

10 APPENDICES

01.01 Brunotti website

BRUNOTTI INTRODUCES
INNOVATIVE INSULATION: CLO-I

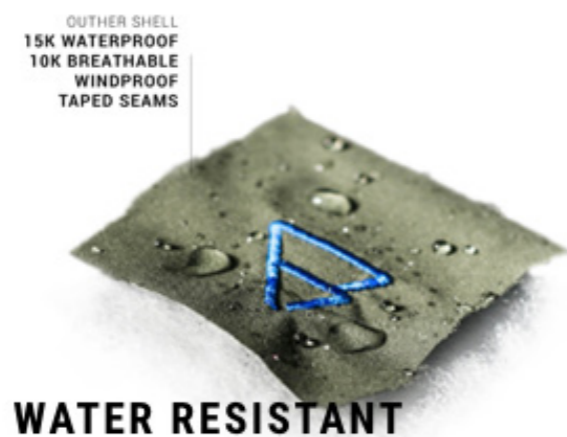
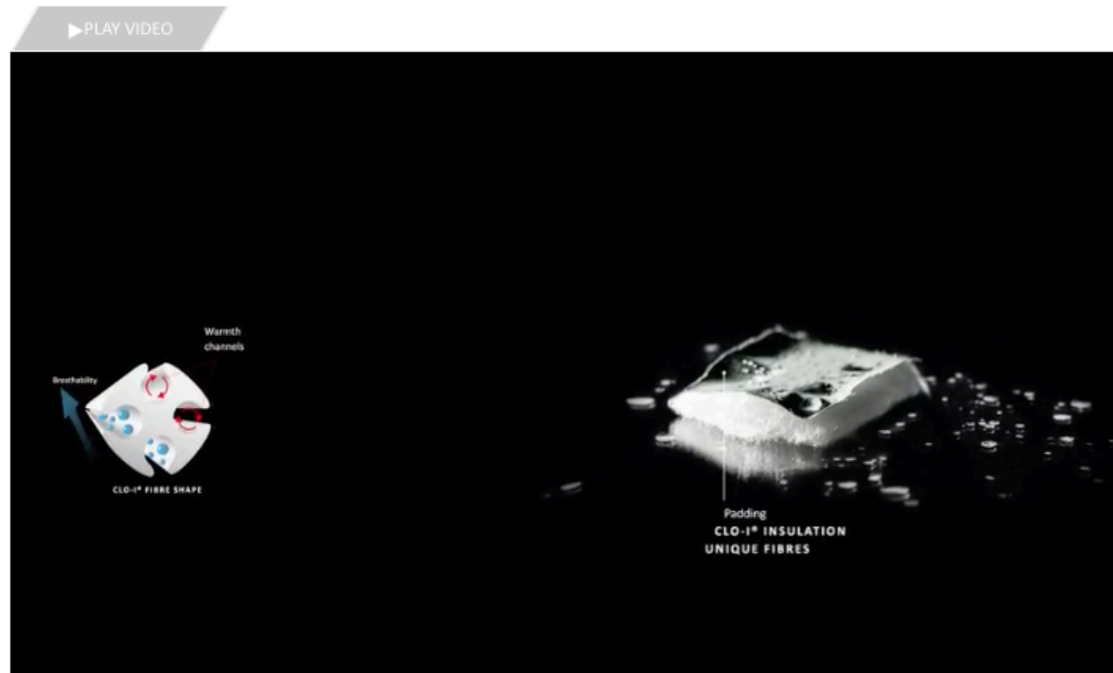


Figure 85. Impression of Brunotti's (n.d.) innovative communication character online.

01.02 Brunotti brochure (company profile)



Figure 86. Impression of Brunotti's (n.d.) innovative communication character offline.

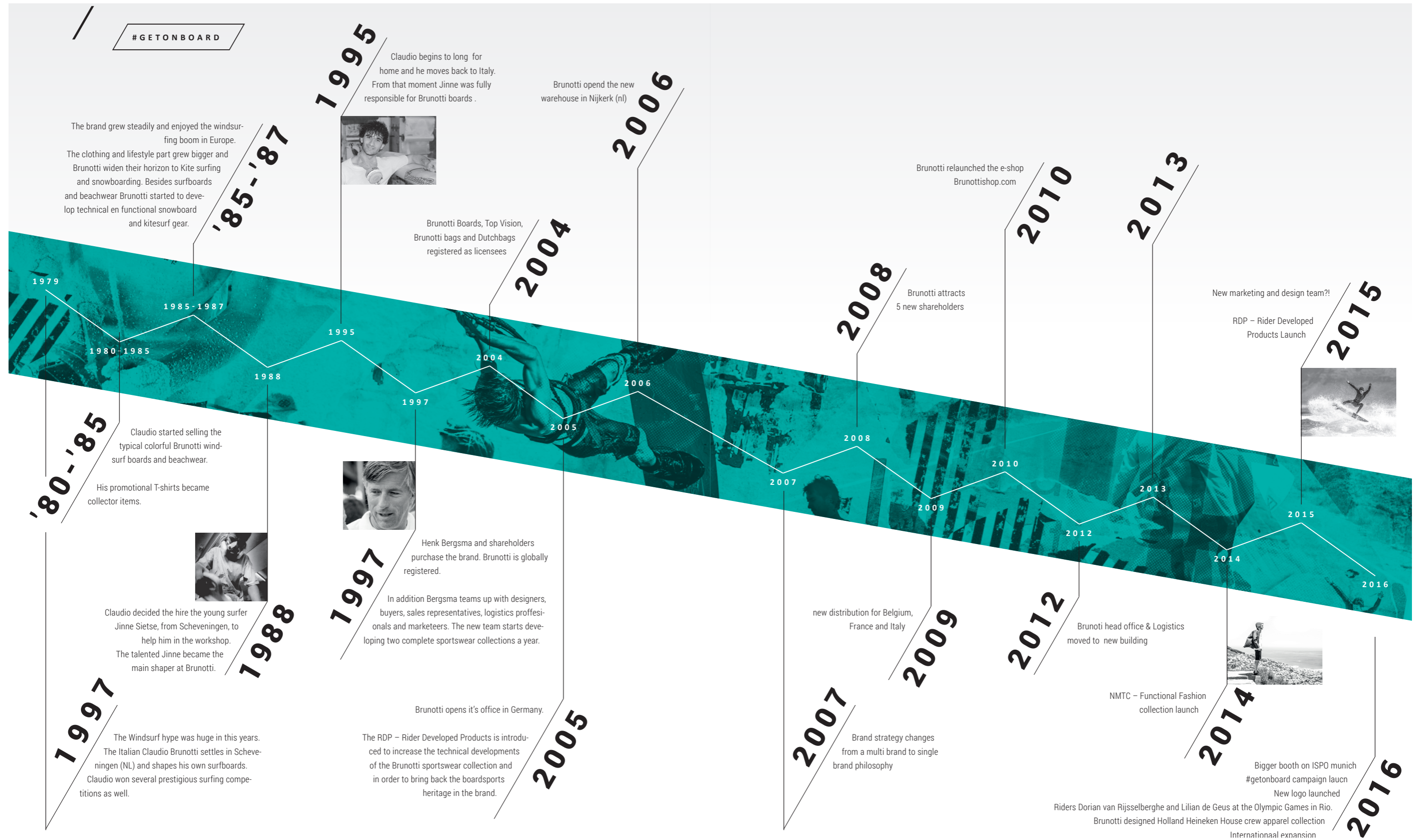
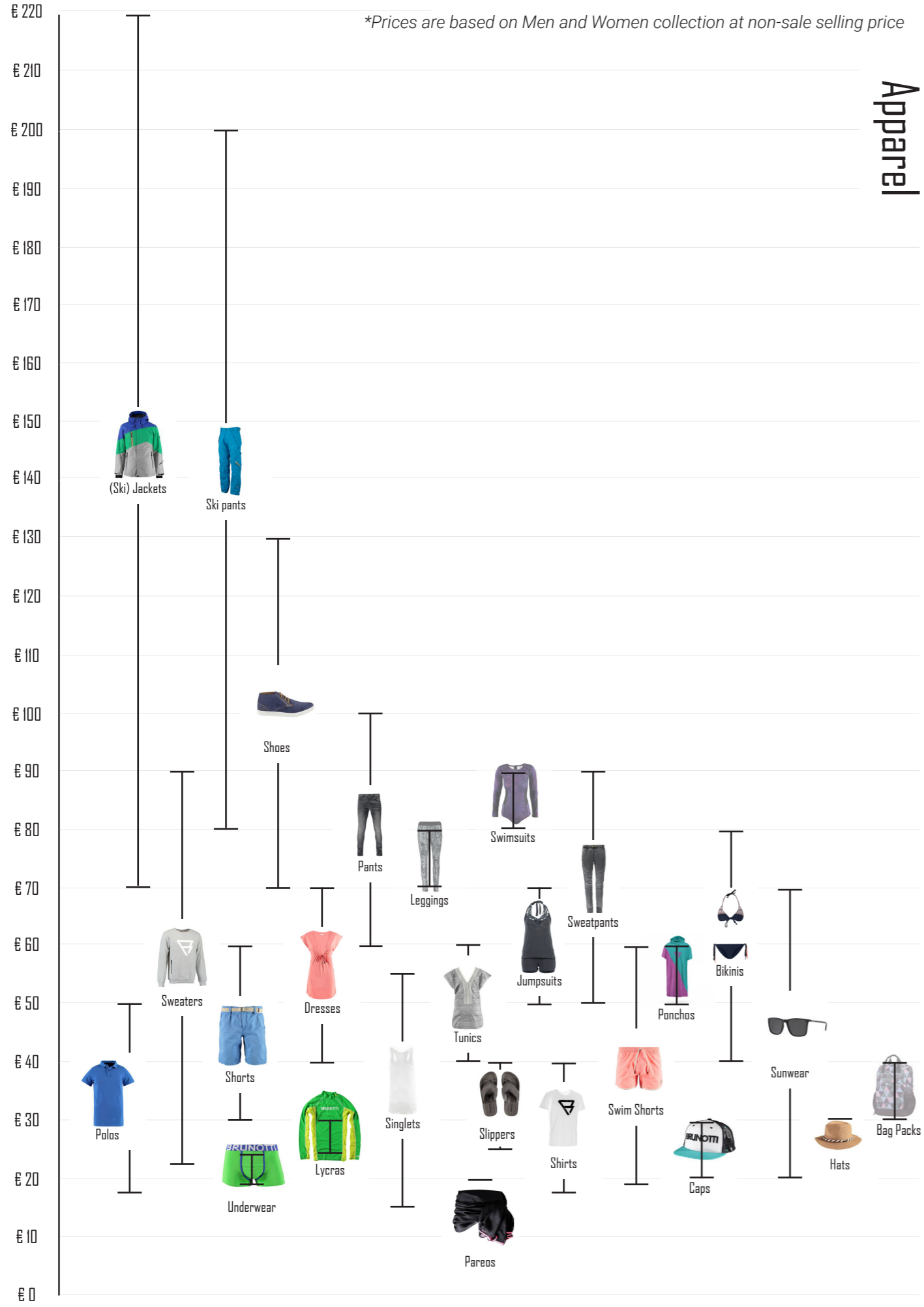


