh/kg, Power density 200W/kg).
- Nickel Metal Hydride - High energy density, free of cadmium, fairly high self-discharging, bad warm/cold resistance, when used properly, the lifespan is longer than the Nickel cadmium, (Energy density 60wh/kg, Power density 175W/kg).
- Lithium-ion (Li-ion) - High energy density, low self-discharging, short lifespan but able to recharge more often than Nickel cadmium and Nickel metal hydride, vulnerable, low loss of charge when being used, (Energy density 140wh/kg, Power density 180W/kg).
- Lithium ion polymer - High energy density (higher than Li-ion), low self-discharging, short lifespan, (Energy density 130wh/kg, Power density 300W/kg).

The Li-ion and Lithium ion polymer battery is a common preference for many electronic companies and these batteries can be found in many consumer electronics nowadays. The Advanced Technology Centre in Klagenfurt and Drachten also advised to specially focus on the Li-ion and Lithium ion polymer batteries.
Where they underlined that Li-polymer cells are best in terms of WH/volume, however, different shapes are hard to get and if there are any, they will be much more expensive. By studying my Product vision, the engineers delivered three possible lie ready options:
- 2x Li-ion cell, D 18.10mm, H 64.80mm, Weight 44.3g, Nominal Capacity Min. 1500mAh, Nominal Voltage 3.7V, Standardly used in the current Philips cordless hand blenders
- 2x (or 3) Li-ion cell, W 33.7mm, H 48.5mm, D 10mm, Weight 39.5g
- 2x Li Polymer cell, W 38mm, H 80mm, D 8mm, Weight 37g, Could be an option, never used in hand blenders, more durable, but may need a steel case.

They also confirmed that it is an interesting idea and it is possible to shape the batteries in a way they can nicely fit around the engine, but it will be hard to find these if they already exist and if they do not, it will translate in a much more expensive solution.

Battery charging:
For charging the batteries I could make use of direct wired contact, also known as conductive charging or direct coupling. This way of charging is used in the current Philips cordless hand blender HR1378 and requires direct electrical contact between the batteries and the charger, which is solved by two small round contact points on the top of the blender and that make contact with the charger when stalled away.

But maybe a more interesting way of charging for this new blender could be charging by induction. This is because of the major advantage of the inductive approach over conductive charging, that there is no possibility of electrocution as there are no exposed conductors. Inductive charging charges electrical batteries using electromagnetic induction: a charger station sends energy through inductive coupling to an electrical device, which stores the energy in the batteries.

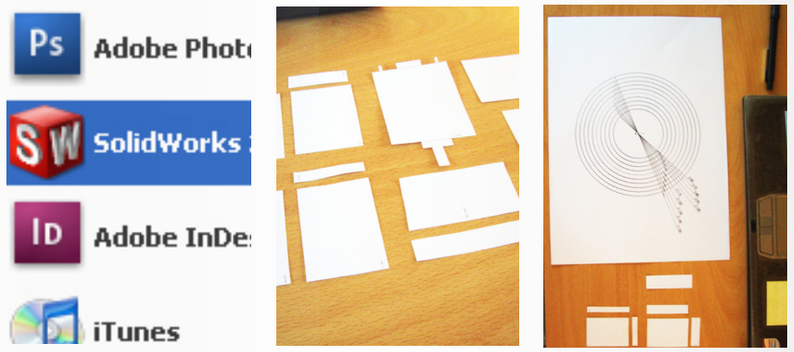
Induction chargers typically use an induction coil to create an alternating electromagnetic field from within a charging base station, and a second induction coil in the portable device takes power from the electromagnetic field and converts it back into electrical currents to charge the battery. Sadly, still with a loss of energy that has to be considered and dealt with by the engineers and the designer so they can come up with and find the most efficient solution(s). For example by focussing on the induction coils, which form an electric transformer, by placing them closer and keeping them within 5mm, the batteries charge much faster (within one or two hours) and it becomes more efficient. And if this is not, possible they at least have to be kept within 10mm. What is also very helpful to enlarge the quality of charging and works more efficiently, is to convert the biggest possible induction coils into the blender. By for example taking the average diameter of the Fruit juice and Smoothie glass of 82.2 mm that has to be met by the sealing is already a very promising diameter to convert the conduction coils in.

Interesting comments:
PCB's:
By designing the blender I have to keep in mind that at least two PCB's are needed.
A PCB that is used for charging [3x4mm], and a PCB used for the interface [4x4mm].
Blades:
The properties and position of the blades are a very important aspect of the performance of the blender. Points of interest that have to be considered relating to the blades are; - The blades: shape, dimensions, material, and the position to the blender, the glass and the ingredients, blunt- or sharpness of the blades (fruit is often smashed instead of cut to pieces), indented, etc. These are all points of interest[ing change] for each hand blender or blender on the market, to realise the best performance for this product. But there are also some important points that have to be considered, like the distance between the blades and the wall which has to be as small as possible.
In the final representations of the new blender model, these main points are taken along as important and interesting. The blades are directly connected to the shaft of the motor (more compact, and noise reducing) in this final representation, are extra stabilized and can not come off the blender (without removing two screws), and the other components that are sensitive to wear and tear and have to be easily cleanable are made out of stainless steal, can easily been assembled, are double sealed (to prevent leakage), and there is space left for a mechanical blocking system for the knifes if required by safety norms.

Extras:
It will be interesting to make the motor and power unit better reachable for the consumer so they can take out the motor or battery (which are sensitive to wear and tear) and replace them themselves. But overall it stays important that these techniques are fully sealed with the minimal change of leakage.

More technical components will be discussed and can be found in the discipline User interaction & safety.

From all the components described I made simplified outlined under layers and 3D Cad files which I could move around and make an nice and interesting layout to base the final design on.

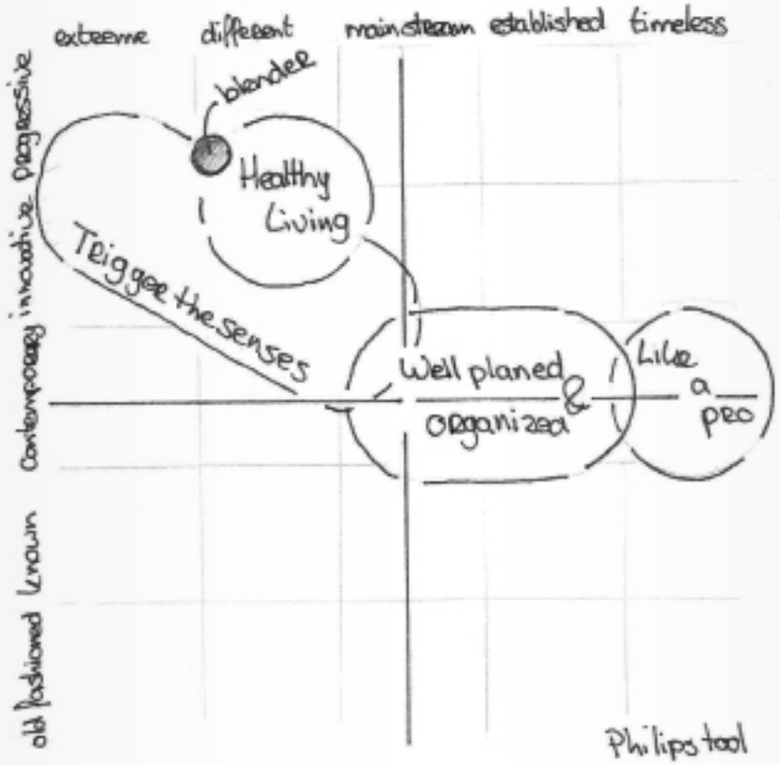


Aesthetics

Introduction

Realizing this product proposal is about creating and specifying the quality of a person's experience throughout the entire period of engagement with the blender. For the creation of this user experience in interaction with the blender, aesthetics are involved and this is more than just appearance; especially within this project. It explains what is pleasing in the areas of vision, sound, touch, smell, taste and mind and gives an emotional meaning to the product. It Aesthetics forms a bridge between the user and the product proposal (the Product vision, the VPH and the different disciplines) but are also directed by these.

As described, a Code for Domestic Appliances (CoDA) has been developed to realize a more aesthetic identity of the products coming from Philips DAP – department of Food & Beverage. Within this CoDA, an Aesthetic guideline is described per chosen IPP theme where Healthy living and Trigger the senses are chosen to be the most interesting IPP themes for this blender. This choice is based on the research titled: Philips Cold Beverage Segmentation's (and Philips Food Preparation) executed by Synovate Research reinvented in assignment and cooperation with Philips and the CoDA approach. This research has been used for the construction of the VPH's. The IPP theme I mainly focused on was Healthy living, whereas the IPP theme Trigger the senses is used practically to design the main form, The Decoration and Pattern and the User Interface (UI), to be better able to stimulate the experience of the interaction. Both IPP themes are focused mainly on Q4 level, whereas Healthy living also stretches down to Q2 for kitchen appliances. My Target finds itself in Q4 (-Q3). (The description of choices for the UI, M&F and Detail & Colors will be described in the following disciplines but are mainly specified at the same moment).

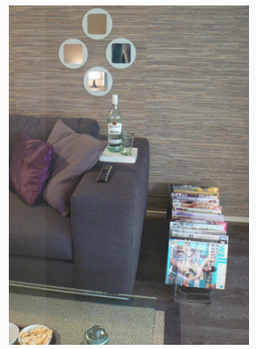


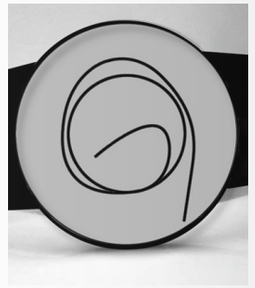
Form and Decoration

Blender

As mentioned before, to phrase the most clear and understandable Product proposal, I described each discipline individually with the most relevant decisions made, and as complete as possible in the most chronologic and self-evident order possible.
Although this is in fact even more impossible to do with the aesthetics, because here the different aspects are even more related and interacting with each other than was the case between the disciplines already described. However, I was able to make subdivisions within the aesthetics that all covered a part of the whole and by describing them and the most relevant decisions made, one by one. I was able quite well to phrase a comprehensible story that led to the final aesthetic translation, in the most chronological sequence possible. By breaking down some tangled strong connections and interactions between the different aesthetic directions and in this way simplifying the whole aesthetic process a bit, I was able to make three main subdivisions for this report, consisting out of the following aesthetic directions: Form and Decoration & Pattern, , the User Interface & Interaction and the Material & finishes, Detail & Colors.

Creating the Product vision, the VPH and by going through the disciplines just described, I already gathered a lot of information that must all be considered to properly guide the Product vision to the final Product proposal. In this process, I also came across a lot of inspiration that could also help me to create and specify the quality of a person's experience in interaction with the blender and creating an emotional meaning to the product. With this gathered information and inspiration, and the Aesthetic guideline CoDA, I started to work on the overall aesthetic form of the blender.

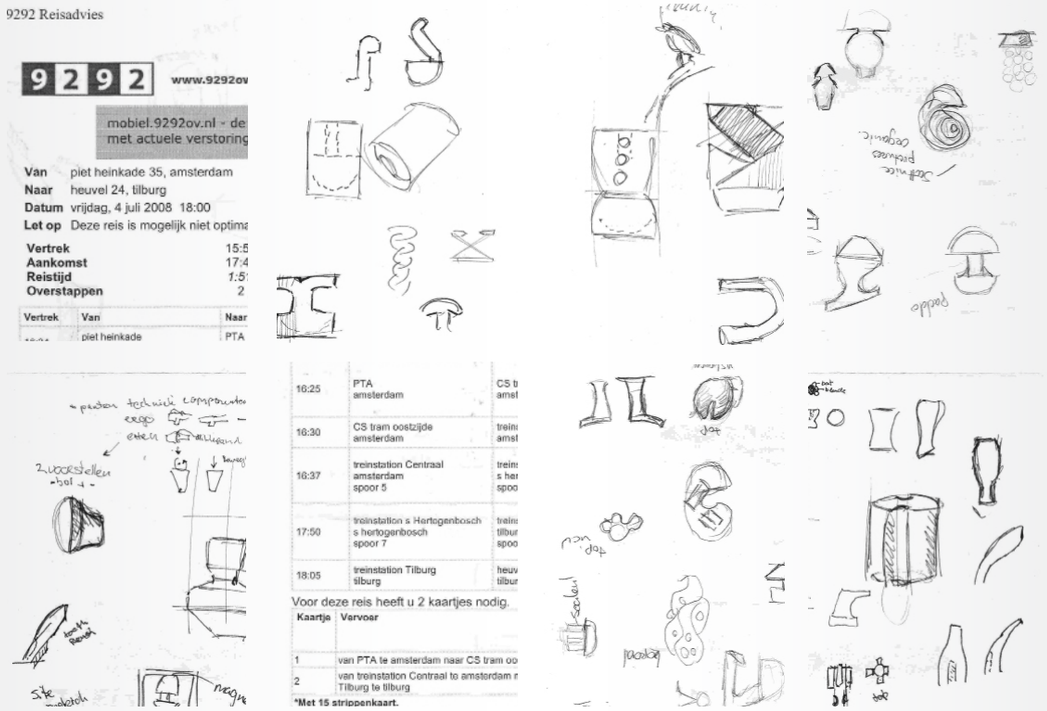




Before I start to write down the steps taken, I have to underline that especially this aesthetic discipline was executed almost simultaneously with research for the other disciplines. For this reason, I was not yet always abreast of the impossibilities (or possibilities) which especially in the beginning gave a lot of interesting freedom but also created some decisions that were not that interesting at al in retrospect.