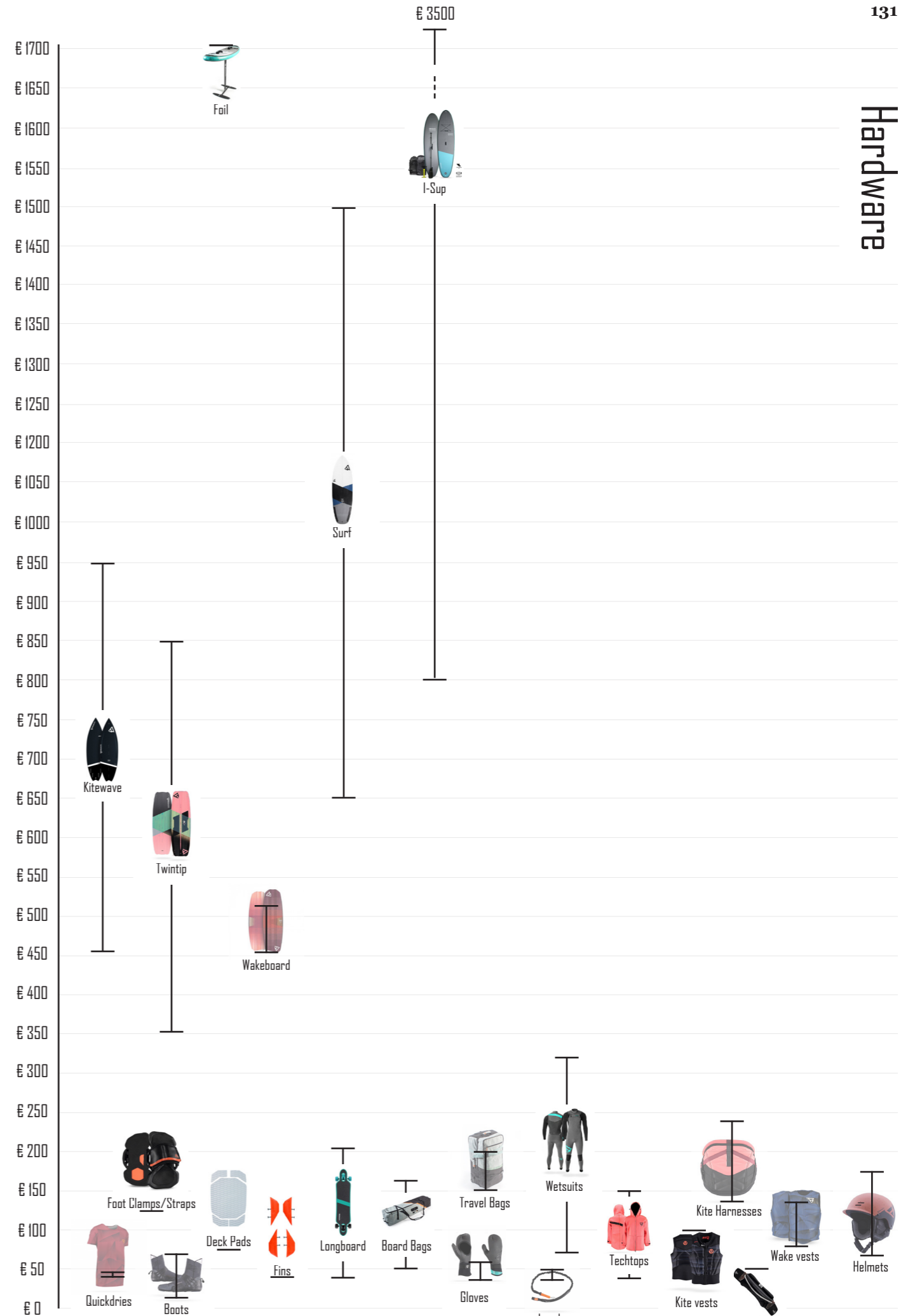
Figure 87. Brunotti history timeline (Brunotti, 2017)

APPENDIX 03 // PRODUCT PRICE* RANGES

*Prices are based on Men and Women collection at non-sale selling price



Apparel

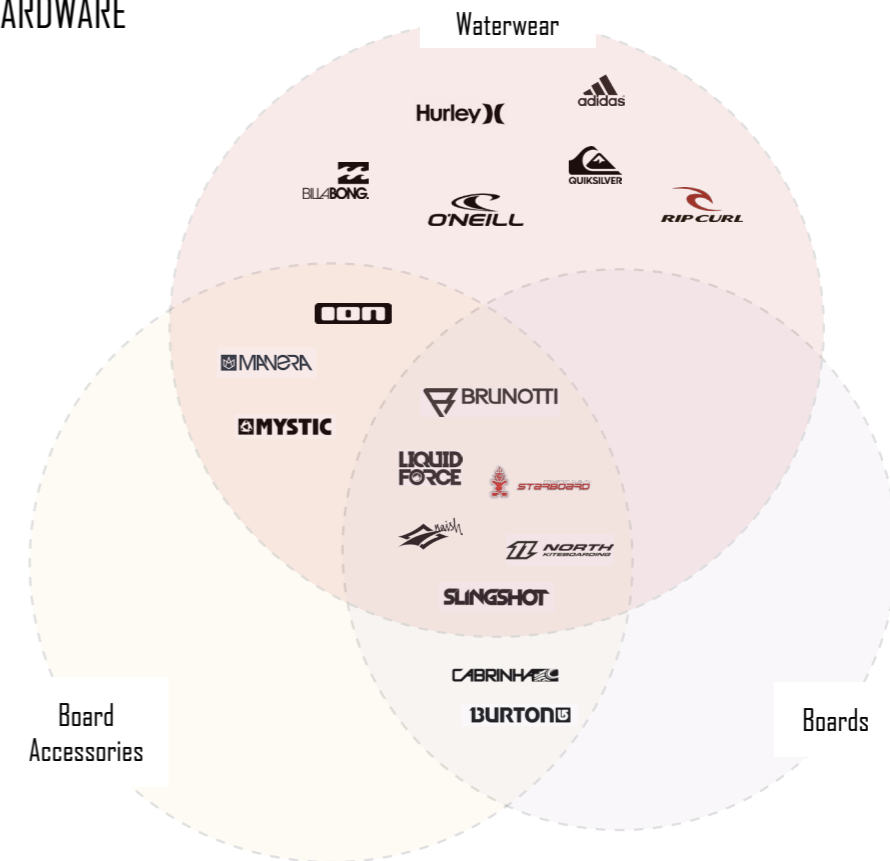


Hardware

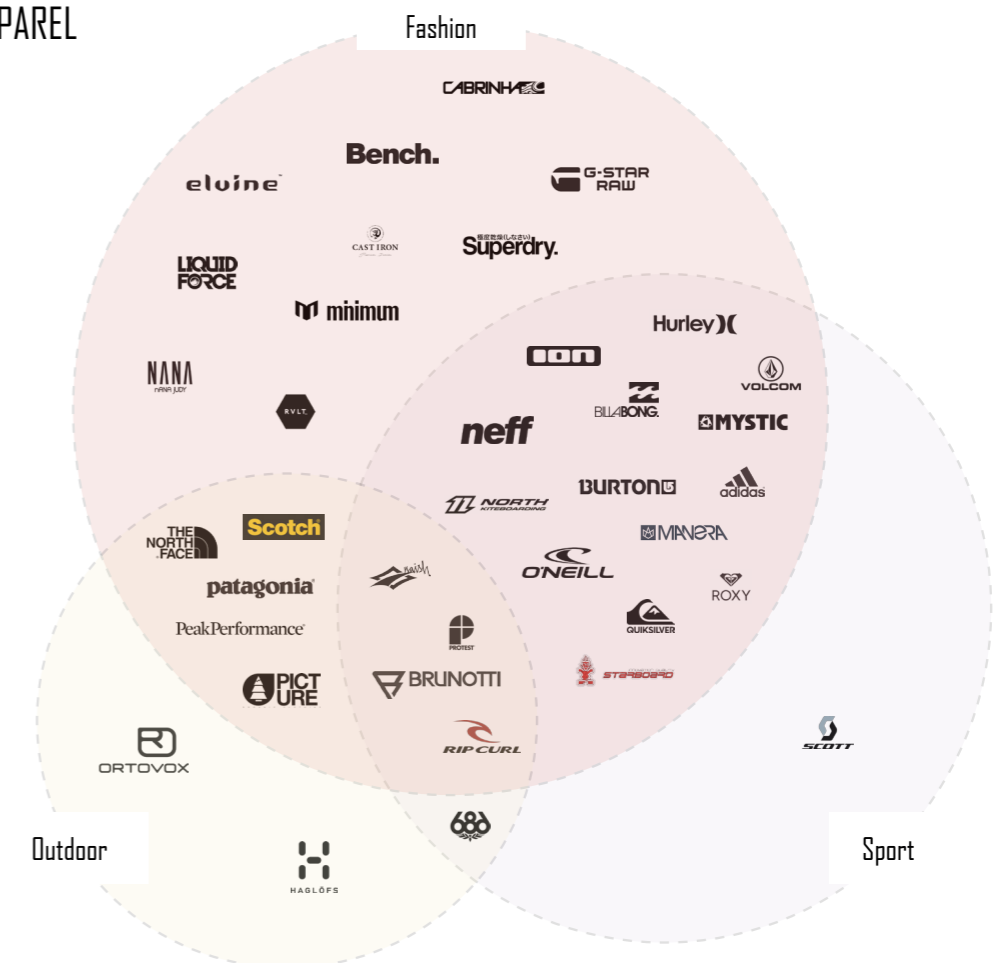
APPENDIX 04 // BRUNOTTI'S CLOSEST COMPETITORS PER PRODUCT CATEGORY

	// HARDWARE			// APPAREL		
	Boards	Board Accessories	Waterwear	Outdoor	Sport	Fashion
BRUNOTTI	•	•	•	•	•	•
688				•	•	
adidas			•		•	•
Bench.						•
BILLABONG			•		•	•
BURTON	•	•	•		•	•
CABRINHA	•	•				•
CAST IRON						•
eloine						•
G-STAR RAW						•
HAGLOFS				•		
Hurley			•		•	•
ION		•			•	•
LIQUID FORCE	•	•	•			•
MINERA		•	•		•	•
minimum						•
MYSTIC		•	•		•	•
ORNO	•	•	•		•	•
NANA						•
neff					•	•
NORTH	•	•	•		•	•
ONEILL			•		•	•
ORTOVOX				•		
patagonia				•		•
PeakPerformance				•		•
PICTURE				•		•
PIRELLA				•	•	•
QUIKSILVER			•		•	•
RIP CURL			•	•	•	•
ROXY					•	•
RYLT						•
Scotch				•		•
SCOTT					•	
SLINGSHOT	•	•	•			
STARBOARD	•	•	•		•	•
Superdry.					•	•
THE NORTH FACE				•		•
VOLCOM					•	•

// HARDWARE



// APPAREL



APPENDIX 05 // BRAND PERCEPTION RESEARCH RESULTS

“ *To change a brand perception, you must first know what it is. Not what you think it is, because your opinion doesn't really matter.* **”**

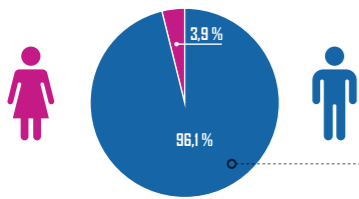
Jankowski, 2015



Hardware Respondent Demographics

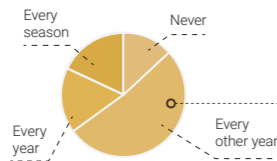
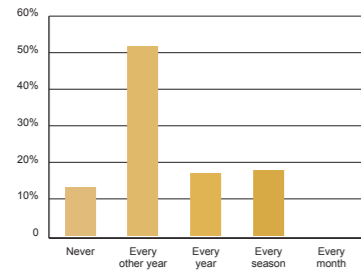
Number of Respondents (N): 129
Sources: Water- boardsport forums

Gender



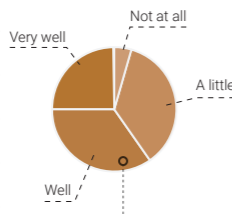
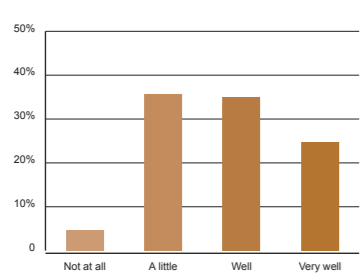
Brunotti Products

How often do they buy them?