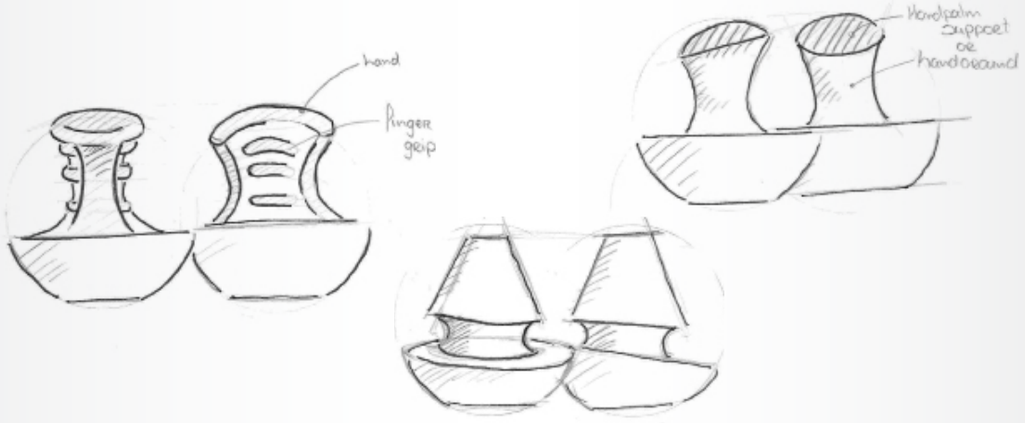
The first aesthetic direction I worked on and will describe here is the generation of an overall aesthetic idea and executed mainly by designing and searching for an overall form.

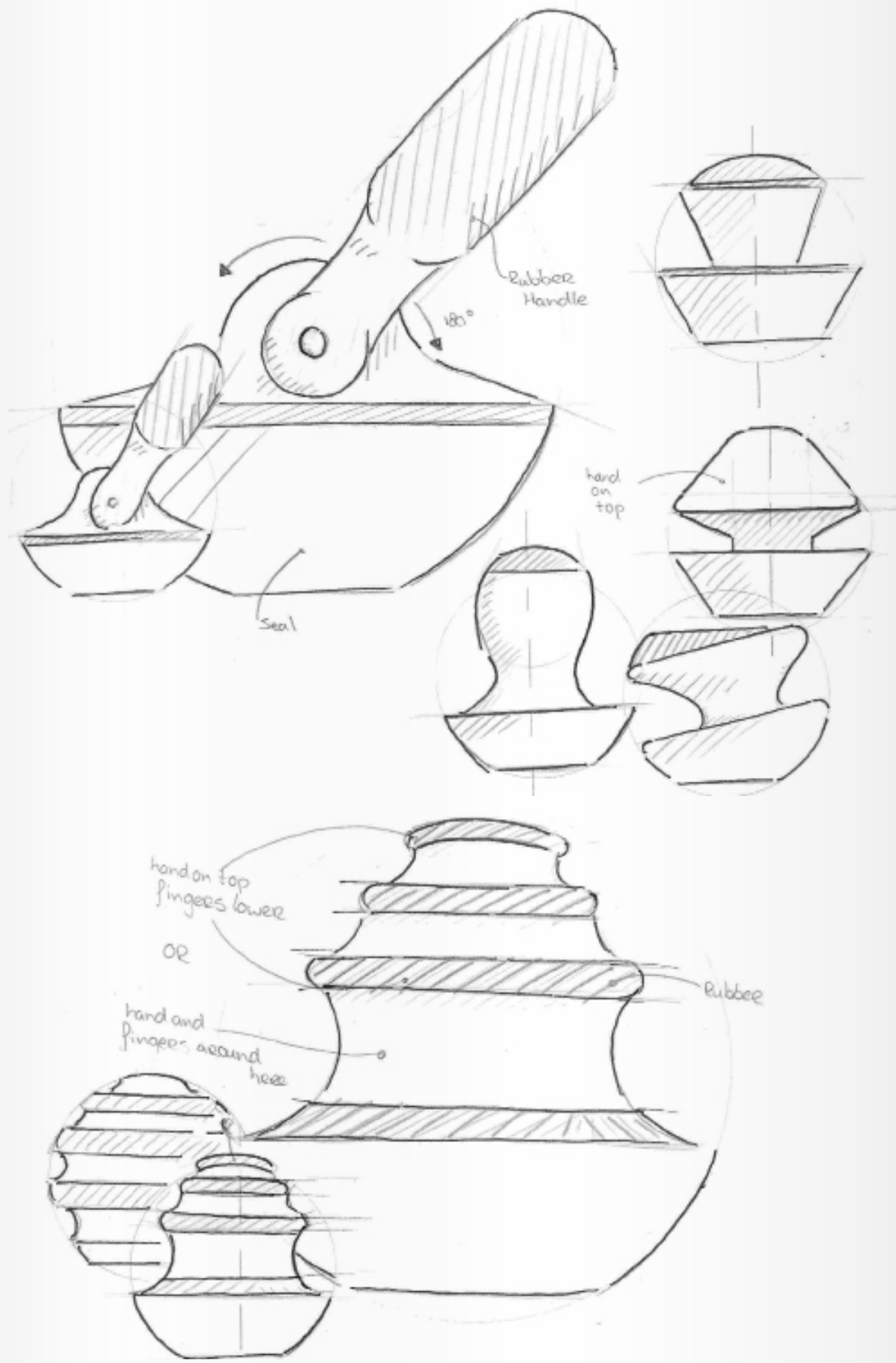
This search started soon in the project by f.e. making some quick sketches on a piece of]paper, on the sketch application of my phone and a lot in the margins of news papers. A lot of these paper and news paper sketches I made in the train (from and to Amsterdam) where it is not always easy to draw because of the shaking train, but the shoot outs also gave new inspiration. This resulted in a lot of first ideas and form sketches.

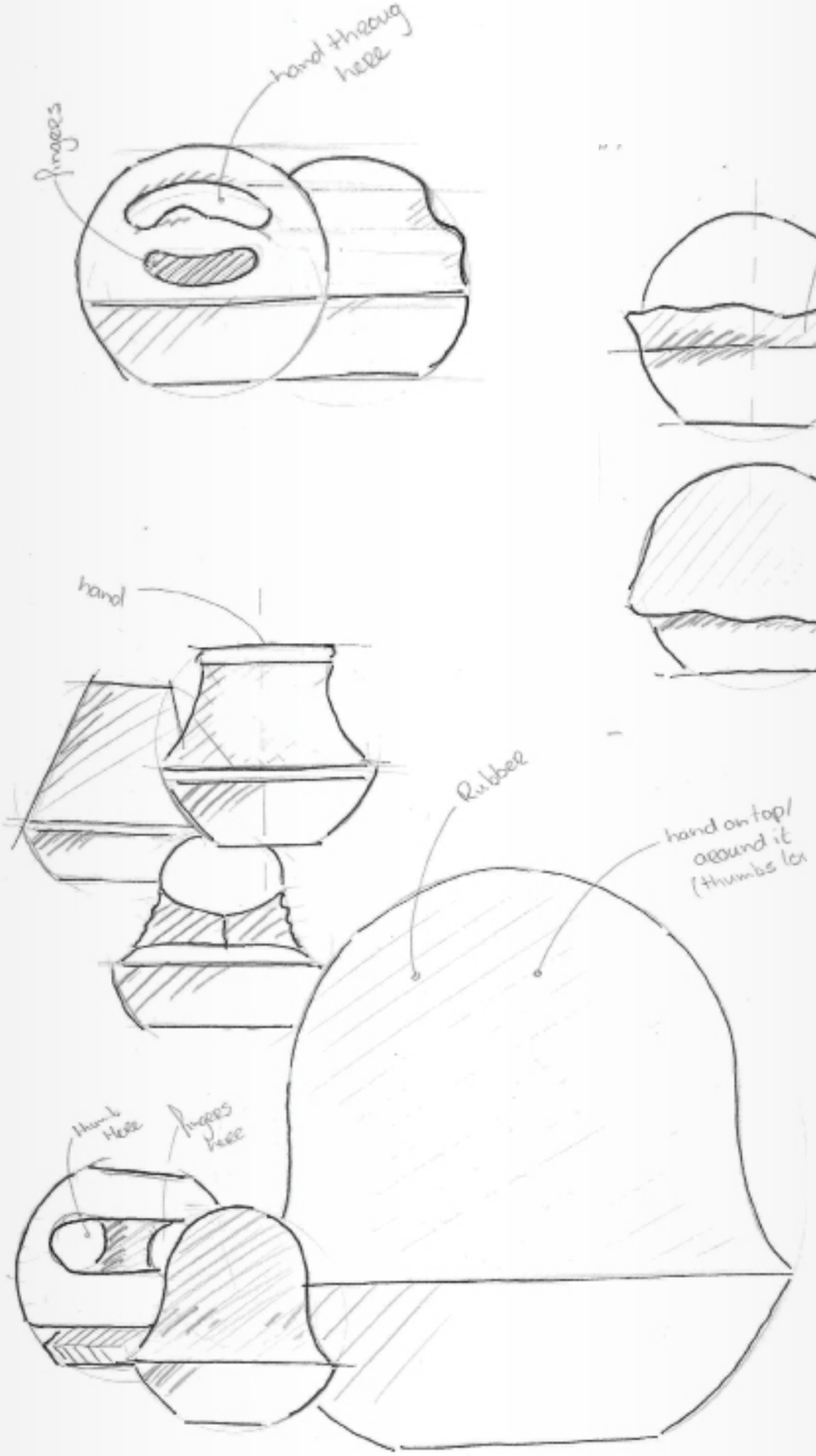


Reaching further into the project when I already gathered a lot of information and inspiration, I sat myself at and on the big table within the design studio and surrounded myself with all the sketches and notes created so far.

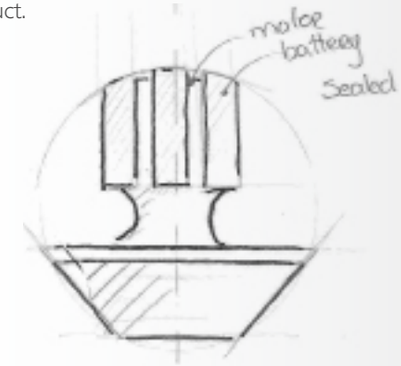
From all these sketches and ideas I made a first interesting selection, sometimes quickly helped by passing designers. By intentionally sitting and drawing within the Philips design studio, I had a lot of interesting applicable mood boards, models and other inspiration around me. I was most impressed by all the initial concept models executed in white foam, in which you can still see the designer's vision and hand. By looking at the models, the products already on the marked and by going through the CoDA, I experienced that most of the Domestic Appliance products are characterized by their modest and controlled form existing from a combination of symmetry and essential lining. By using the selection made, knowledge gathered and surrounded by a lot of inspiration, I started to sketch again.





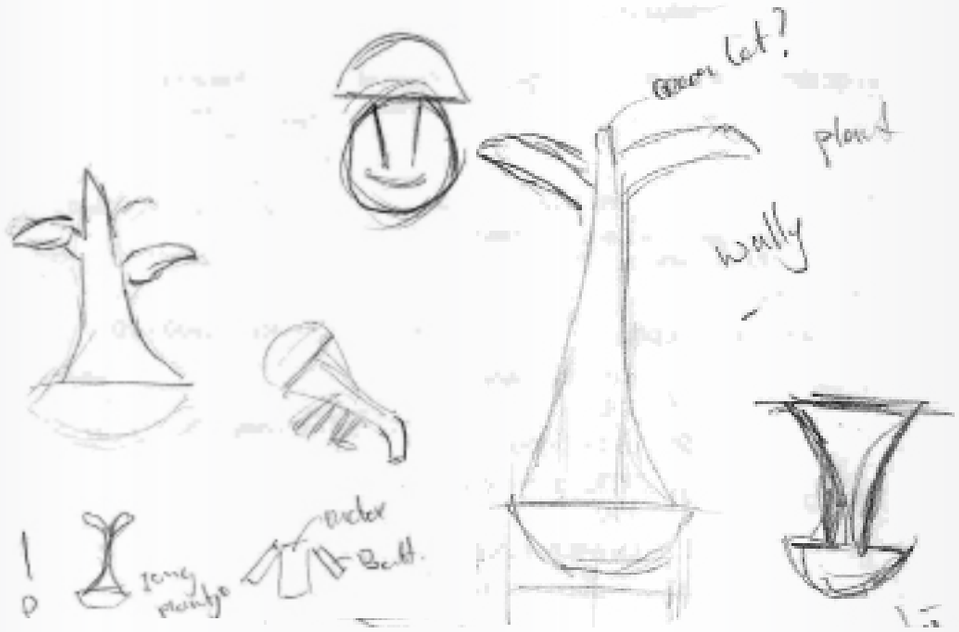


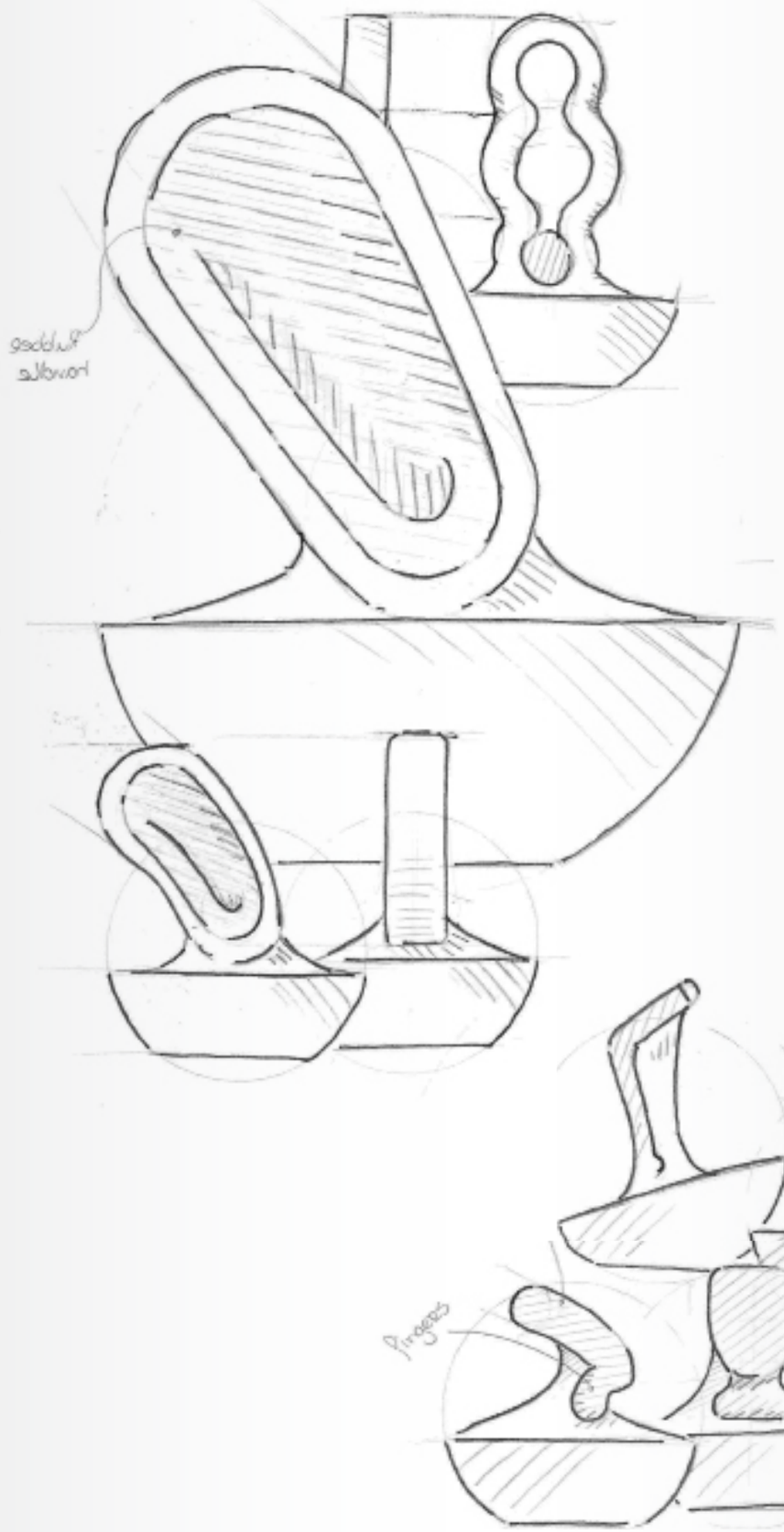
Next to working on the disciplines 'environment and ergonomics' and after multiple days of sketching, combining them to evaluation summaries, making selections, finding and acquiring new inspiration and sketching again, I made a final selection by reducing the eight remaining most interesting ideas back to three final aesthetic directions from witch eventually two remained upright as most interesting.
The idea that dropped out quite quickly was an interesting idea, but did not properly suit Philips very much. The idea is named The Seal and can be described by nicely arranging and positioning the technical necessities, sometimes with tightly sealed strengthening or protection covers and vacuum packaged all at once within a plastic sleeve. By f.e. positioning the motor in the middle and nicely arranging the batteries around and on top of the motor you already get a real nice symmetrical "organic" shape. This idea did not stand because a big risk can arise that it is seen more as a throwaway after use product.

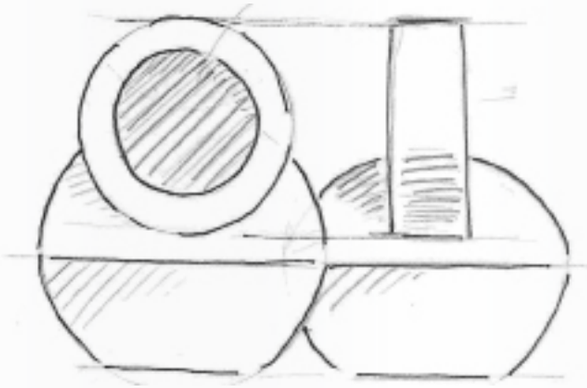


The two final aesthetic directions are named the The Stem and The Ball and were found very interesting and seen as a potential to base the final blender aesthetics on.
The ideas and design behind these directions are both inspired on one of the two described IPP themes; whereas The Stem was mainly based on the IPP Healthy Living, The Ball was based more on the IPP Trigger the senses. Although these two directions were directly based on one of the two IPP themes, I did not strictly fix these within these classified IPP's for the further aesthetic steps.

The Stem:
Is based on a longer form within the vertical direction and was based on an organic but structured cylindrical shape. The shape is kept slimmer at the lower part of the 'handle' but does not run too wide at the top to prevent the form from becoming too top-heavy. The idea comes from and can be seen as an abstract translation of a young plant from which it lends its name, but is pushed in a more technical direction.

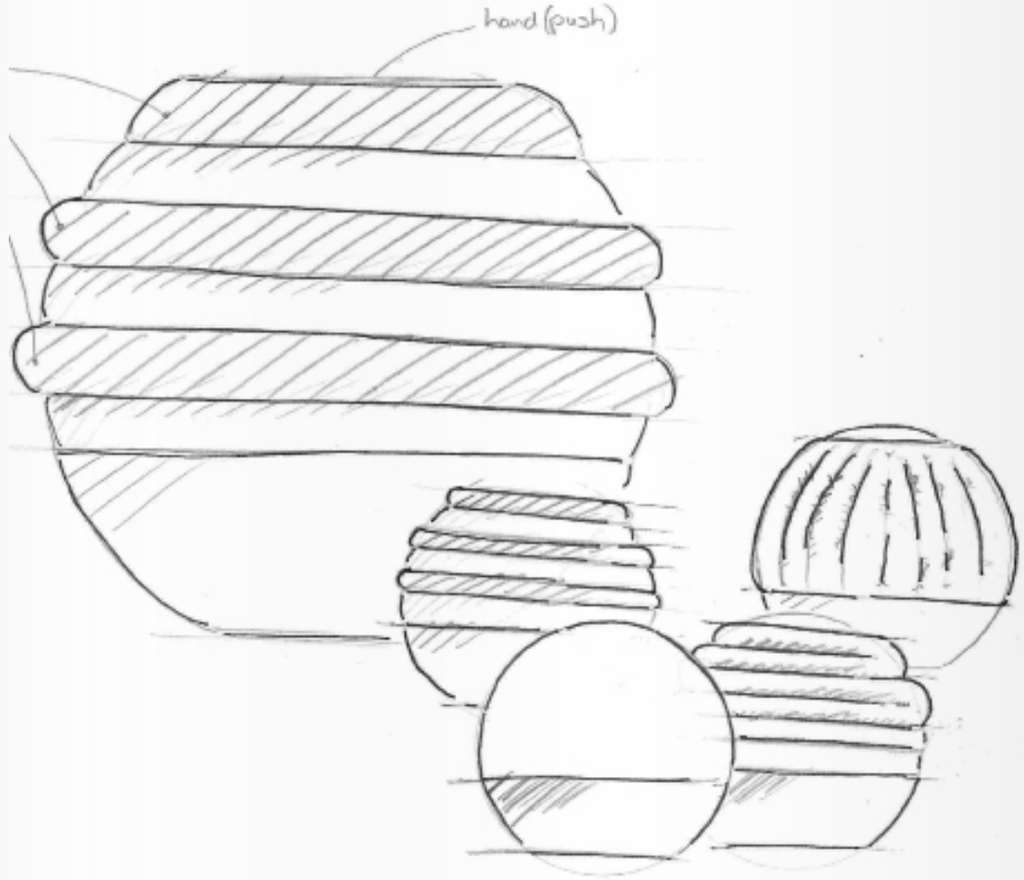




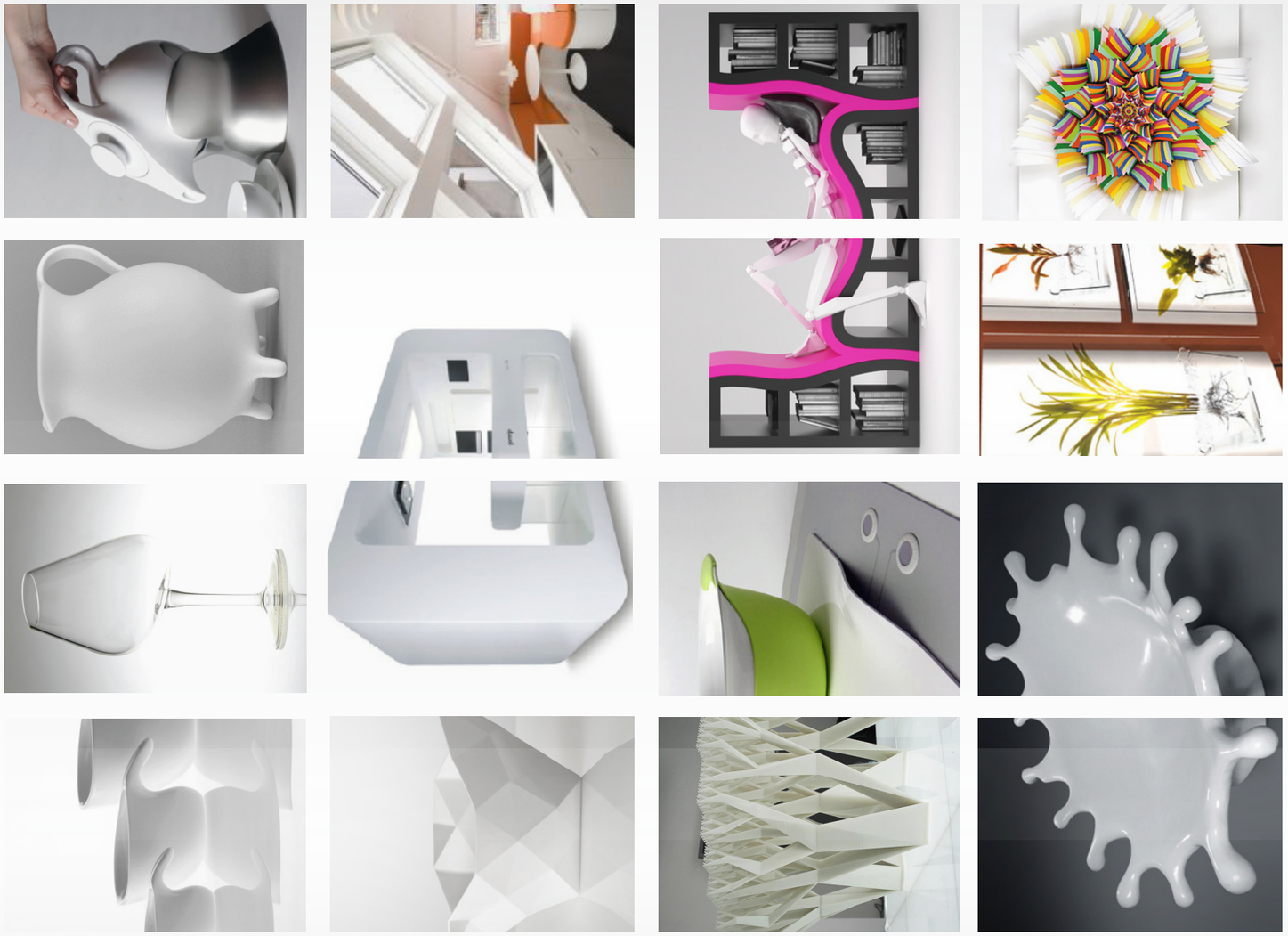


The Ball

The form of the Ball is simple and neutral and must been seen as a blank canvas to work on further and where creation can take place. A most basic and calm yet playful shape that will contribute and have a supporting role for the other aesthetic aspects, in order to give audience to the decoration & pattern, the magic of the user interface and finishing effects.



To take these two final directions further, I again started to draw and search for forms that lie in line with the idea behind it and could be caught by the given description. I also gradually took a step further in the aesthetic development by involving another important aesthetic direction; Decoration & Pattern. This was especially an interesting continuation for The Ball direction. To get a better image and feeling of what the actual shape would look like in 3D, I used a block of blue clay, in which I tried out different patterns, but mainly used to knead new forms in, especially for The Stem direction.