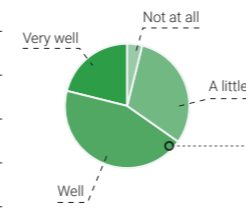
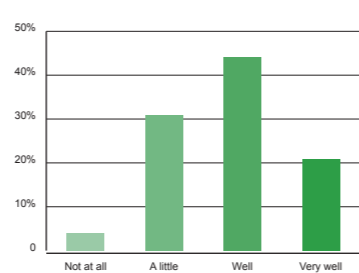
Hardware Products

How well do they know them?



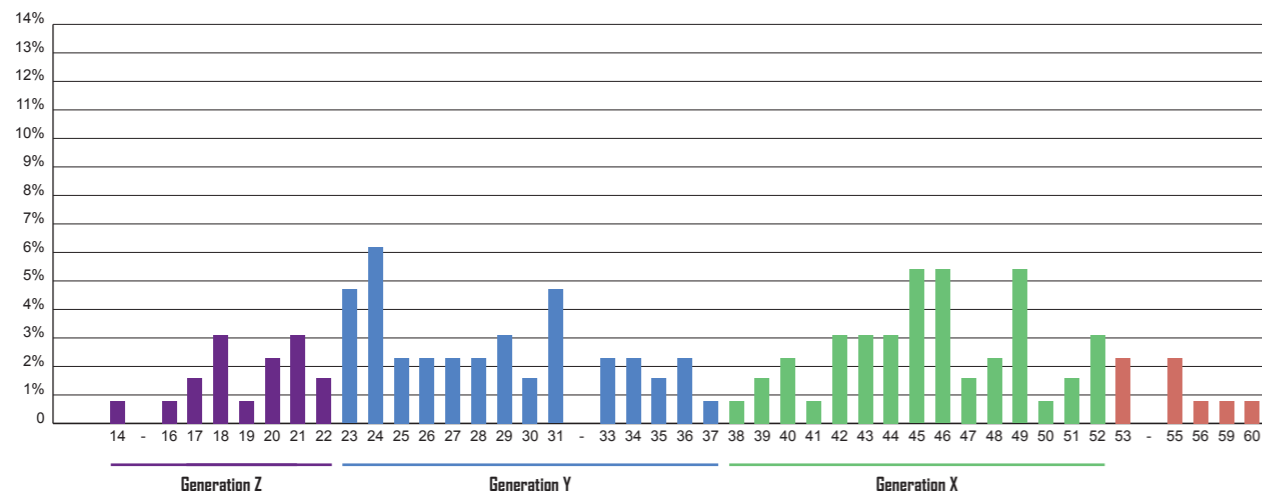
Apparel Products

How well do they know them?



Age Distribution

How old are they?



Name Awareness

Have they heard of the brand Brunotti?

1.



2.

Location

Hardware respondents mainly live in Zuid-Holland and Noord-Holland. This might be explained by a combination of high population density of the provinces (CBS, n.d.) and their sea borders.

3.

Gender

Hardware respondent group (market) is dominated by men. Men are clearly more active on water boardsport forums. This makes it impossible to compare genders between groups.

4.

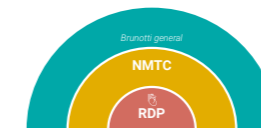
Buying Intensity

Most Hardware respondents buy Brunotti products every other year and none do so every month.

5.

Product Familiarity

Hardware respondents know Brunotti's Hardware products as well as they know Brunotti's Apparel products. As board sport practitioners that know all Brunotti's products, they are truly Brunotti's core customers.



6.

Generations

The age distribution implies that the hardware respondent group covers all three target groups, as described by Brunotti: RDP, NMTC and Brunotti general. The group is divided into three generations.

Definitions

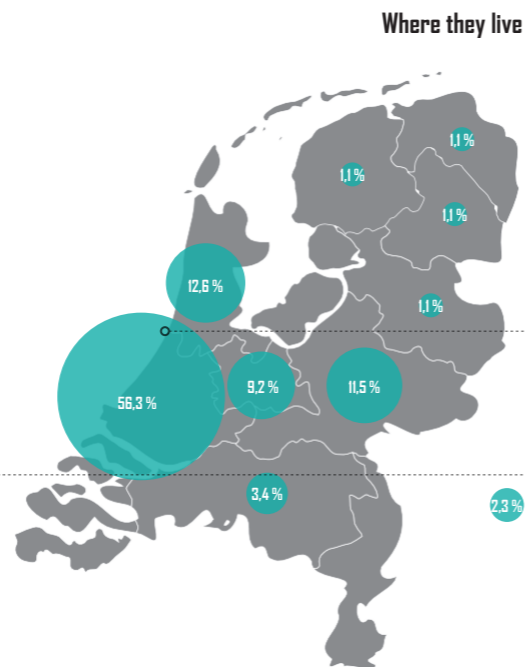
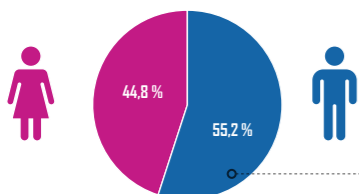
- Not at all:** I did not know Brunotti develops these kind of products.
- A little:** I know of their existence, but never got in touch with them.
- Well:** I know of their existence and got in touch with them.
- Very well:** I know of their existence and have used them.



Apparel Respondent Demographics

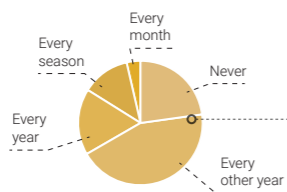
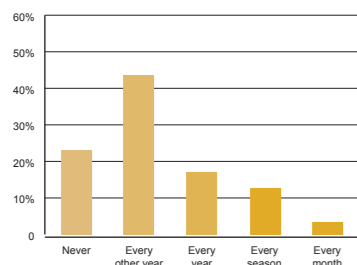
Number of Respondents (N): 87
Sources: Newsletter + Social Media

Gender



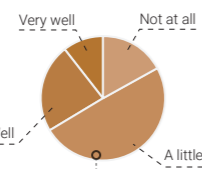
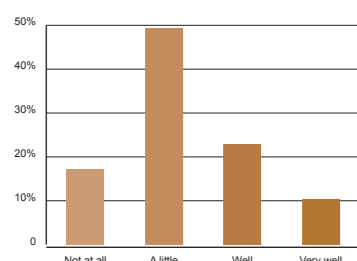
Brunotti Products

How often do they buy them?



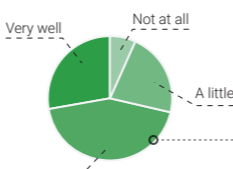
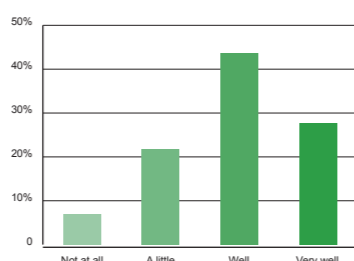
Hardware Products

How well do they know them?



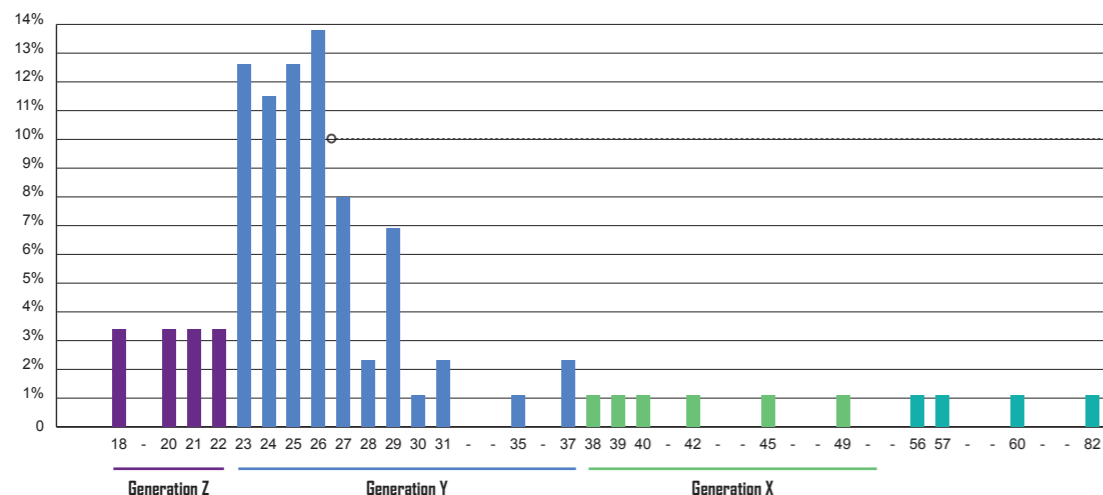
Apparel Products

How well do they know them?



Age Distribution

How old are they?



Name Awareness

Have they heard of the brand Brunotti?

7.



8.

Location

The Apparel respondent group is concentrated in Zuid-Holland. This can be explained by the use of my own social media channels to get extra responses, due to a low response rate via Brunotti's newsletter.

9.

Gender

The Apparel respondent group is close to equally divided into male and female respondents.

10.

Buying Intensity

Like the Hardware respondents, most Apparel respondents buy Brunotti products every other year. Though, the percentage of respondents that never buys Brunotti products is bigger than in the Hardware group. An explanation may be that the Apparel respondent is much less similar to Brunotti core target groups.

Definitions

Not at all: I did not know Brunotti develops these kind of products.
A little: I know of their existence, but never got in touch with them.
Well: I know of their existence and got in touch with them.
Very well: I know of their existence and have used them.

11.

Product Familiarity

As expected, Apparel respondents know Brunotti's Apparel products better than Brunotti's Hardware products. Only 10% of the Apparel respondents has ever used a Brunotti Hardware product and 33% got in touch with them. 77% of the Apparel customers, on the other hand, have been in touch with Brunotti's Apparel products.

12.

Generations

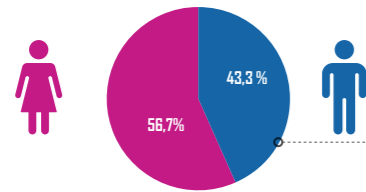
The Apparel respondent group mainly consists of generation Y respondents. Again, this can be explained by the use of my own social media channels to get extra responses.