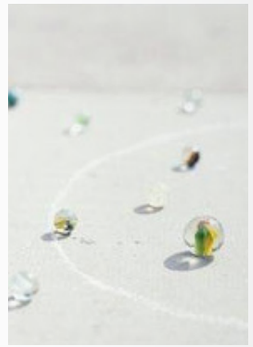
Having finished and worked out quite a lot different new ideas within these two directions, focused on the main forms but at the same time also going into a more detailed direction by integrating the decorations & pattern, I again made an evaluation summary. The discussion coming forward out of this evaluation led to the final direction that will form the base of the aesthetic translation from the Product vision into the final product proposal.
To find out witch aesthetic direction is the most proper direction to make this translation into, I again looked at the Product vision and VPH. Luckily, I did not have to base the decisions on these two aspects only. At this time I also worked out the discipline environment and ergonomics and reached the final phase of the discipline techniques, which brought along a lot of information that also helped me to base the final decision on. Especially the information gained from the discipline of ergonomics weighed heavy in the decision making. The final direction that underlined the Product vision and the VPH excellently and was best able to properly guide the Product vision into the final product proposal was convincingly the aesthetic direction of The Ball.

An important reason why the aesthetic direction of The Ball was chosen over The Stem came forward from a remark made during the discipline of ergonomic and which was also repeated and strongly experienced while trying out interesting motors during the discipline of technique. Although I already focused on this remark quite fast when trying out and designing new forms for The Stem, it stayed quite hard to guide people to hold this blender in one of two favorable positions with the hand positioned vertically with their thumb pointing down. After portraying one of the most interesting and promising shapes of The Stem in clay I had to reshape it so often, so that people would grasp the blender in the favorable way at first prompt, that the interesting elegant shape was long gone and a big lump arose.
The first prompted position to grasp The Ball is by keeping your hand in a horizontal position, which was the other favorable position to hold the blender when blending.

In this same ergonomical direction, the form of the aesthetical direction of The Ball had another advantage over the form of The Stem. The point of gravity of The Ball can get closer to the glass, which will result in an experience that both points of gravity are closer combined when putting the blender on the glass. At the same time, the point of gravity can be kept close to the hand and by having this point just beneath your palm will make the turning of the blender and the glass while blending easier and better controllable.

By having this overall round form, people will associate it with 'rolling/turning', which will refer indicate to a turning point. This reference in combination with the fact that both points of gravity can get closer together (closer to the ball's own point of gravity), will focus the people on one point of gravity and turn the combination around the blender.

This association with 'rolling/turning' already came into being at people's childhood when experiencing the playfulness of round objects; a soccer bal, bouncing balls, a kangaroo ball, etc. This playful experience and association with the aesthetic direction of The Ball brings along a surplus value because it underlines the wish for a playful interaction described within the Product vision very well.



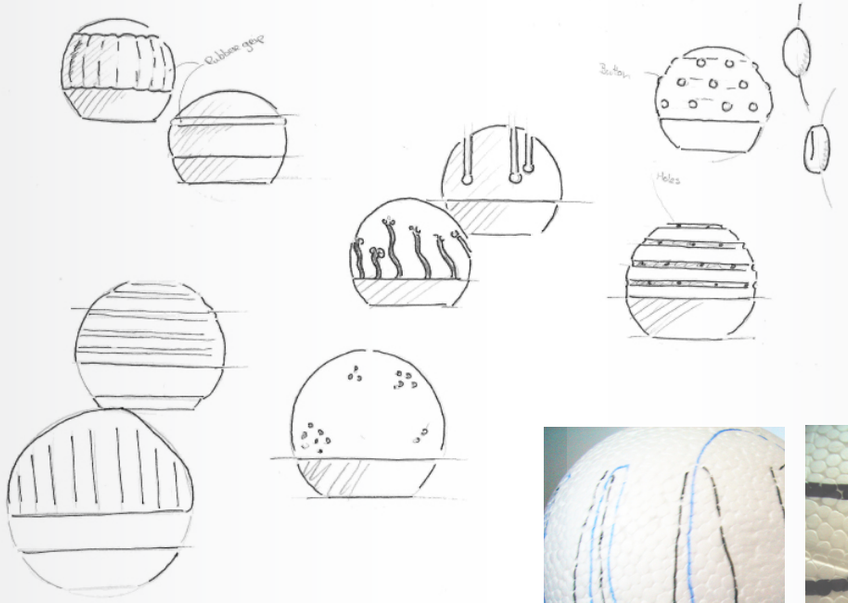
The described and needed technical components for the blender can be nicely and more economically rearranged within The Ball form.

The Stem also associates many people too much with the archetype of the hand blender. This is not a smart move when you want to launch a new product within the same product category. People do not immediately understand the meaning or surplus value of this new blender product when compared to the hand blender or could even mix them up.

Now that the decision was made to focus on the aesthetic direction of The Ball, I looked for inspiring portraits that could help me even better with the continuation of finding interesting patterns that could be nicely integrated within and also shape the overall form. I particularly looked for portraits that fit within the IPP themes Trigger the Senses and IPP theme Healthy living. By now going into more detail and coming closer to the final aesthetical translation of the Product proposal I want more guides from both IPP themes to better experience and be able to follow the aesthetic identity of the products from Philips DAP.

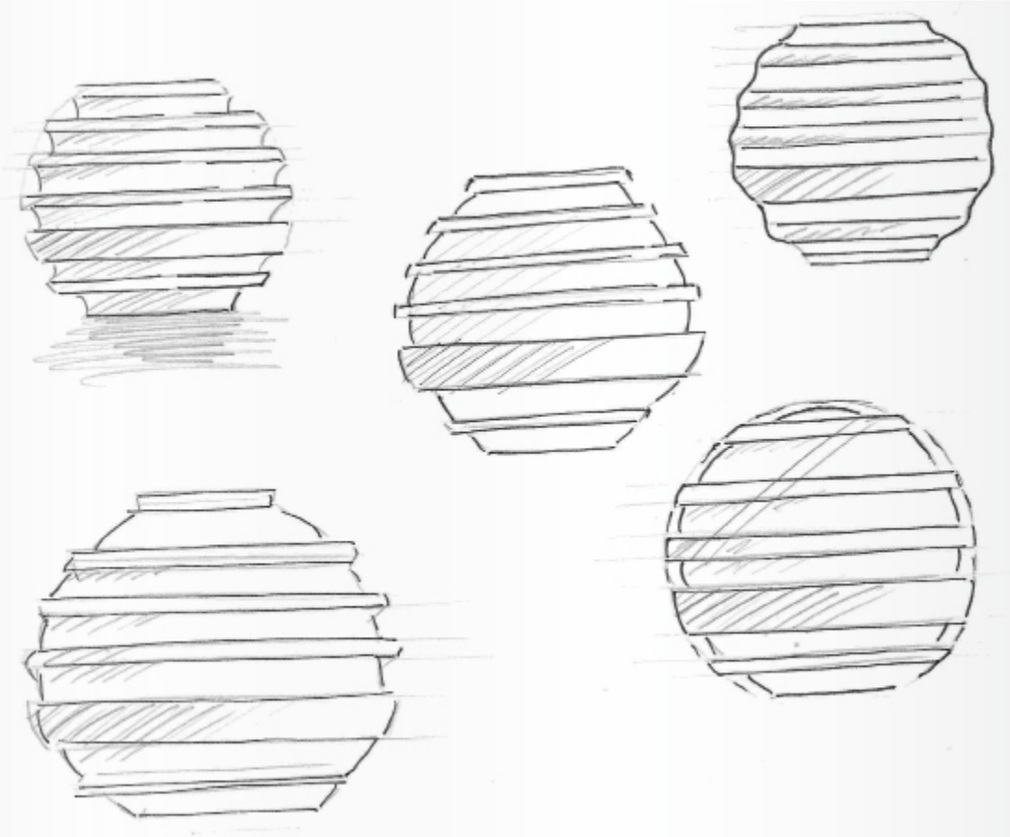
Another interesting source of inspiration that really fitted nicely with the direction, came forward from finishing the discipline of technique. The structure that is being used to create the sealing between the ball and the glass already was very interesting, yet there still was some aesthetic freedom. By extending this structure upwards, it could provide more functional benefits whereasas the overall form also nicely can keep its symmetry and essential lining while at the same time it can be used nicely to create a soft technical organic structure with a natural and dynamic feeling.

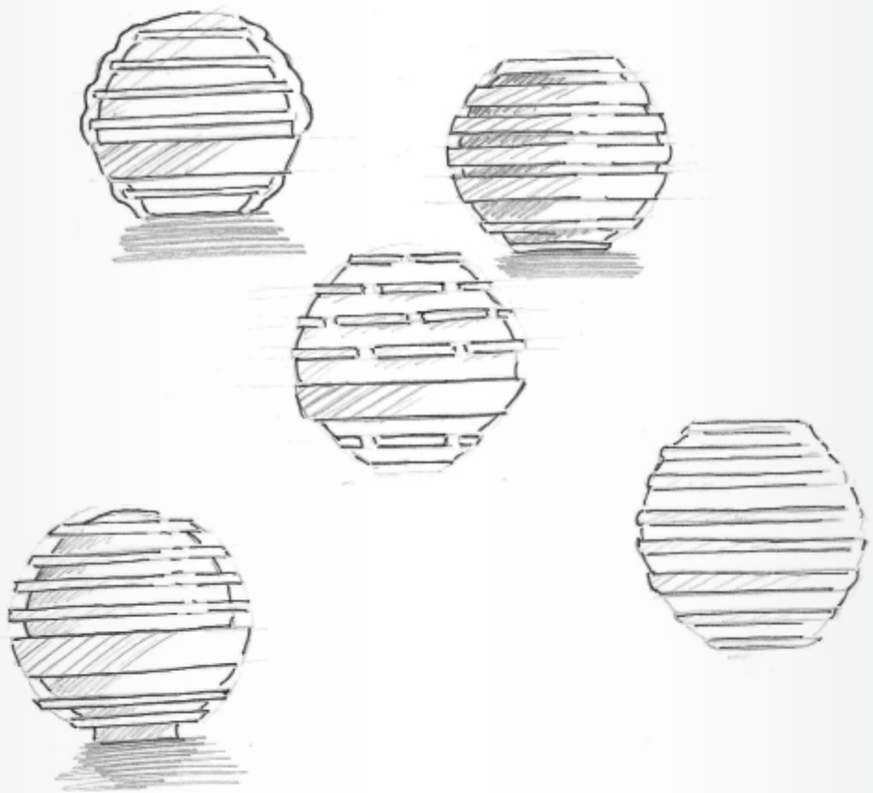
With all this new inspiration, I started to sketch again even more fanatically than before. I started to feel the final aesthetic translation coming closer and more and more new ideas arose which created even more inspiration. It looked like every source of inspiration and information that guided the aesthetics started to fall into place and formed the most interesting aesthetic translation between the Product vision and the Product proposal.
I made a lot of sketches and wrote down idea and notes as reminders. I also changed from clay to ready-made polystyrene foam balls, to be able get better ideas faster of what the different decorations & pattern would look like.



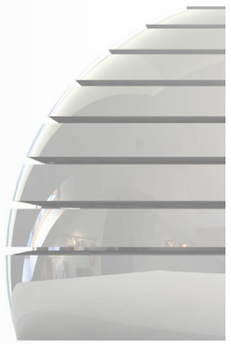
I also used these polystyrene foam balls to get a better idea of the ergonomical background of these forms. I studied how people react when grasping the ball, hold them and use them as a blender. Testing this aesthetical direction, The Ball resulted in an anticipating but very positive ergonomic reaction.

Before this test I first tested different diameters of these polystyrene foam balls on almost the same group of people who helped me during the ergonomic discipline. For this test I used a variation of diameters between 60mm and 130mm with intervals of 10 mm where I handed out a ball without telling them the diameter of the ball I observed the same performance and wrote down their opinion. When they reached for or threw back the ball I offered them another ball (sometimes the same) from behind a screen and executed the same test at least ten times with eleven people.
The results of this test were that the smaller polystyrene foam balls are better controllable and they scored better with performing different movements. The boundary of having a good grip and control over the ball lays [on average] around the 100 mm ball with a spread of 20mm. To convert the technical components needed in the ball I at least needed a ball with a diameter of 90mm and a most interesting diameter for creating a sealing for an average general and/or Fruit juice Smoothie glass was 95mm. After a short consideration I chose this last diameter as most interesting for now. With this choice, I constructed a 95mm diametrical ball and inserted the estimated 550gr weight to again complete a positive test.





From all the new drawings and ideas noted, I went for a last evaluation summary. This evaluation resulted in two last directions both really close to the original structure sketched for the sealing between the ball and the glass.