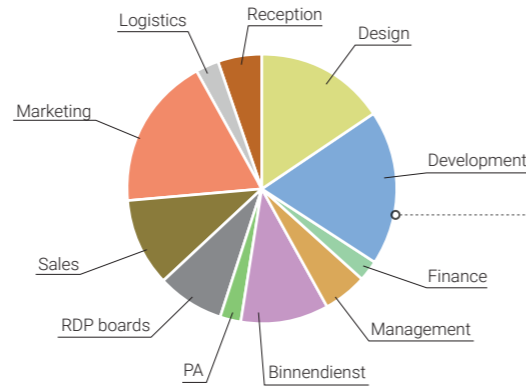
Employee Respondent Demographics

Number of Respondents (N): 30
Sources: Internal mailing

Gender

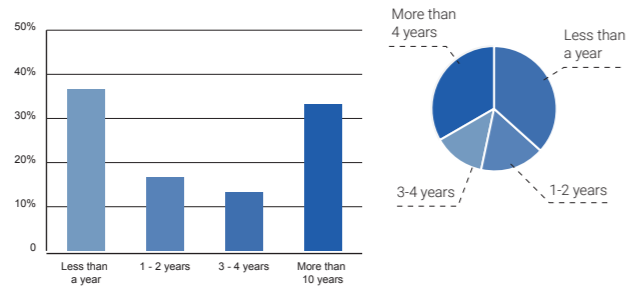


Departments



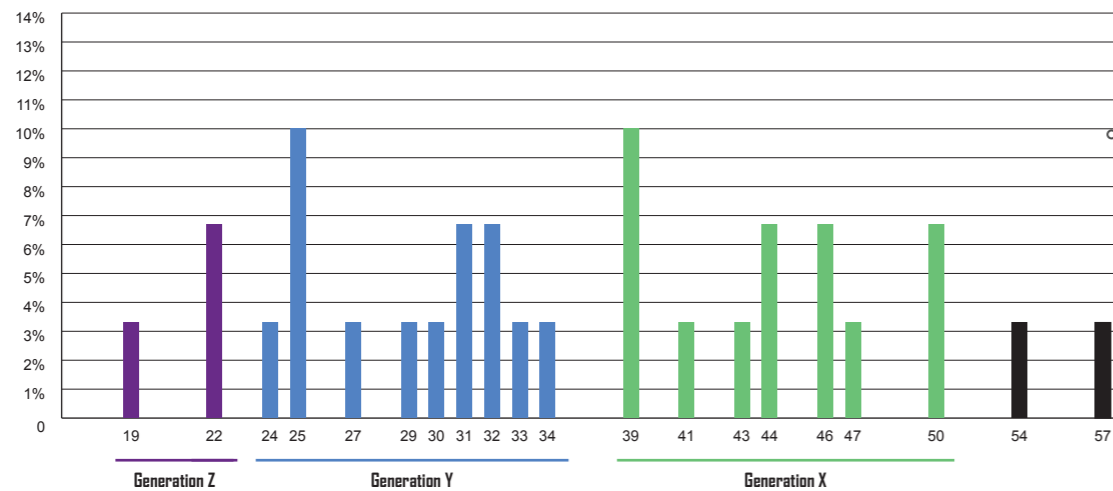
Employed

For how long do they work at Brunnoti?



Age Distribution

How old are they?



13. Number of Responses

After two internal mailings, 30 employees have filled in the survey. This number is low, from a statistical point of view. Their answers merely serve as guidance for painting a picture of the desired situation, but still it is important to keep this low number of responses in mind.

16. Gender

The Employee respondent group is close to equally divided into male and female respondents.

14. Departments

The Employee respondent group consists of respondents from 11 different departments, giving a good idea of the overall perception.

15. Generations

The Employee respondent group is concentrated around Generation Y and Generation X.

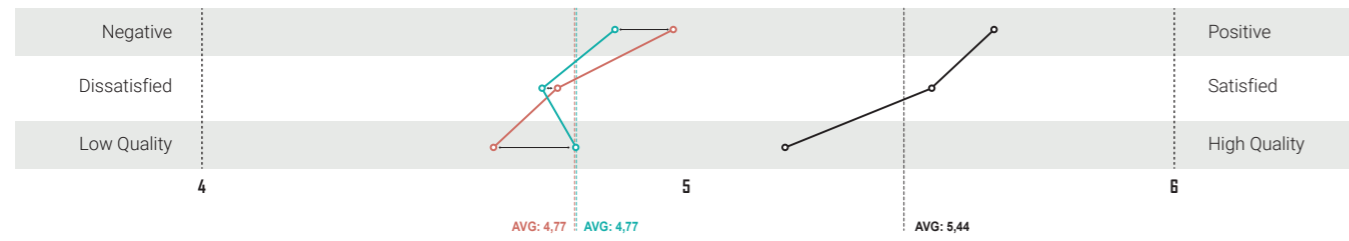
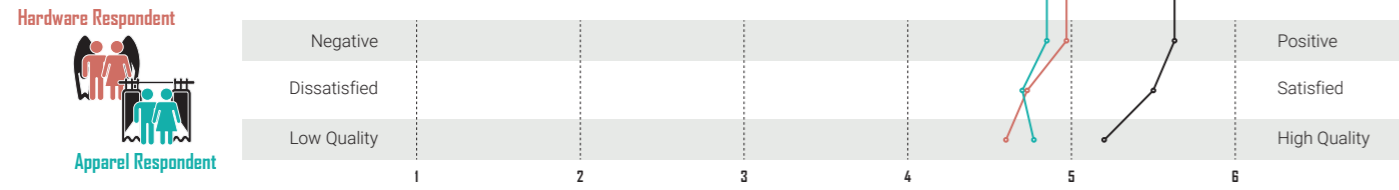
Brand Reputation

Brunotti's brand reputation as perceived vs. as desired

“ If consumers perceive the brand as positive, satisfactory and of high quality, they are more likely to accept brand extensions. ”

Hem et al. (2003)

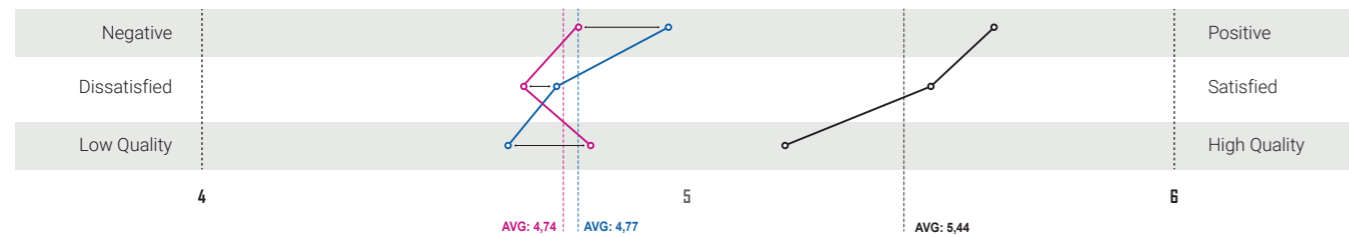
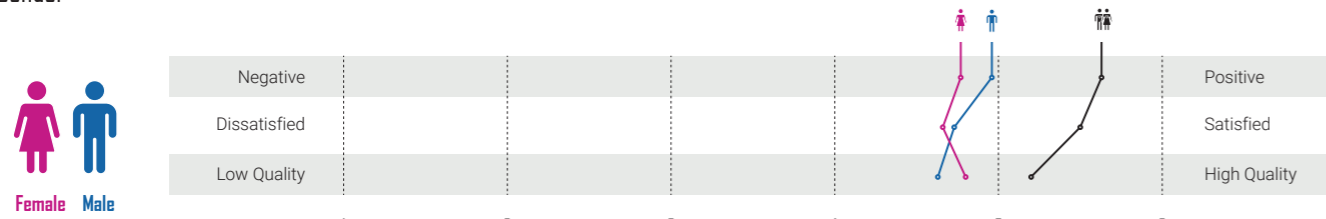
Hardware / Apparel Respondents



17. Brand Reputation > respondent groups

The three variables (positive, satisfied and high quality) load on one factor (KMO measure of Sampling Adequacy (.723) > 0.600, sig. .000), meaning that they can be converted into one umbrella variable; the factor 'Brand Reputation' in this case. Comparing the factor means of the Hardware- and Apparel respondent groups, shows that there is no difference in brand reputation between the groups. Comparing both means to the desired situation (Employee respondent), does show a gap (0,67 on a 1 - 6 scale).

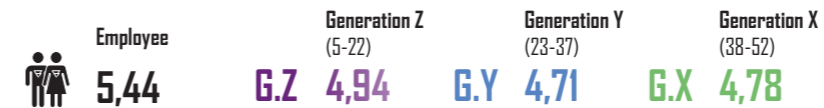
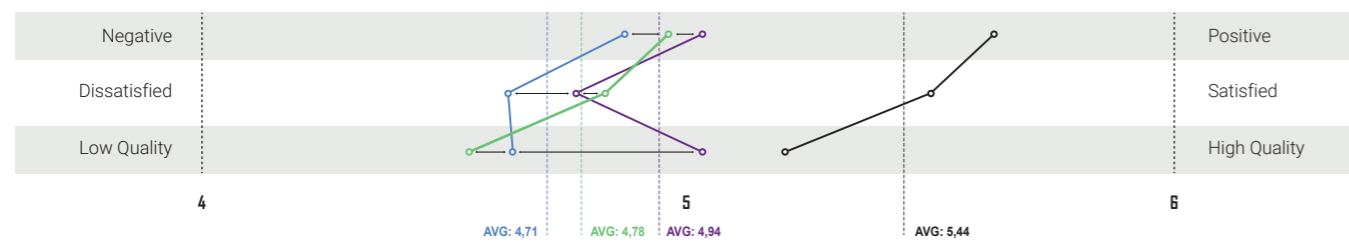
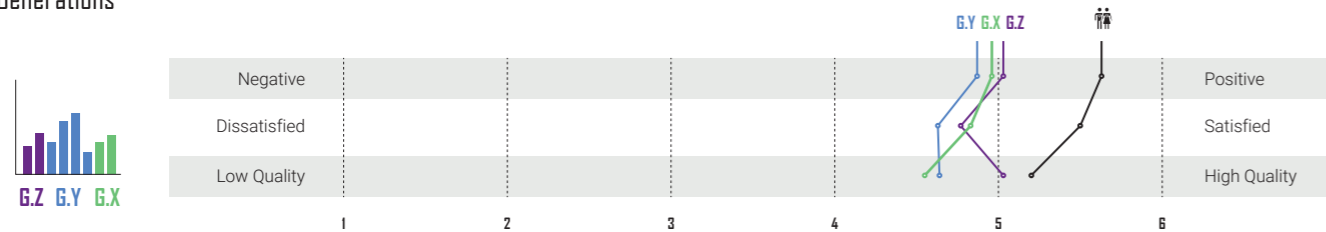
Gender



18. Brand Reputation > gender groups

Comparing the factor means of the Female and Male respondent, shows that there is close to no difference in brand reputation between the two genders. Note that almost all female respondents are in the Apparel respondent group. This partially explains the similar shape to the results above.