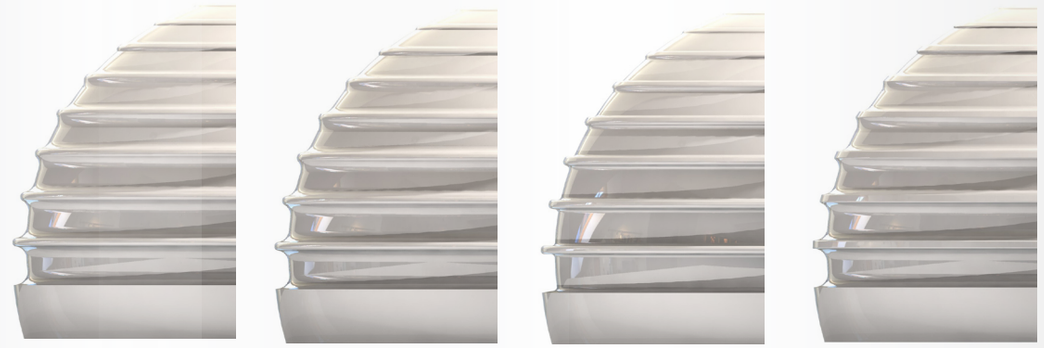
One direction was to copy the structure to the upper part and the other was a mirror image of this structure. Although I valued both directions really close, most votes and the best founded answers were for the copy structure. This structure f.e. made the blender look lighter and more dynamic and a person has much more grip on the blender with this direction. By going for this last direction I was not there yet.

One really interesting note reminded me of an idea I got when holding an apple and a glass in both hands while the sun was projecting a shadow in front of me. I was attracted by the really nice effects the glass portrayed and played on the ground. This playful and inspiring effect could be used nicely to integrate and combine it with the direction taken and by doing so it could make a really nice transition and unity between the glass and the blender especially when blending.

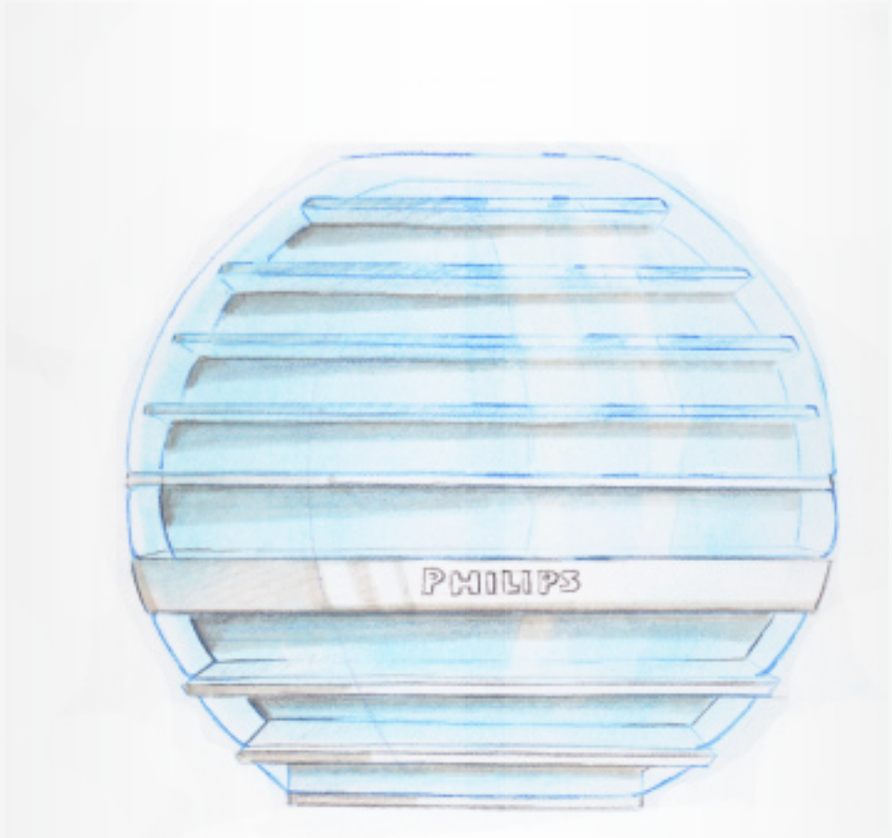
While still in admiration of these effects, I playfully combined the apple with the glass to see the shadow and color changes of the effects on the ground. By doing so and becoming more inspired by the apple, I translated the idea of the protection and shelter the glass offers the Fruit juice inside to first the skin of the apple that is protecting the pulp and pulp again is protecting the seeds. This protection for the vulnerable seeds against falling and disease should also be integrated to protect the vulnerable insides of the blender and at the same time create an easy to clean, hygienic shield.

The combination between the structure and this shield is supporting the dynamic experience by intriguing our senses by revealing a 'hidden' message effect and enhancing the visual appeal and creating a unity too.

Now that the main aesthetic direction was almost fully defined, I started to concentrate on detailing and perfecting the different last ideas. By converting it into a 3D CadCam file by using Solidworks, I was quickly able to make changes and fine tune the different components.



While rendering the final aesthetic direction I was able to and chose to flatten out the top of the blender by taking off the upper ring. I did this mainly to create and be able to add multiple especially functional advantages.
By straightening the top, people are more peacefully triggered to see this as a start position to position their hand on. People are now better able to apply a direct straight centered vertical pressure on the blender to create a good seal when connecting it to a glass. Flattening out the top also brings about more similar characteristics between the blender and the glass which gives another advantage. When looking from the discipline of ergonomics, similarity in characteristics triggers people to mirror their hands when grasping the glass to lift it, after the blender is connected. This results in that both hands are positioned more in a horizontal position which gives the user good control when performing the blender movements. With flattening out the top another advantage is made possible; when blending a Fruit juice or Smoothie you are not obligated to put the blender back into its stand to keep the surroundings clean, but you can position the blender on this straight surface and easily pick it up again to complete the drink or make another.



Stand

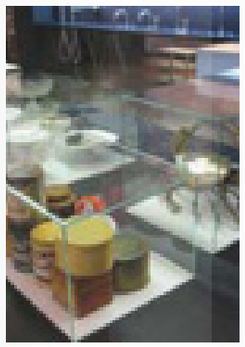
At the moment when I started to draw main blender forms while sitting in the train, I also started to generate ideas for a possible stand. In many product design situations the stand is a final addition to the product and is thus most often based strictly on this final product design. In this assignment I wanted to do it a bit differently by seeing the blender and the stand more as a strong combination that can create a surplus value for the whole product experience. For example when passing Amersfoort by train, my attention was drawn to the coat hook and while imaginary playing around with the shape of this hook I first started to come up with different forms and ideas for stands which slowly transitioned into ideas for interesting combinations of both.

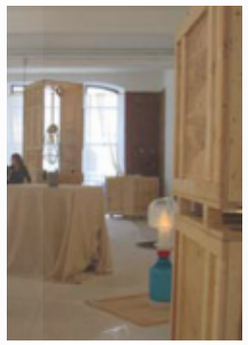
Especially when coming to the final aesthetic direction, I more and more got inspired by interesting and meaningful combinations. Especially when walking around the 'IJburg', I really got a lot of ideas by making associations with different implementations, products, acts of people etc.




My main objective for this stand especially, was to create an overall object which not per definition has to be seen as situated within the kitchen, because one of the main points of view is that you must be able to use the blender anywhere. Although the blender should therefore have all the freedom to be used wherever you want, the stand should create a feeling of a haven in my opinion, a place where the blender can come to rest and charge itself in a safe and clean environment. This also because of some properties and characteristics of the stand do not really lend the stand to have that much freedom. The freedom that the stand still has must not be taken away from it by focusing the context of the product on the use in kitchen alone; the context can also be situated in the living room next to the matching fruit basket or on the desk in the office.
When separated from the stand, the blender alone must be seen as a complete and full product but at the same time the stand has to evoke a feeling that something is missing.

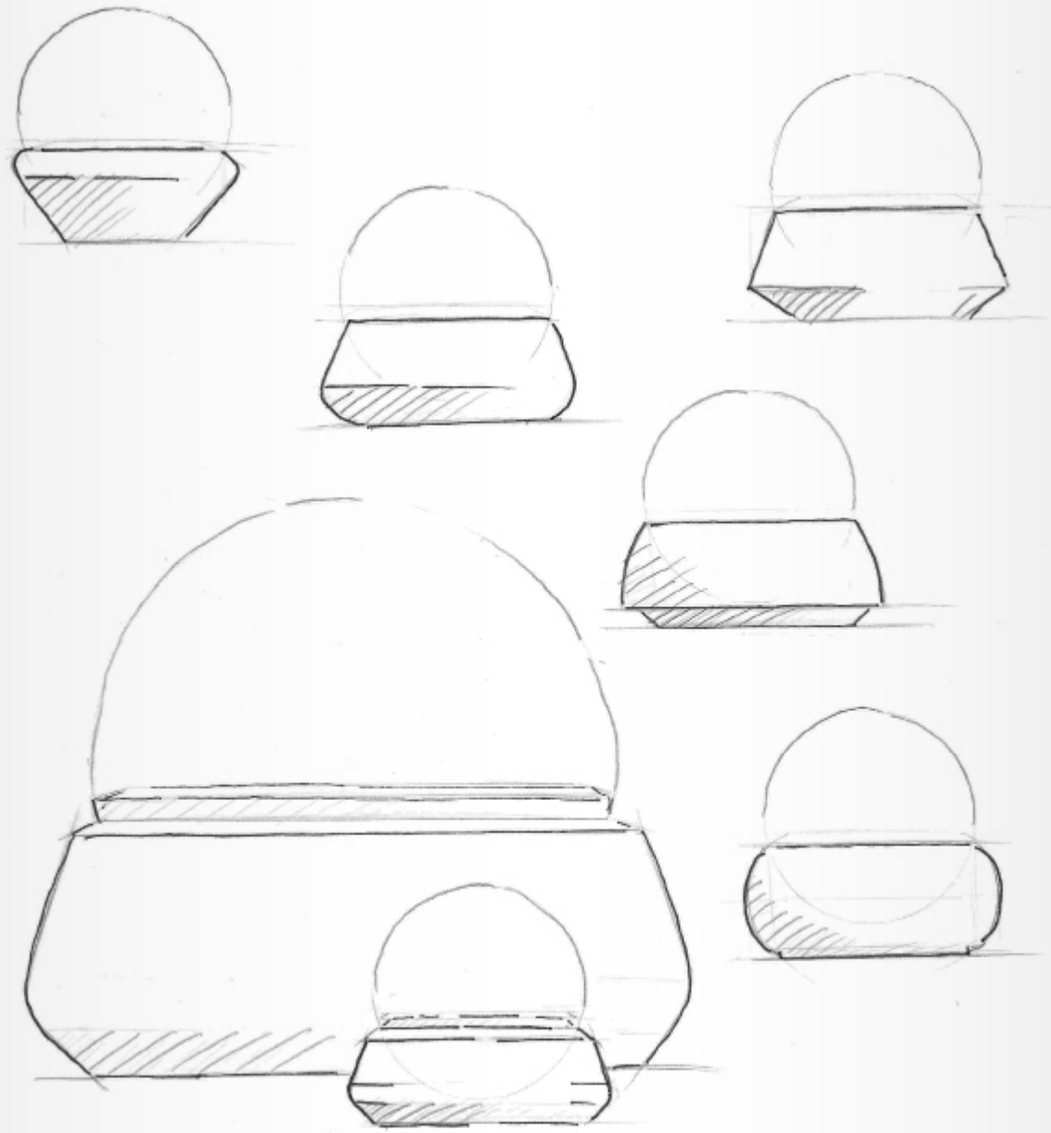
Many inspiring pictures also came back from the Salone del Mobile in Milan for this. One of the inspirations that I translated into the product was the way they presented the products: by stacking them, making it a look like a private collection and presenting them within the boxes they were carefully brought in with. This inspired me to create a kind of glass bell, so on the one hand it could be stacked away safely within a homely environment and on the other it can also be presented as in important private collectors item.