Generations

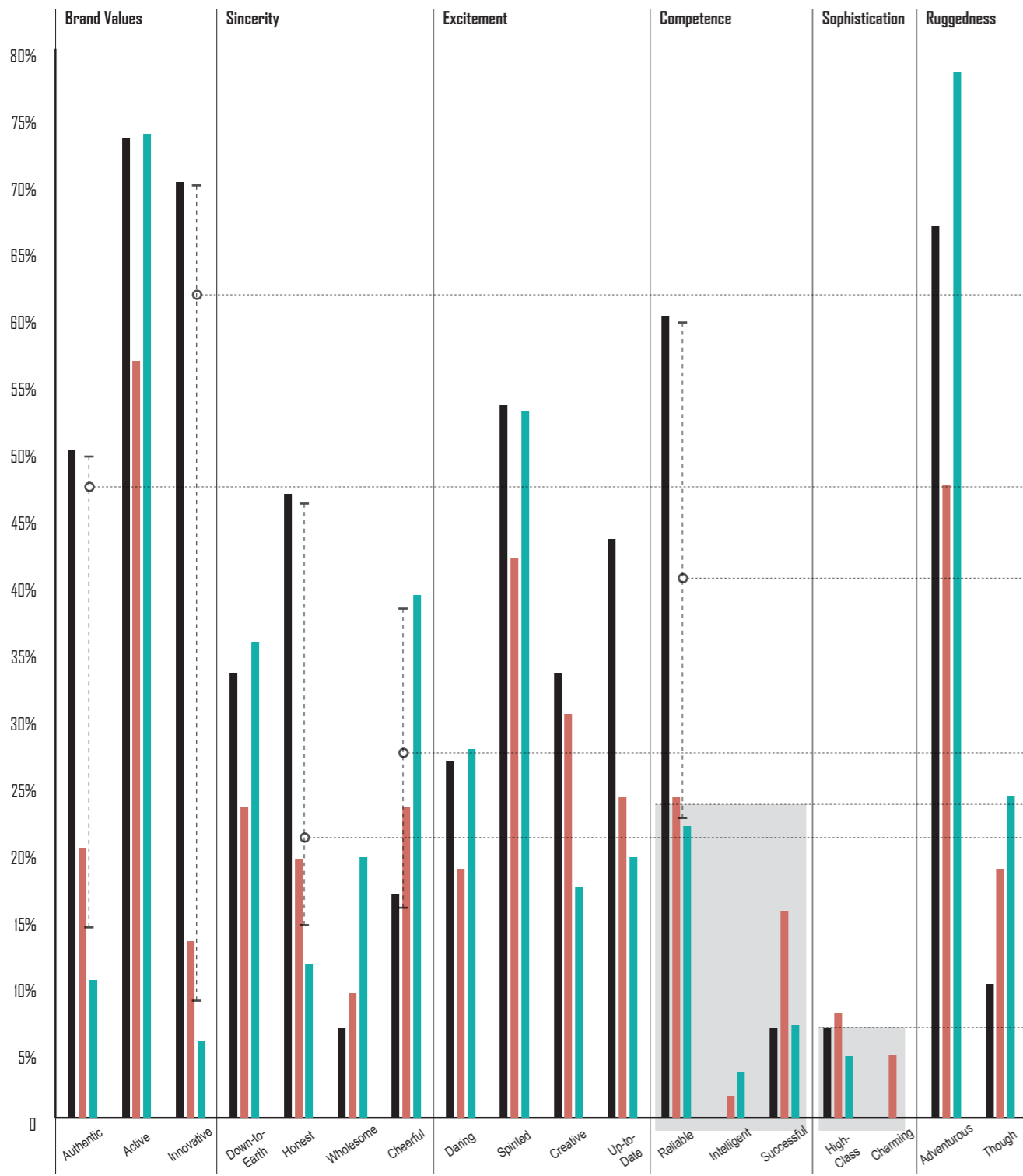


19. Brand Reputation > generations

Comparing the factor means of the different generations, only shows small differences. Without statistical significance, the results imply that the brand reputation is lowest for generation Y. The generation Y respondent group is dominated by Apparel respondents, but the result above proved that that has no effect on the brand perception. The brand perception is highest for Generation Z, especially in terms of perceived quality.

What the customer says vs. what the employee says

According to the Employee / Hardware / Apparel Respondents

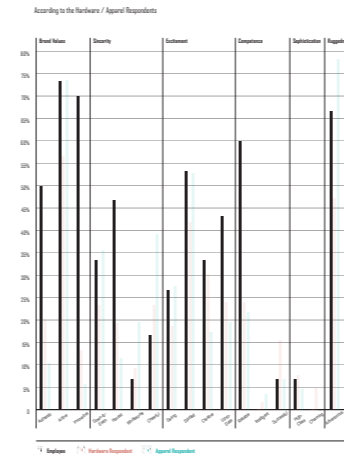


Employee Hardware Respondent Apparel Respondent

Aaker's (1997) Five Dimensions of Brand Personality + Brunotti's Three Core Values

20.

Personality according to employees



Employee respondents have a quite divided image of Brunotti's personality. The great majority linked two out of Brunotti's three core values to the brand, being Active & Innovative. The five most related personalities, according to the employees, are:

1. Active
2. Innovative
3. Adventurous
4. Reliable
- 5 Spirited

21.

Innovative

70% of the employees want Brunotti to be associated with "Innovative", which is over 5 times more than the amount of Hardware respondents that do (13%), and even about 12 times more than the amount Apparel respondents do (6%).

22.

Authentic

Only 50% of the Employee respondents recognized the personality 'Authentic', though it is one of Brunotti's core brand values. Still this is over 2 times more than the amount of Hardware respondents that do (20%), and 5 times more than the amount Apparel respondents that do (10%).

23.

Reliable

60% of the employees want Brunotti to be associated with "Reliable", which is over 2 times more than the amount of respondents that actually do. (Hardware: 24% and Apparel: 22%)

24.

Cheerful

17% of the employees want Brunotti to be associated with 'Cheerful', which is over 2 times less than the amount of Apparel respondents that do (39%).

25.

Competence

Less than 25% of both the Hardware & Apparel respondent associate Brunotti with reliability and even less with the two other competence-personalities.

26.

Honest

47% of the employees want Brunotti to be associated with 'Honest', which is over 2 times more than the amount of Hardware respondents that do (19%), and about 4 times more than the amount Apparel respondents that do (12%).

27.

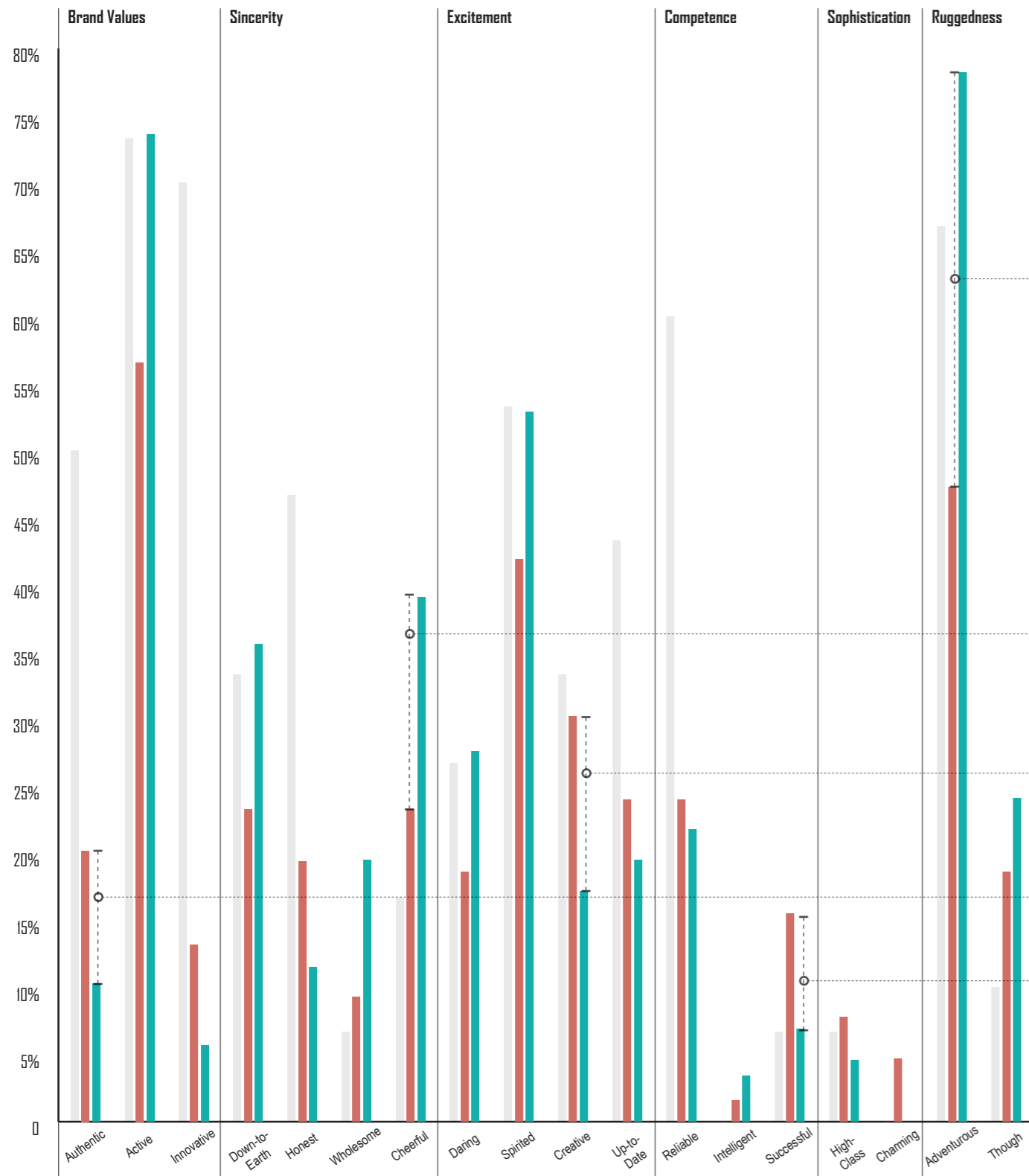
Sophistication

Brunotti is least associated with 'Sophistication'. This corresponds to the desired situation, as implied by the Employee respondent group.

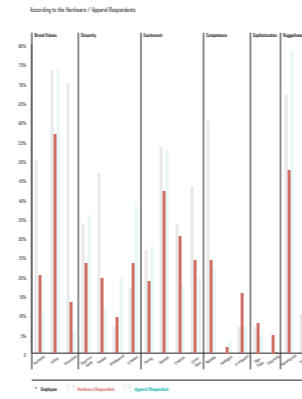
Brand Personalities

What the Hardware respondent says vs. what the Apparel respondent says

According to the Hardware / Apparel Respondents



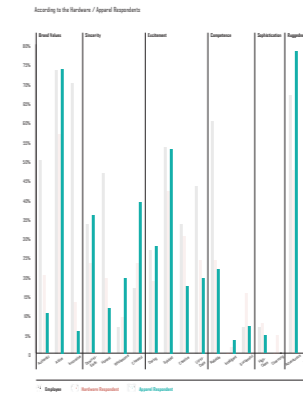
28. Personality according to Hardware respondents



The great majority linked the core value 'Active' to Brunotti. The five most related personalities, according to the Hardware respondent, are:

1. Active
2. Adventurous
3. Spirited
4. Creative
5. Reliable & Up-to-Date

34. Personality according to Apparel respondents



The great majority linked the core value 'Active' to Brunotti. The five most related personalities, according to the Apparel respondent, are:

1. Adventurous
2. Active
3. Spirited
4. Cheerful
5. Down-to-Earth

29. Adventurous

Much more of the Apparel respondents (78%) associate 'Adventurous' with Brunotti than the Hardware respondent (47%).

30. Cheerful

Much more of the Apparel respondents (39%) associate 'Cheerful' with Brunotti than the Hardware respondent (23%).

31. Creative

Much more of the Hardware respondents (30%) associate 'Creative' with Brunotti than the Apparel respondent (17%).

32. Authentic

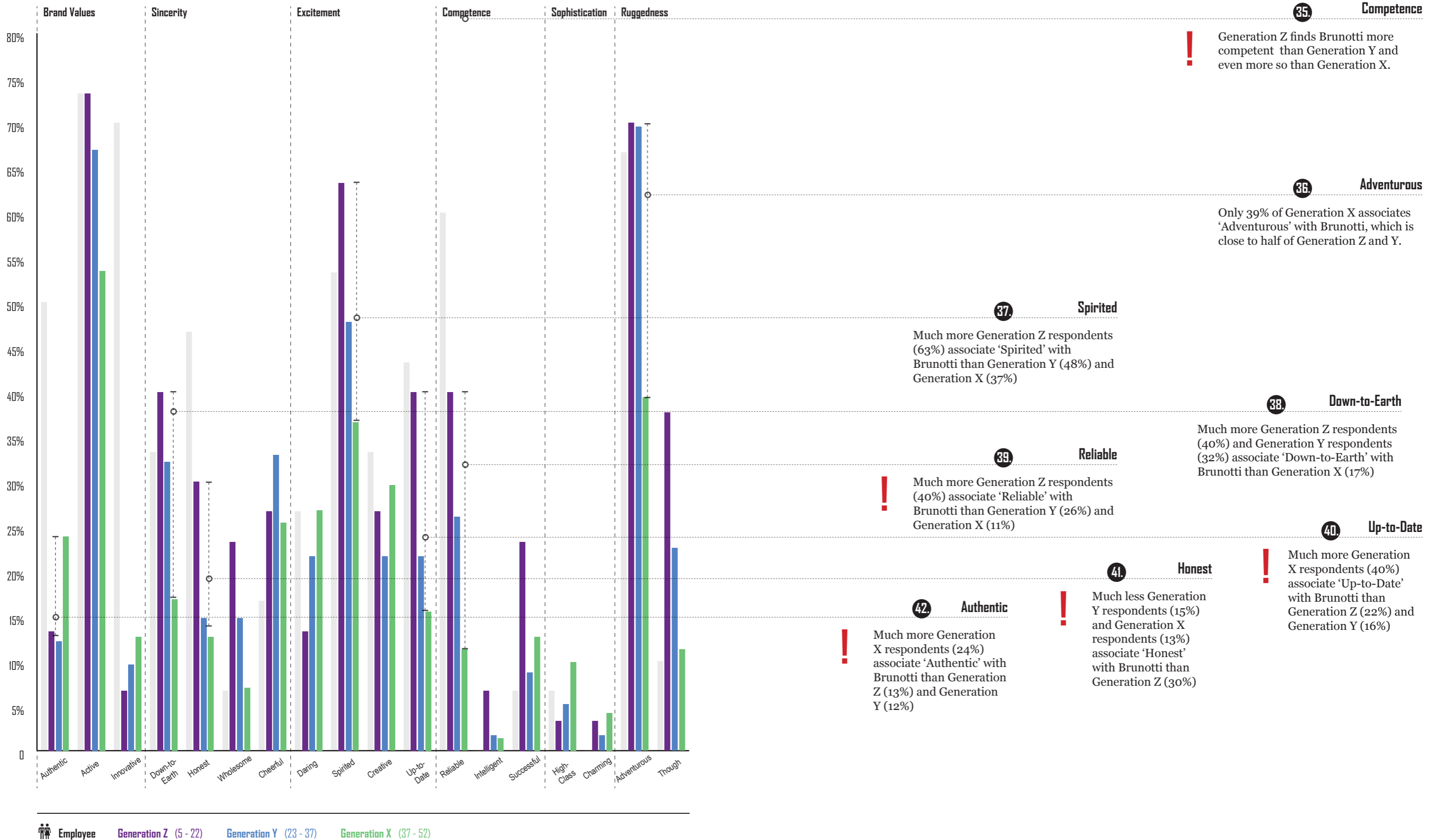
Much more of the Hardware respondents (20%) associate 'Authentic' with Brunotti than the Apparel respondent (10%).

33. Successful

Much more of the Hardware respondents (16%) associate 'Successful' with Brunotti than the Apparel respondent (7%).

What the different Generations say

According to the different generations



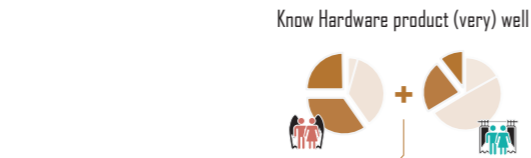
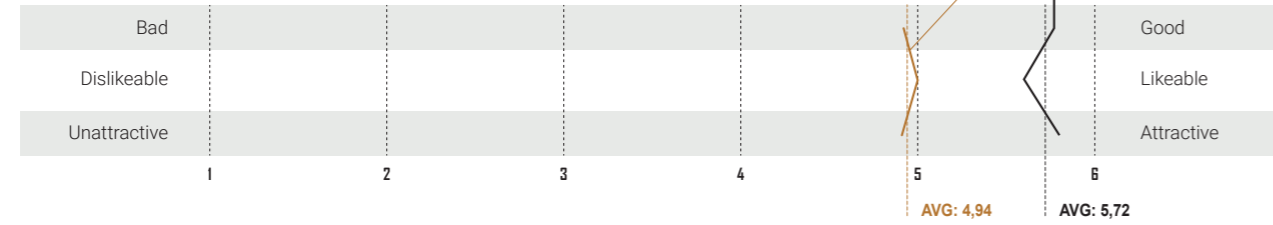
Product Reputation

Brunotti product's reputation as perceived vs. as desired

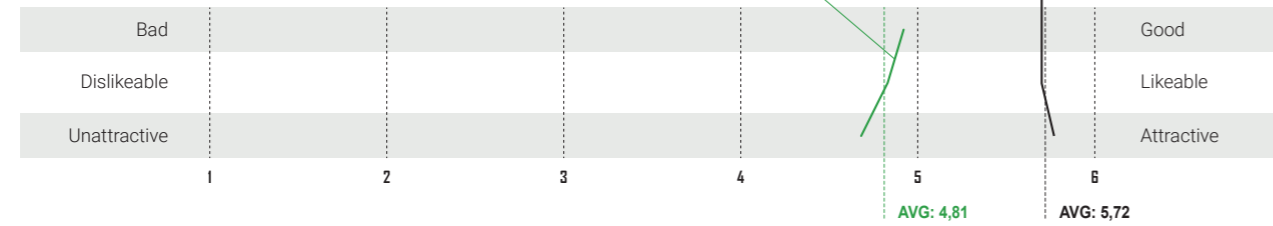
 Hardware Products

 Apparel Products

Hardware products

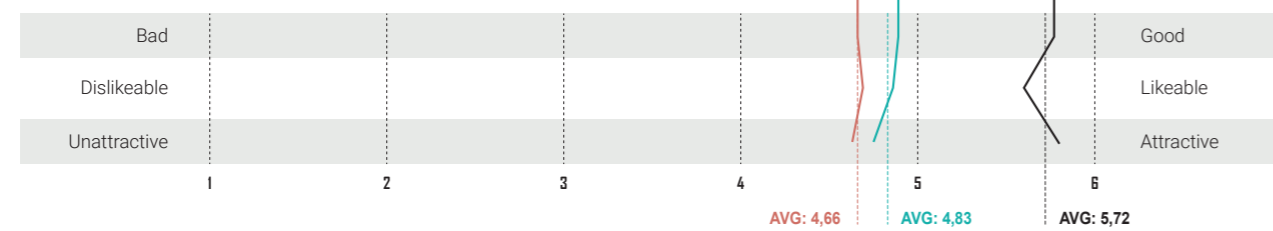


Apparel products

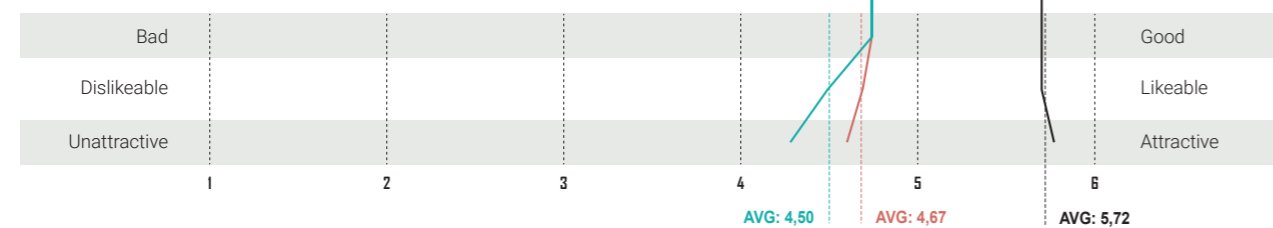


Hardware vs. Apparel respondent

Hardware products

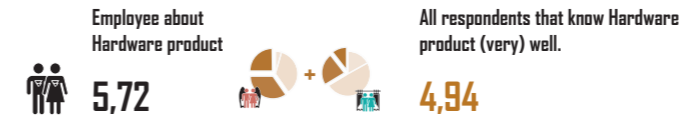


Apparel products



Product Reputation

Brunotti product's overall reputation



43. Product Reputation according to the respondents that know them (very) well

The three variables (good, likeable and attractive) load on one factor (KMO measure of Sampling Adequacy (.724) > 0.600, sig. .000), meaning that they can be converted into one umbrella variable; the factor 'Product Reputation' in this case. Comparing the factor means of the Hardware- and Apparel products, shows that there is only a small difference in reputation between the Hardware- and Apparel products. Comparing both means to the desired situation (Employee respondent), does show a gap (0,78 on a 1 - 6 scale for the Hardware products and 0,91 on a 1 - 6 scale for the Apparel products).



44. Product familiarity vs. Product Reputation

Comparing the averages of the groups that know the products (very) well with the total respondent groups, shows a difference. On average, respondents that know Brunotti's products (very) well, rate them higher than the respondents that do not.



45. Product Reputation according to the different respondent groups

The differences between product reputation for the different respondent groups are, again, small. It is notable that the Hardware product reputation is higher for the Apparel respondent and the Apparel product reputation is higher for the Hardware respondent.