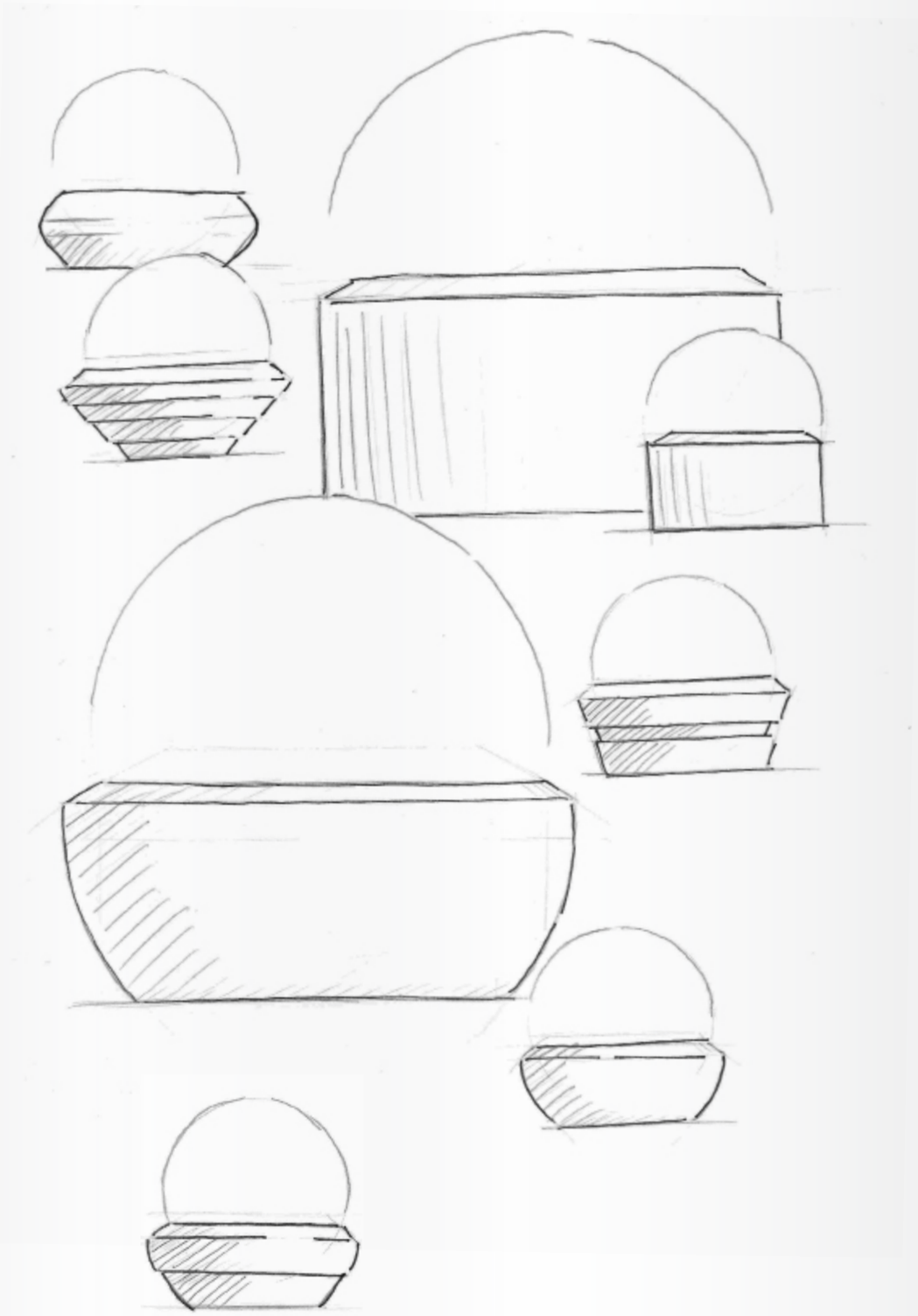


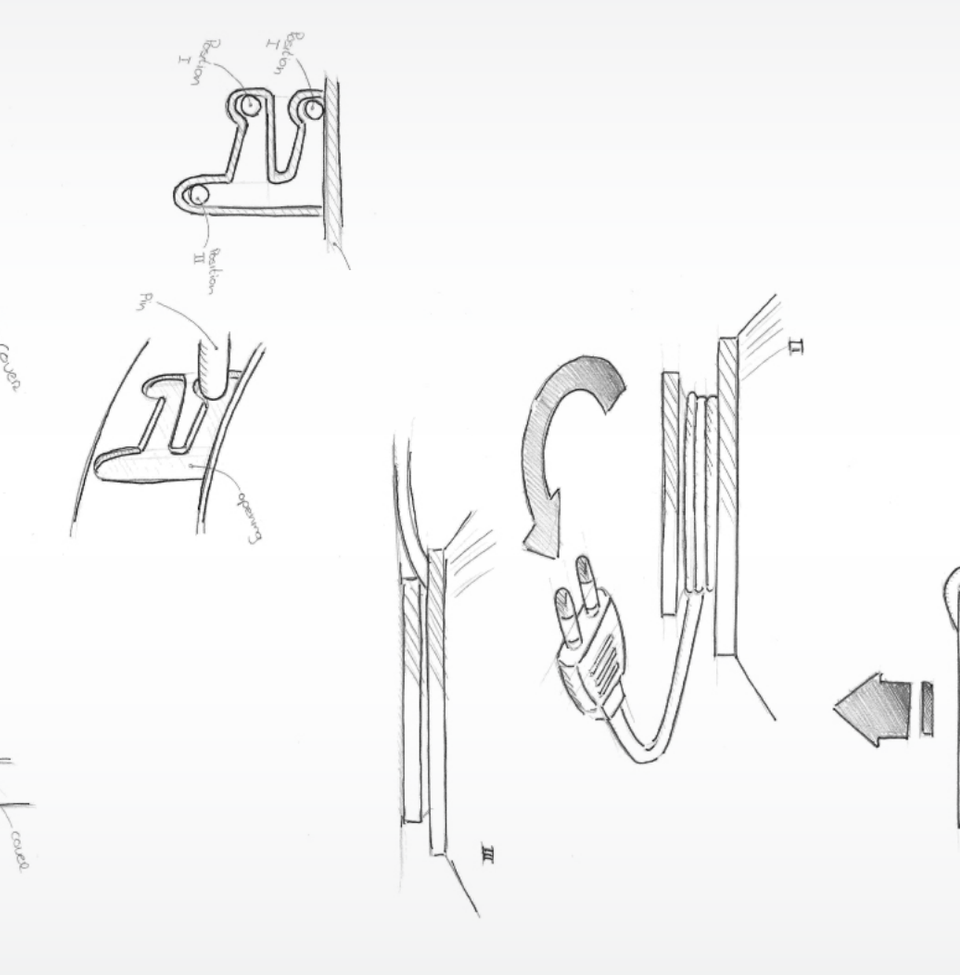



When playing with this idea of creating a glass bell, I also started to play with the bottom plate of this glass bell. This part will collect the drops and superfluity of the Fruit juices and Smoothies that did not come off the ball right away. So the possibility must be created to clean it easily by for example taking this tray out of the rest of the stand. This idea also supports to prevent the danger of people washing the entire stand under the tap and facing the danger of being electrocuted.
By taking it out of the rest of the stand, it could also serve as a waiters tray to hand out the blender in a very hygienic and safe way when offering it to for example (important) guests, or the tray could be combined together with the glass bell to enclose the blender, so the blender can be transported in a safe and clean way over larger distances.

To create the stand I focused on the IPP theme that was most suitable to underline the Product vision and the VPH and cover all these ideas, directions and inspiration. As the eventual main Form and Decoration and pattern of the blender are mainly based on the IPP theme Healthy living I will now want to counterbalance this a bit by focusing more on the IPP theme Trigger the senses so especially the main Form can support the other aspects.






PHILIPS

User Interface & Interaction and Safety

User Interface & Interaction

For a long time, products have been characterized by many switches, buttons, turning wheels etc. These features were physical show offs of the development to create as much functions as possible within a single product.
This important objective did not create the special added user-product interaction relation that was aimed for, but instead it created confusion and a void and so a distance between many users and their product instead. This long unseen interference between the user and their product prevented us from entering into a meaningful relationship with the product. It is now the objective to restore that relation and enhance the quality of the consumer experience, by translating the important and interesting functions into a product that is easy and natural to use and will make the user experience richer and more meaningful.

A number of the interesting interaction points, have to be cached and steered by a possible user interface. CoDA also gives information and direction to create the UI and to realise the product identity here. The use of Philips DA products is intuitive, due to their adaptive and responsive user interface. This is achieved through multi-sensorial and engaging designs.
Whereas Trigger the Senses emphasises the surprising, captivating & magical effect in a low effort and high experience way, Healthy Living steers it in a 'presenting the right options, giving informative feedback and advice when applicable' direction. The best of both IPP's that fit the Product vision and the VPH best will be used and help to realise an interesting user interaction experienced User interface that will contribute to the Product vision.

I first looked at and decided which functions are minimally required for an interesting use of the blender, after which I looked for possible functions and interaction features that really gives the blender a surplus value. Coming up with the functions and possible features that are important for the use of this blender, I started to translate these functions in an easy and natural to use way, sometimes caught and steered by a user interface which has to fall in line with the IPP's

Interesting functions (features) blender:
You should be able to switch the blender on and off,
You should be able to blender,
You should be able to play with different speeds,
You should be able to recall how much power the batteries have, how much Fruit juices & Smoothies it can prepare smoothly,
You must be able to recharge the blender,
Extra:
You must be able to know if the glass is properly attached,
Possible use of lights, to involve and to motivate the user to get more experienced.

Examples:
Reaction on squeezing,
on speech, turning,
shaking left to right,
up and down,
pressure,
thumb movement,
shaking,
program,
etc

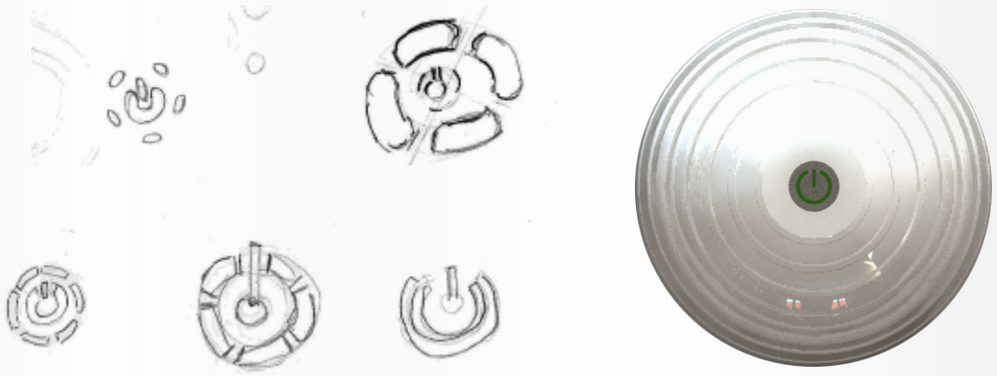
By playing with the different ways to implement these functions I quickly made a decision to keep the interaction between the user and these functions as minimal as possible when blending, so the user will not get distracted by the blender (if unnecessary) and the main focus will stay on the ingredients of the Fruit juice or Smoothie. The only time and reason the attention of the user is addressed is when the power runs out or when the blender is experiencing functional problems. For the only function that has to been reachable during the blending; the possibility to change the speed, they choice has been made to integrate it in a way that it underlines the playful use of the blender without the need to perform extra operations. The other necessary functions are reachable only when you are not blending and these are only visible when they are asked for and/or play a role. It is important to keep and, whenever possible, underline the blender's pure sense and simplicity.

Therefore the UI will be based on a multi-sensorial approach that enriches the users experience. The user interface will only consist out of two small led lights where one is positioned on the top surface of the blender and the other is positioned on the stand.

The led on the stand will automatically go on when the blender is well positioned in the stand and will indicate when the batteries are charging or when they are completely full. This led will automatically go off when the blender is taken out of the stand, when the blender is not positioned right in the stand, or when the power plug is plugged out.

The led on top of the blender is directly based on a multi-sensorial approach and will interact with the user when it is touched. This interaction makes it possible to keep the aesthetics of this UI simple, neutral and only reveal them when the play a role in the interaction [story]. Pressing it in a natural simple pattern will present the right feedback and at the same enrich the user's experiences in a magical, stimulating and inviting emotive way. It can be kept this simple and low effort without slowing down the process, because there are only few functional statuses where to user is interested in.

The functional statuses that are interesting for the user and can be recalled with the use of the UI are all related to power functions of the blender.
For this reason, I based the design of the UI on a symbol of a power button what is known by all the users to be related to power. This constant visible symbol is executed [/produced] in a chrome circular plate, whereas the actual symbol is made out of a transparent green filter so it will light up in a fresh green colour. I made the choice to make this symbol constantly visible by the use of the chrome, so it will indicate where the user can find the UI. The UI is positioned on the flat top side of the blender that will be covered by the hand when the user is blending so at that moment it will not attract the attention. If there is a reason to alert the user the light will go on and a green glow will be guided by the transparent handle layer to reach [the attention of] the user.
The functional statuses that are available when asked for are; is the blender on/off and how many Fruit juices or Smoothies can still be produced. Functional statuses that will be indicated when necessary and alert the user are; the power is almost empty, is the glass properly attached and is the blender experiencing a functional error.



By playing with the different ways to implement these functions I quickly made a decision to keep the interaction between the user and these functions as minimal as possible when blending, so the user will not get distracted by the blender (if unnecessary) and the main focus will stay on the ingredients of the Fruit juice or Smoothie. The only time and reason the attention of the user is addressed is when the power runs out or when the blender is experiencing functional problems. For the only function that has to been reachable during the blending; the possibility to change the speed, they choice has been made to integrate it in a way that it underlines the playful use of the blender without the need to perform extra operations. The other necessary functions are reachable only when you are not blending and these are only visible when they are asked for and/or play a role. It is important to keep and, whenever possible, underline the blender's pure sense and simplicity.

Therefore the UI will be based on a multi-sensorial approach that enriches the users experience. The user interface will only consist out of two small led lights where one is positioned on the top surface of the blender and the other is positioned on the stand.

The led on the stand will automatically go on when the blender is well positioned in the stand and will indicate when the batteries are charging or when they are completely full. This led will automatically go off when the blender is taken out of the stand, when the blender is not positioned right in the stand, or when the power plug is plugged out.

The led on top of the blender is directly based on a multi-sensorial approach and will interact with the user when it is touched. This interaction makes it possible to keep the aesthetics of this UI simple, neutral and only reveal them when the play a role in the interaction [story]. Pressing it in a natural simple pattern will present the right feedback and at the same enrich the user's experiences in a magical, stimulating and inviting emotive way. It can be kept this simple and low effort without slowing down the process, because there are only few functional statuses where to user is interested in.

The functional statuses that are interesting for the user and can be recalled with the use of the UI are all related to power functions of the blender.
For this reason, I based the design of the UI on a symbol of a power button what is known by all the users to be related to power. This constant visible symbol is executed [/produced] in a chrome circular plate, whereas the actual symbol is made out of a transparent green filter so it will light up in a fresh green colour. I made the choice to make this symbol constantly visible by the use of the chrome, so it will indicate where the user can find the UI. The UI is positioned on the flat top side of the blender that will be covered by the hand when the user is blending so at that moment it will not attract the attention. If there is a reason to alert the user the light will go on and a green glow will be guided by the transparent handle layer to reach [the attention of] the user.
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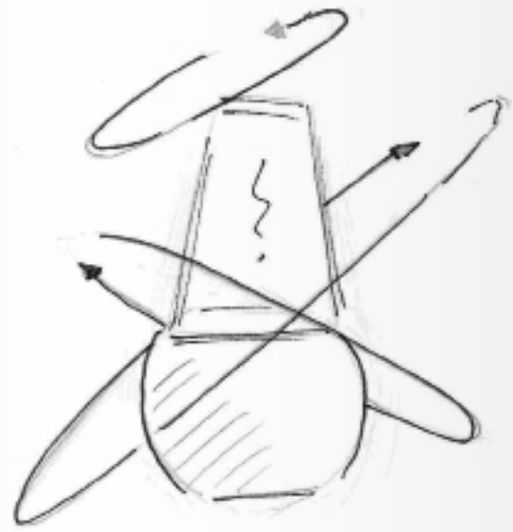
Stand Function	What to do	Interface
- Connected to stand	Put Blender in the stand	Stand light fades on, Blender light extinguish with the same speed.
- Charging	Blender in the stand	Stand light will go on for 5 sec, extinguish slowly goes on for 5 sec, ...
- Charging ready (Full)	Blender in stand	Stand light will stay on

Blender - Function	What to do	Interface
- On	If you press the power button for 3 sec the blender will go on.	The Power button light will light up fast

Blender Function	What to do	Interface
- Off	Tap the power button twice in 3 sec.	The Power button light will go off fast
- How much Fruit Juices & Smoothies can you make	Tap the power button once	The Power button light will extinguish within 2 seconds and slowly go on again during 2 seconds – the number of flashes will show how many smoothies you can make (the last flash can be counted or not since indication is approximate.
- Is the blender properly attached	Press the blender on the glass	The interface light will shine brighter and diminish slowly.
- Inform if the battery is almost empty		The power button light will start to flicker BRIGHTLY and finally go off after 30 seconds of use
- Inform if there is a functional problem		S.O.S. flicker. Bright!

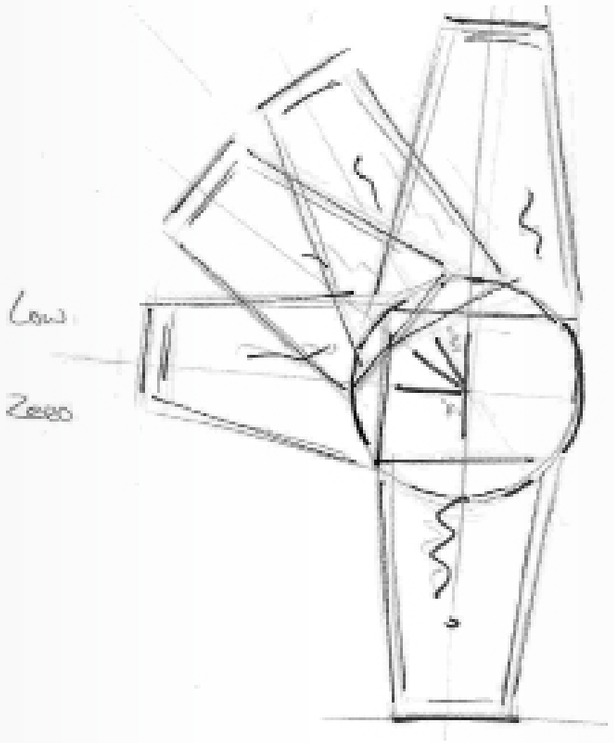
Extra		
- The user made aware to enjoy fruit two times a day	Blender in the stand	The blender light will go on for 60 seconds.
- (Green) light on	Blender in the stand, press the power button for 10 sec.	The blender light will go on.
- (Green) light off	Tap the power button twice in 3 sec.	The blender light will go off.

As mentioned above the only function that has to be reachable during the blending, is the possibility to change the speed. I want to integrate this function and at the same time underline the playful use of the blender without the need to perform extra acts. I looked at the all the acts and movements that have to be executed when preparing a nice fresh Fruit juice or Smoothie.



The turning movement of the blender was found to be the most and very interesting dynamic way to integrate the speed change possibility. When the blender is held at an angle of +90 degrees the blades slowly start to spin and spins fastest when the blender with glass is held at a 180 degree position. There has to be investigated if it is preferable to f.e. divide the angle in a 4 step speed variation or a more gradual speed changeover. To be able easily to diversify the speeds when blending, because of nice integration with the blending proceedings, people learn the advantages of different speeds better and faster and have a better control over the chopping action of the blades. Also because of other positive properties of this blender, the user can better keep track of the ingredients and see when they are ready or if movements are needed.

People will start to gain a better blending experience by trying out different ingredients as a next step; they can now also have more influence on the preparation of each single Fruit juice or Smoothie ingredient. For example, the user can add an apple first and blend it very strongly to juice it up and if managed the user can then add a few strawberries and easily chop them into a few pieces just small enough to drink but still being able to experience the structure. Because the blender allows more freedom in use and a closer experience to the preparation of the ingredients, people [only now] can really improve their blending skills. Users are more motivated to play around and try out how they can make the nicest Fruit juices and Smoothies to present to their friends and family. The integration of speed variations in this way will definately enrich the user's experience and brings the concept even closer to the Product vision.



Savety

Because the blender is a product that uses blades to prepare food, there has to be close attention to the safety norms of this blender. The safety when using the blender in a proper way has to be well guaranteed, so people are reassured and able to blend without fear. Only then people can fully focus on the preparation of the Fruit juice or Smoothie. Although the safety of a normal use of the blender should be guaranteed, you also have to search for and catch as many as possible user failures that can occur by safety features or by taking care of it in f.e. a technical or aesthetic solution.

To make a first start and have a first check on the blender, the blender concept is being send to, among others, a safety engineer and Philips QPL who made first/draft comments. From this safety check and by looking at products in the same handheld appliances direction, some remarks came forward and had to be kept in mind when realizing the Product proposal.

- The working action of the blender, the turning of the blades may not continuously run, without the direct contribution of the user. So when the blender is not touched or released in any kind of situation, the blender may not run.
- Because of the potential hazard, the appliances should only run when the glass is attached.
- When the blender is detached from the glass, the rotating knives must stop within 1 second to avoid injury to hands / fingers.
- 100% sealing of working area to avoid leakage entering the power unit – electric shock if it is mains driven.
- due to sealing issues, use of any glass must be investigated in detail.
- When you want to clean the power unit under the tap it must be 100% watertight and may not be mains driven.

By already involving this first list during the research and realization of the previous disciplines, I was already able to overcome some of the safety remarks given. For example, it will be able to power it on batteries and it will be 100% sealed so it is allowed to clean the blender under the tap.

So only the first two remarks still have to be taken care of. By using components already applied to the blender and adding small switches, both remarks can be overcome with the same safety structure.
To be able to register the turning movement of the ball, so the blender will go on when passing the 90 degree angle, an orientation switch is used. By connecting this switch to the (infrared) switch that registers the use of the UI, and will be activated by the hand palm when holding the blender, the first remark will be overcome.
To combine at least three small switches positioned under the sealing and around the ball to register when a blender is positioned correctly on a glass with this described safety structure you can also to catch this second safety remark.

These switches can also be executed by mechanical components that are directly attached to the motor or blades and can stop or block the turning when the blender is detached from the glass. But in my opinion, the most interesting solution for now should probably be to carry out the blender when a mechanical or electronic error is verified with the presence of a definite error state. This will stop the blender within the required one second by taking into account that a minimum load of battery capacity is needed and the blender needs to stop turning before completely running out of power.

Although these safety norms have to be taken very seriously, to not only create real safety but also a feeling of safety for the user when blending, I do not think this discipline will cause any big problems that can not be overcome.

Material & Finishes, Detail & Color

Although the aesthetic discipline has been executed simultaneously with the other aesthetic disciplines, it is the last discipline in line to finalize the total aesthetic translation from the Product vision to the Product proposal. To set forward and support the line of the aesthetic disciplines already described, I focused again on both IPP themes Trigger the senses and Healthy living to this time base the materials & finishes, details & colors on, to also fit this last aesthetic direction within the identity of the products coming from Philips DAP. Because of the focus on material, finishes and colors, especially this aesthetical direction is directly interacting and playing with the areas of vision, sound, touch, smell, and mind and therefore also very important for this product.

With this last Aesthetic direction I will enumerate and fix aesthetic ideas already mentioned and continue to fine-tune and complete the aesthetics by starting with a description of the overall view of the blender based mainly on the Material & Finishes, Detail & Colors and beginning with the remaining details.
One detail that figuratively has been put throughout the entire product is the round chrome cylindrical pin, which indicates the centre core of the blender and supports the centric movement of the blender when taken out of and put back into the stand but also when connecting it to the glass. This chrome cylindrical pin starts on the bottom of the stand by forming the axis of the wheel which makes it easier to put away the thread that ends in the power plug. While guiding the thread and turning the wheel you can store the thread within the stand and store the plug by folding it back and clasping it into the base. In this state the stand is really compact and easy to store or to move around.
The white color of the hard rubber wheel is used as a base color and returns mainly in the centric core of the blender and stand and in parts that directly stick out of this centric core: the sealing rings, the turning wheel, and the power plug. With the exception of the two parts that have a more supporting role for the blender and the stand and are colored gray; the rubber shield in-between the white rings and the foot of the stand.
This darker gray color should associate with stability and heaviness and especially in combination with the light transparent soft rubber top shield gives a good representation of the top and bottom part of the blender. People can now have a better experience when they keep the blender upside down. The shiny chrome ring divides both and represents the horizon, middle or mirror line and can be seen as a remaining part of the peeled away most outer shell that is still completely present on the stand. Also the logo's show the top and bottom and when the blender is put into the stand, both logo's fall directly behind each other so still only one stays visible.

For the colors mentioned I was mainly led by a low density of colors which is common for products coming from Philips DAP with the Q4 (Q3) level where the blender is positioned and also concentrated on the IPP theme Healthy living. I made use of a whole of three colors, namely white which radiates simplicity, gray to slightly put the product more in-line with other kitchen appliances from Philips and fresh green to support and complete the contemporary and innovative color setting. The choice for the materials is mainly based on supporting the experience, play with the senses and what you see is not really the truth and also to create a smooth surface that is anti-bacterial & self-cleaning.

128 **Disciplines** - Aesthetics - Material & Finishes, Detail & Color

130 **Disciplines** - Aesthetics - Material & Finishes, Detail & Color

Conclusion

After five months of hard work I finalized the last aesthetic discipline and with that I come to the final result a translation of the essence of "the new blender experience concept" and even more, into a product proposal respectable for Philips!

I came to this final product proposal by again going through the steps (of the ViP approach) that are the foundation of the Product vision: "the new blender experience concept". I did this to complete the overall picture but also to be able to extend it grandiosely by bringing it more up to date and bring it more in line with the mission and vision of Philips. By doing so, I formed a nice and really interesting start for the Philips - Value proposition house, which in my opinion could be more than interesting to do for every 'new' project. It brings the process even closer to the Philips brand promise "Sense and Simplicity" by making it possible to really think ahead and think in possibilities instead of solutions to come up with the ultimate sophistication that is preferred by the end-user by really focussing on them and helping them. Starting to create the VPH's by first focussing on the end-user insight already within the ViP approach and in-line with the vision of the pyramid of Maslow, I was able to pick up and take along all people from each level and stimulate them all to reach the higher levels (again) with the final product vision.
This strong Philips minded starting position created an interesting foundation for the completion of five interesting VPH's and so it really helped to combine the two most promising VPH's for Philips into a winning proposition that is designed around you.
This winning and most interesting proposition together with the information and inspiration gathered along the way guided me through the realisation process to come up with the final product proposal. This process was led by the different disciplines, most of them guided by Philips, that overall could be grouped into two directions: a technique and aesthetical research and execution. Although some more researched is advised on the technical execution – the motor and sealing of the blender, I already find it credible to conclude that this product can technically be realised. The execution route for the aesthetics was also really interesting and instructive and eventually formed a strong and beautiful bridge between the product vision, the VPH and the other disciplines and made me able to realise the final product proposal of the experience-centred blender by me in cooperation with Philips.

Besides this realistic blender product proposal that improves the quality of man's domestic and working environment, and promotes Man's self-actualization, this is a step closer from material fulfilment to sensorial experience and then to personal empowerment, and a really interesting process (instructional scheme) is realised that could help Philips to find more winning propositions.

Recommendations

I want to thank you for taking the time to read this report about the realisation of the experience-centred blender product proposal. I am really curious about your reactions and comments and also if you have questions, please feel more than free to contact me! Before I really conclude the report, I would like to phrase some last recommendations and comments left, especially focused on when in the future the product proposal will be taken up by Philips.