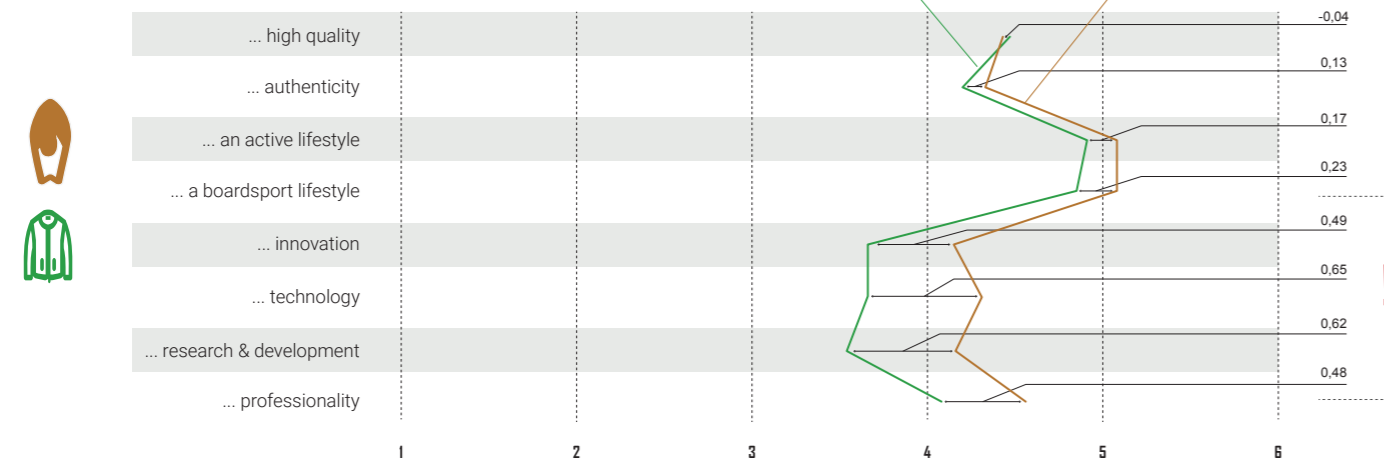
Product ↔ Brand value assessment

How well Brunotti's products reflect its brand values

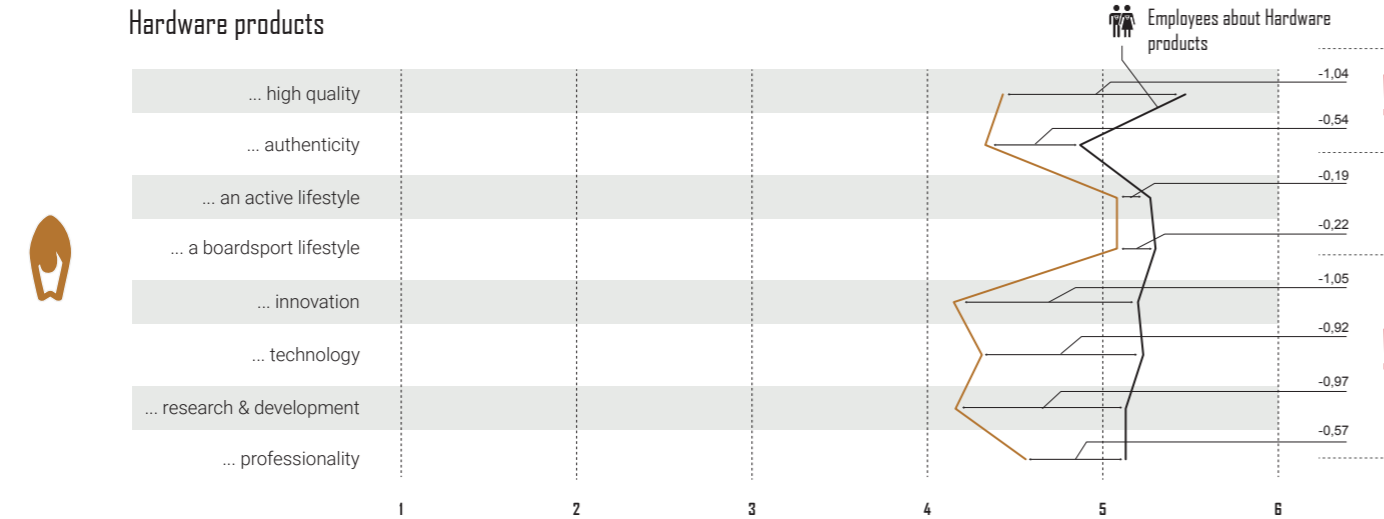
 Hardware Products

 Apparel Products

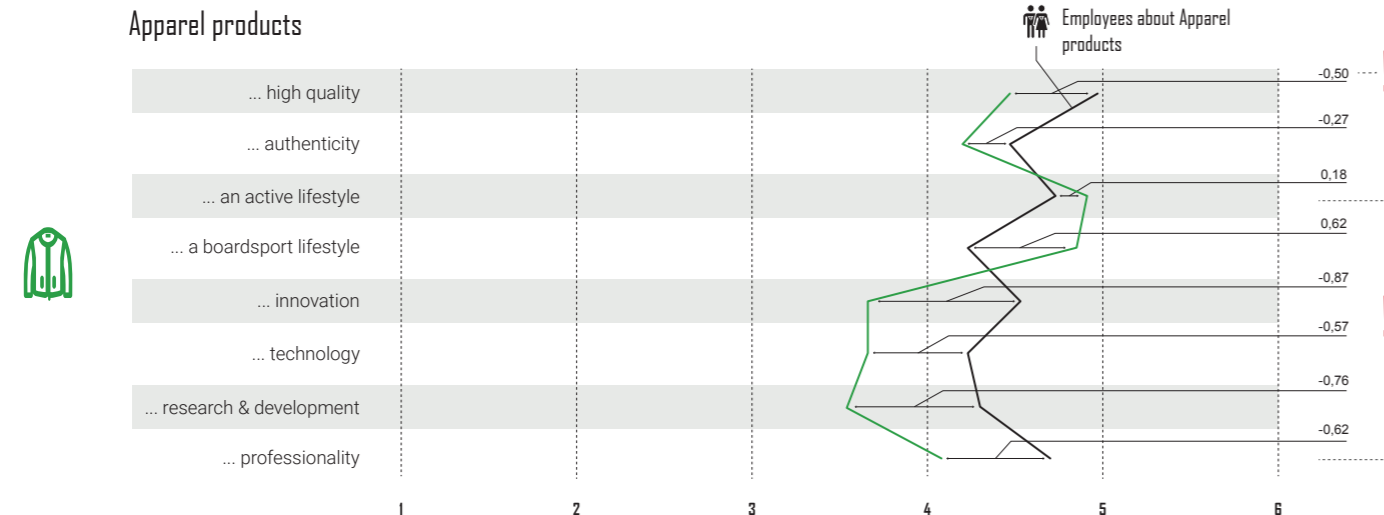
Hardware vs. Apparel products



Hardware products



Apparel products



“ Brand extensions are often unsuccessful when they move too far from a brand's core value. ”

Keller (2000)

Keller (2000)

46.

Brand value reflection of Hardware products vs. Apparel products

It directly becomes clear that Brunotti's Hardware products better reflect its brand values. This does not come as a surprise, because the products are much closer to the companies core (water board sports). The biggest differences are found for the brand value 'Innovative'.

47.

Brand value reflection of Hardware products

As the visual shows, the biggest differences between the current and desired situation, in terms of how well the Hardware products reflect Brunotti's brand values, occur for quality, authenticity and 'Innovation'. The Hardware products score too low on each brand value aspect, considering the desired situation as indicated by the Employee respondent.

48.

Brand value reflection of Apparel products

As the visual shows, the biggest differences between the current and desired situation, in terms of how well the Apparel products reflect Brunotti's brand values, occur for quality, lifestyle and 'Innovation'. The Apparel products score too low on quality and 'Innovation', but too high on lifestyle, considering the desired situation as indicated by the Employee respondent.

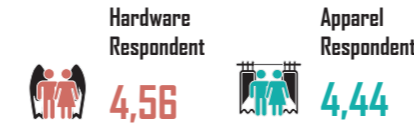
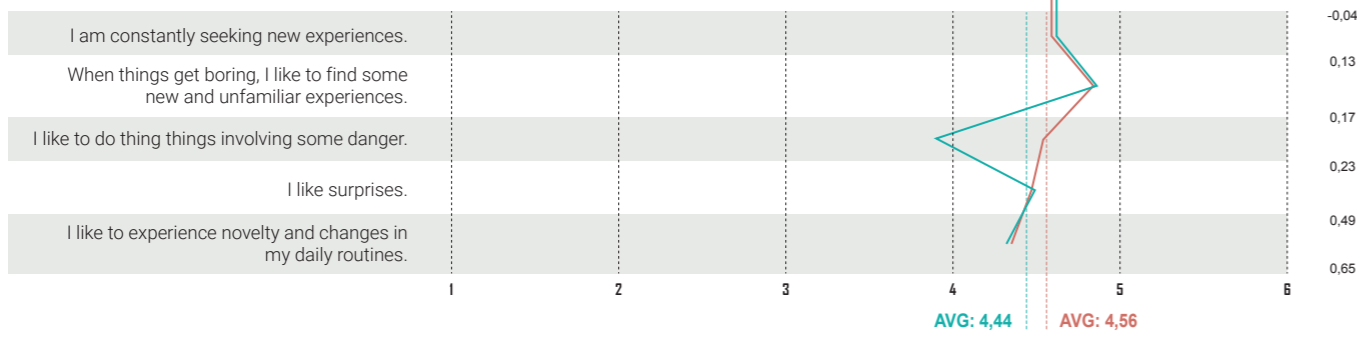
Customer Innovativeness

The innovative character of the customer

“ The innovative character of the consumers themselves has an impact on the speed of acceptance. Innovative consumers are quicker at accepting brand extensions. ”

Keller (2000)

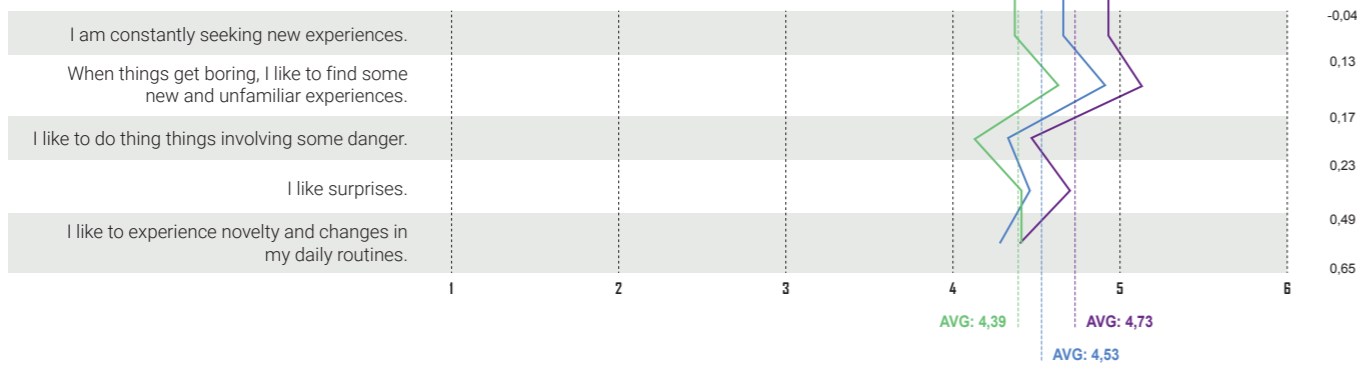
Hardware vs. Apparel Respondent



49. Product Reputation according to the respondents that know them (very) well

The five variables (as presented on the left page) load on one factor (KMO measure of Sampling Adequacy (.768) > 0.600, sig. .000), meaning that they can be converted into one umbrella variable; the factor 'Customer Innovativeness' in this case. Comparing the factor means implies that the Hardware respondent is more innovative than the Apparel respondent. Taking a closer look at the data, shows that the only difference is in terms of liking dangerous things. It is non-surprising that water board sporters score higher on this aspect of Innovativeness.

Generations



50. Product Reputation according to the respondents that know them (very) well

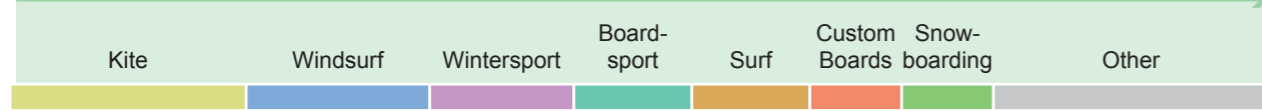
Comparing the factor means shows that Generation Z is the most innovative, followed by Generation Y and finally Generation X. This implies a relation between age and innovativeness. Performing a Pearson correlation analysis (sig. = 0.07) does not show a statistical relation, but does show a trend. I, therefore, argue that younger generations are more innovative than older generations.

First Brand Association

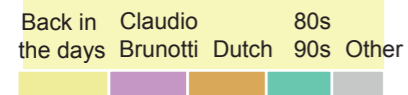
What first comes to mind for the Hardware respondent

Hardware Respondent

Boardsports (Hardware)

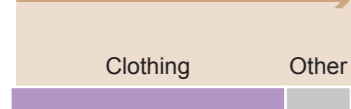


Heritage



! Within the Hardware respondent group, customers prove to know Brunotti's heritage. Taking a closer look at these respondents, shows that they are all over the age of 35. Thus, it is safe to say that merely the older generation (X) associates Brunotti with its heritage.

Clothing (Apparel)



"Claudio Brunotti and his wave boards, those were the days." (respondent, age 46)

Brand



A large part of the Hardware respondent group associates Brunotti with clothing. This does not come as a surprise, considering they know Brunotti's Hardware products, as well as do know its Apparel products.