Technical development
If there will be a next technical development of the experience-centred blender, I have to recommend the sealing between the blender and the glass as an important point of focus. Although I fulfilled research on the sealing and the results were credible to conclude that the sealing already works really well, tests still have to be executed to fine-tune and to perfect it to tackle the (possible) sceptical feelings of people and to even more create the "WOW" effect. A direction can be chosen to enclose a standard special Philips glass but this will certainly violate a lot of the idea behind and the magic of the concept.

For the search for an interesting motor, the technical knowledge available within the product direction of the shavers could help to create really interesting results. They are specialised in really small motors, waterproof products, blades, etc.

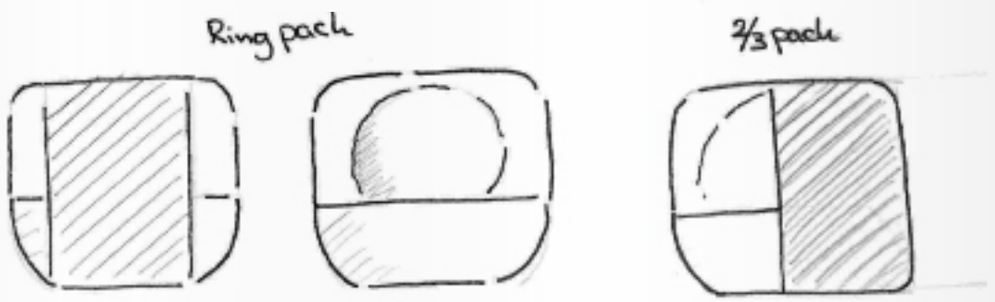
Future knowledge for this concept could also be found and gained from the professional bartenders who work at Boston shakers. Although this way of connecting is not yet that interesting, the bartenders have a lot of knowledge of how to prepare drinks in a somewhat comparable way. For example, chilling the ingredients and mixing them, using ingredients like cream, milk, juice, to be forced together, and using the glass part to involve the guests.

Marketing
When working on the ViP deconstruction phase and when looking at the competitors environment, I was confronted by the number of products that are already available within this product category. Although this was alarming when starting with the project, I think the final product proposal is strong enough to stay upright and to do well within this product category. I think you can make a comparison between the new experience-based blender and a hand held vacuum cleaner. Many people who are focused on keeping their house clean are buying this product next to their vacuum cleaner, to be able to clean something quickly and well without a lot of fuss. When buying a really good hand held vacuum cleaner (with maybe a handle) it can easily take over the normal vacuum cleaner and when known in the market, people will rather go for the hand held vacuum cleaner than the big one with its disadvantages. Both ways the blender can be seen as a relevant product: to stand beside the big blender and also as a replacement. The new experience-based blender has in both directions advantages on many aspects, f.e. on the environmental. (Please make sure that it will not only be seen as a nice extra gadget or gimmick).
Because of this big range of products within this product category, it is also interesting to maybe make a rearrangement of products to make the products that are put out there even stronger and more relevant.

When focusing on the north European market segment, it is also interesting to consider to involve offices. Employees are already supported more and more to live healthier by f.e. free gym, receiving free fruit at one's disposal or by motivating employees to come to work by bicycle etc. By offering the experience-based blender next to the coffee machine you can create an interesting healthy habit and culture. It also stimulates to use the blender more than just the average three times a day at breakfast, lunch or dinner time.

By underlining the pick and mix idea behind the blender (f.e. within the office buildings) you can also put up a partnership with a fruit wholesaler. The danger here is the time between cutting the fruit and consuming the fruit which can decrease the healthiness of the fruit, so the time has to be minimized. This increase of healthiness is one of the big advantages of the new blender and pre-prepared Fruit drinks and Smoothies.

Media
The target audience on which the blender is focused on, have the highest number of computers, radios, newspapers, magazines, internet and are going to the cinema most often, so these are interesting advertising media. Especially magazines with product reviews, retail internet websites, manufacturer websites and other websites are media were they base their purchase decisions on. But also, to a lesser degree, product boxes and more so demonstrations of products are an interesting directions to convince the consumers. Maybe the Value Proposition House Social commerce could be interesting to set it in a marketing direction (for example introducing it in bars or ice salons or snack corners).



Although the focus of the product was aimed at Fruit juice and Smoothies, also other drinks and foods can be prepared, like f.e. dressings. For hot drinks like coffee and hot chocolate with special ingredients and little amounts of soup. research on f.e. the material is advised.

A blender accessory line can be developed with: replacement parts, cutting boards, fruit baskets (long ingredient boards in the kitchen, ice-cream making blades, glasses, ingredient balls, etc.

Environment
Maybe to involve the user even more within environmental questions, you can put the ingredients the blender is made of on the minimal packaging box.The packaging box should use the structure of the product so less material is needed.

Because it is a smaller product with no extra big components that have to be made and cleaned, it can be more environmentally friendly.

Annexes

Design & Emotion

Course name: Design & Emotion
Year of Study: 2007
Course language: Dutch
Course description: Introduction of the course

The importance of emotional benefits has substantially increased over the past decades. This course, 'Design & Emotion', concentrates on visualizing expectations/ values of a group of people by product appearance. How can a product be (re)designed to match with the tastes, customs, etc. of a certain group of people, in order to enhance the experience and fulfil the expectations of the customer.

Content
'Design & Emotion' imitates a conference with exhibition. The course has subsequently two parallel and interacting approaches: a research and a product design approach. These two parallel approaches keep interacting. In research, the customer, cultural and/ or experience aspects are analyzed and translated into design and styling criteria. In the design and styling process, new criteria for research emerge. In line with the conference imitation, there will be a 'call for papers' and a 'submission of abstracts' and at the end the submission of a paper. In line with the design process, there will be group evaluation meetings and one workshop with professional designers in which concept ideas are discussed and chosen for further detailing. At the end, in line with the exhibition, there will be a product model clarified by a visualizing report. Final work presentations take place during the student conference with the name: 'Conference and Exhibition on Design & Expectation'.
During this process in the course, students have to analyze for whom they are designing; what are the habits of that group of people or culture; what is their behavior towards products; what is their taste; what are their preferences, etc?

Form of education
Lectures, excursions, workshop with professional designers (obligatory), several progress meetings (obligatory), individual research and individual concept development, practicum for guided high quality prototype building.
[Utwente (2008). VIST Collected at 30 September 2008 from http://webapps.utwente.nl/vist/en/vistservlet]

Servable guest lectures
-Design approach Philips:
Heleen Engelen - Design Account Director Domestic Appliances
Don Thackary – Creative Director Innovation Design
Philips Amsterdam - Domestic Appliances and personal care
Optional products; Iron, Blender, Vacuum cleaner, Coffee machine
- Design & Experience:
Paul Hekkert - Professor of Form Theory – VIP Approach
Technical University of Delft – Industrial Design Engineering
-Design & Experience
Thomas van Rompay - Assistant Professor
University of Twente - Behavioural Sciences

Results:
-Model
-Presentation
-Visual Report
-Paper

'THE NEW BLENDING EXPERIENCE: DESIGNING A BLENDER FROM AN INTERACTION/EXPERIENCE-CENTRED APPROACH (USING THE EXTENDED VIP APPROACH) - B.A.J.H.Abbink'
Abstract
In a health conscious society, the intake of fruit and vegetables becomes more important every day. An important trend that connects to this is the consuming of fruit and vegetable juices that are available ready-made in shops. With this development, the 75-year-old trend of blending fruit and vegetables subsides more and more.
A new blender experience will have to change this. The development of a new blender system nowadays does not just focus on the functionalities and blending performance, but also looks at the factors: states, developments, trends, principles and aesthetics – in connection with all senses.
In the visual report & paper*, experience and emotion will be the starting point for a new blending system. To create a new blender (experience), the extended ViP approach will be used. The extended ViP approach is an interaction-centered design approach, Vision in Product design (ViP) combined with Probes and the Philips design tools.
I will apply the extended ViP approach to the current blender after which I will set up a new context and interaction for a new blender (experience) at the hand of the deconstruction phase. This new context and interaction will (also) be shaped by participants who will provide the designer with information by using Probes developed by the designer. From this new context and interaction, a user blender experience will be shaped and designed.

*You can find and read more about the D&E completed assignment in the visual report – 'Philips Blender', and the paper - 'the new blender experience'. The censored version of the paper is available on www.Bert-Abbink.nl > design > design & emotion, for the uncensored Paper and Visual report, please contact me.

UT

The University of Twente is an entrepreneurial research university. It was founded in 1961 and offers education and research in areas ranging from public policy studies and applied physics to biomedical technology. The UT is the Netherlands' only campus university. [Utwente (2008) Collected at 30 September 2008 from http://www.utwente.nl/]

UT - INDUSTRIAL DESIGN
The study Industrial design in Twente works with design aimed project-education. This means that in every phase of your study, a project is the central point, courses will support the information and capabilities necessary to work on the project. With this, teamwork is a very important objective because you will need the experience to be able to work with specialists later on. [Utwente (2008) Collected at 30 September 2008 from http://www.utwente.nl/]

It is expected from an industrial designer that s/he is able to involve new kinds of technological opportunities.
Beside this, a student studying at the University of Twente is also taught to look further. A product has to sell well, has to look attractive, has to function well, has to be producable and has to take the user in account. The interaction between the user and the product is very important. When the interaction between the user and the product is known, it is possible to make a design directed at the situation.

PHILIPS

Our mission:
Philips has reinvented itself many times, but through it all our core, the soul of our company, remained intact. That is because it was part of our company since its inception in 1891. It is the passion to…"Improve the quality of people's lives through timely introduction of meaningful innovations."

Our Vision:
In a world where complexity increasingly touches every aspect of our daily lives, we will lead in bringing sense and simplicity to people.

PHILIPS

Our Values:
Delight Customers
We anticipate and exceed customer expectations
We demonstrate Passion for Philips and "sense and simplicity"
We create superior customer experiences, based on deep insights
We act as One Philips ambassadors all the time

Deliver great results
We continually raise the bar
We play to win big and always set ambitious targets
We challenge the status quo and experiment with new ways
We take clear decisions and implement with speed and discipline

Develop people
We get the best from ourselves and each other
We attract the best players to create strong and diverse teams
We take risks by giving people stretch assignments to accelerate their development
We personally invest significant time to coach and recognize people

Depend on each other
We deliver more value by working as One Philips
We think as One Philips and act as owners
We trust and empower each other to contribute our best
We team up and allocate resources to the most promising opportunities

Our brand Promise
We empower people to benefit from innovation by delivering on our brand promise of "sense and simplicity"
This brand promise encapsulates our commitment to deliver solutions that are advanced, easy to use, and designed around the needs of all our users.

Vision 2010
Philips is on a journey to transform itself into a truly market driven and people centric company. This involves a strategy that aims to grow the company further in the areas of Healthcare, Lighting and Consumer Lifestyle. As part of its "Vision 2010" strategy, Philips has simplified its business structure to align with this strategy by creating three core sectors as per January 1, 2008: Philips Healthcare, Philips Lighting, and Philips Consumer Lifestyle.
-Vision 2010 aims to fuel growth through sharpened strategies for Healthcare and Lighting, as well as an integrated approach for Consumer Lifestyle.
-Vision 2010 positions Philips as a market-driven company, people centric with a structure that matches the needs of our customer base. Vision 2010 confirms we're [/we are] a company focusing on three market sectors: Healthcare, Lighting and Consumer Lifestyle.
-As a result of Vision 2010, Philips has announced it expects higher levels of operating profitability. By 2010, Philips expects to more than double its EBITA per share compared to the level expected in 2007.

Strategic Actions
We will reach our objectives by executing on the following strategic actions:
1 We are a people-centric company that organizes around customers and markets
2 We invest in a strong brand and consistently deliver on our brand promise of "sense and simplicity", in our actions, products and services
3 We deliver innovation by investing in world class strengths in end-user insights, technology, design and superior supplier networks
4 We develop our people's leadership, talent and engagement and align ourselves with high performance benchmarks

5 We invest in high growth and profitable businesses and emerging geographies to achieve market leadership positions
6 We are committed to sustainability and focus on making the difference in efficient energy use
7 We drive operational excellence and quality to best in class levels, allowing us the above mentioned strategic investments in our businesses. [http://www.philips.com/about/company/missionandvisionvaluesandstrategy/index.page]

Businesses
Healthcare
Lighting
Consumer Lifestyle
The Consumer Lifestyle sector employs approximately 25,000 people in 49 countries and operates in the business areas Connected Displays, Video & Multimedia, Audio & Multimedia, Home Networks, Peripherals & Accessories, Domestic Appliances, Shaving & Beauty and Health & Wellness. It runs manufacturing operations in the Netherlands, Belgium, France, Hungary, Austria, Poland, the USA, Brazil, Argentina, Mexico, China and Singapore. [http://www.philips.com/about/company/businesses/index.page]

Me

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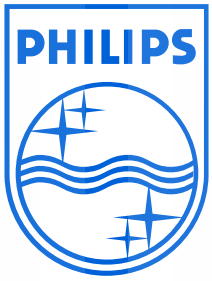
www.BertAbbink.nl


PHILIPS