Sport



Positive feeling



Quality



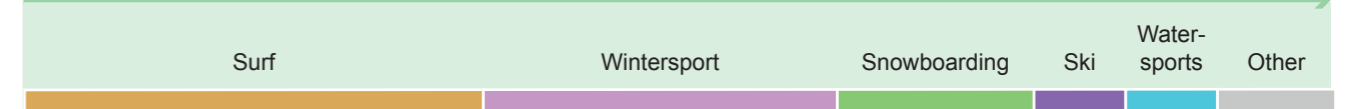
! Only a small part of the Hardware respondent group mentioned high quality as a first association with Brunotti.

First Association

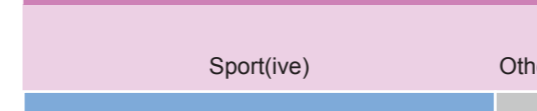
What first comes to mind for the Apparel respondent

Apparel Respondent

Boardsports (Hardware)



Sport



Whereas the Hardware respondents go into detail on specific board sports, many Apparel customers call Brunotti a 'sports brand'.

Clothing (Apparel)



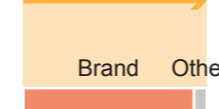
Like the Hardware respondents, the Apparel respondents strongly associate Brunotti with boardsports. Though, in contrast to the Hardware respondents, they only mention surfing and winter-boardsports specifically. To them Brunotti is a surf- and wintersports brand.

Quality



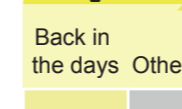
! A slightly bigger than the Hardware respondent, but still small, group mentioned high quality as a first association with Brunotti.

Brand



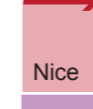
Unsurprisingly, many apparel respondents associate Brunotti with its clothing. They are generally more specific about the type of clothing they associate the brand with.

Heritage



! When Apparel customers talk of heritage, they mainly mention that they remember the brand from when they were younger. They do not mention Brunotti's heritage as stated in its story telling.

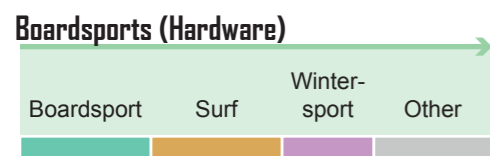
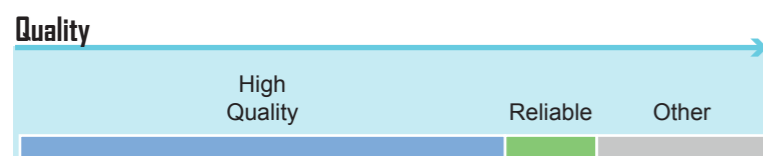
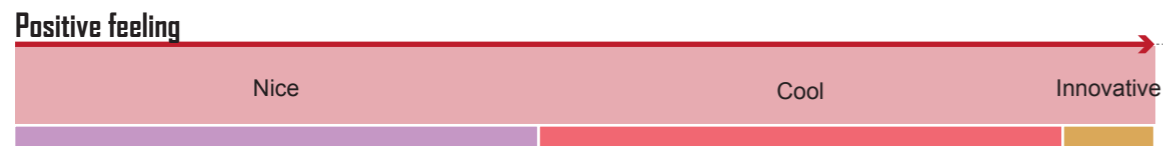
Positive feeling



First Association

What should come to mind first, according to the Employee respondent

Employee



60. Positive feeling

Asking Brunotti's employees what they want customers to associate Brunotti with, a different image emerges. They focus much more on a nice and cool feeling. This feeling of coolness is not mentioned by the actual customer.

61. Brand

If employees talk about Brunotti, they tend to mention the 'brand' much more than customers. Also, they talk of the lifestyle Brunotti wants to convey and its desire to be an A-brand. Note that specifics about board sports and clothing are mentioned to a much lower extent.

62. Quality

The desired association is much more focussed around quality and reliability, in contrast to what customers actually say.

06.01 Photovoltaic Materials

Materials and fabrics that produce an electrical current with sunlight (solar cells).

Figure 88. Stiff solar panels (Sunrise Solar Solutions, 22 June 2016)



Figure 91. Solar plastics (Eerolight, n.d.)

01. Stiff Solar Cells TRL 9

Stiff solar cells are solar cells that are not flexible and, thus, break when bent. Stiff solar cells are already used in many market-available products, for examples in solar panels, helmets and external batteries.

Figure 89. Flexible solar panel (Best Solar Tech, 2017)

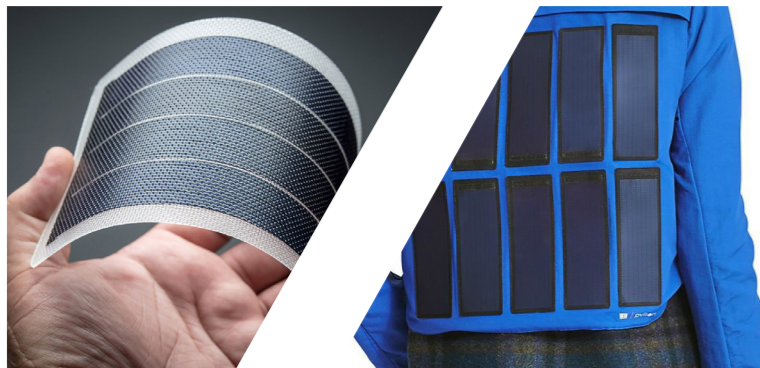


Figure 90. Solar fabrics (Digital Trends, 5 December 2017)

02. Flexible Solar Cells TRL 9

Flexible solar cells do not break when bent and, therefore, offer a whole new range of integration possibilities. Though less mature than technologies in the field of stiff solar panels, flexible solar technology is already put to the market in several different applications, for example in tents, clothing and maritime applications.

Figure 92. Interwoven solar cells (Nanowerk, 3 April 2014)

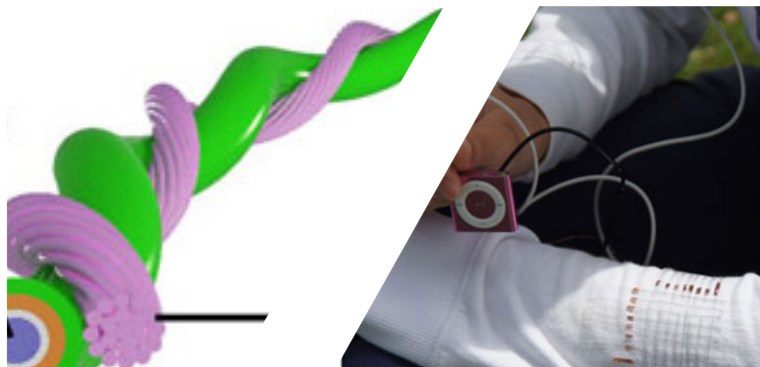


Figure 93. The PSC woven into a shirt powers an iPod Nano (Nanowerk, 3 April 2014)

03. Interwoven Solar Cells TRL 5

The University of Wisconsin-Madison teamed up with designers to develop interwoven solar panels. Similar to comparable researches at other universities, the technology is not yet ready to put to the market. The fact that multiple universities are developing this technology is promising for its future. Altogether, interwoven solar cells technology is on an estimated level 4 in terms of technology readiness. (Montalbano, 2016)

06.02 Conductive yarns and threads

Yarns and threads that conduct electrical currents.

Figure 94. Conductive yarn (adafruit, n.d.)



Figure 95. Interwoven controls (FashNerd, 22 August 2016)

04. Interwoven Conductive Yarn TRL 8

Interwoven Circuits are expected to play an important role in the exponentially growing field of smart wearables. Interwoven conductive yarns allows for fashionable electrical circuits that are fully integrated. The technology of interwoven conductive yarn or thread is close to full market introduction. (Hunt & Ashayer-Soltani, 2017)

Figure 96. Conductive yarn (adafruit, n.d.)

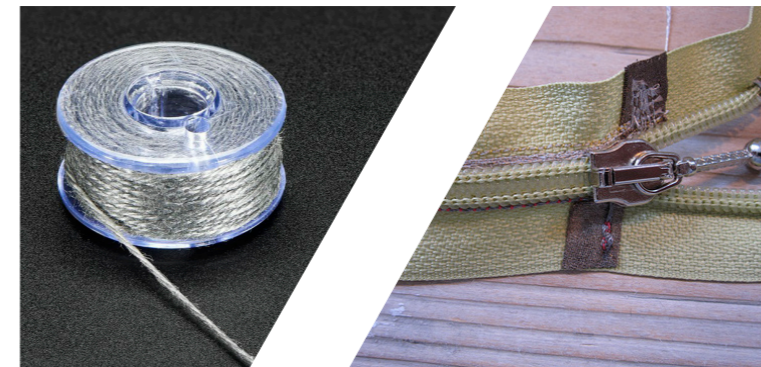


Figure 97. Conductive zipper (Kobakant, n.d.)

05. Conductive Fastener TRL 9

Conductive fasteners can already be found on the protective professional wearable market. Silver-coated fasteners, for example, are ideal for shielding clean rooms and radiation-sensitive production areas (Klettband Technik, n.d.). But conductive fasteners might play an important role in wearable technology as well.

Figure 98. Conductive yarn (adafruit, n.d.)

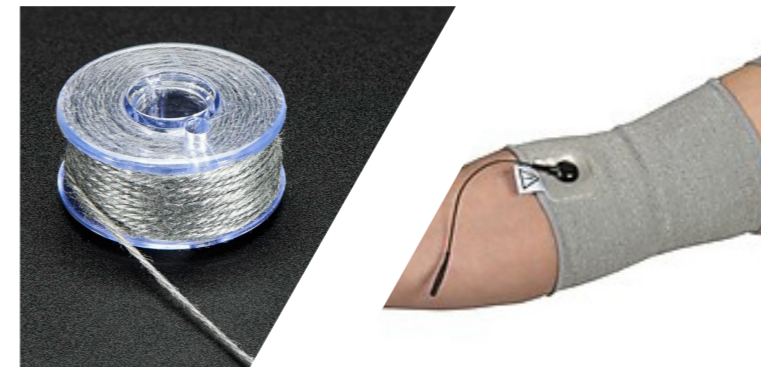


Figure 99. Conductive fabric - elbow support (Staples, n.d.)

06. Conductive Fabric TRL 9

Like conductive fasteners, conductive fabrics can already be found in different applications on the 'real world', for example: muscle stimulation, radiation shielding, antistatic carpets, and smart textiles (Statex, n.d.)

06.03 Conductive Polymers

Conductive polymers can be used to make flexible displays.

Figure 100. Flexible OLED (Extreme Tech, 17 July 2017)

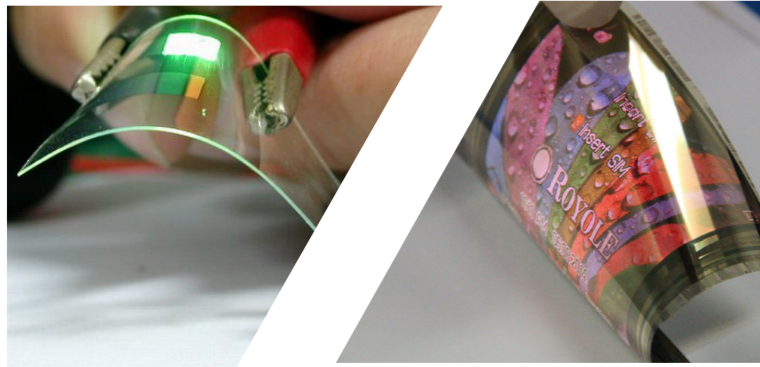


Figure 104. Flexible full colour display (Royole Corporation, n.d.)

Figure 102. Flexible LED strip (Schott AG, 7 May 2015)



Figure 103. LED Lightning strips (Electronic Design, 24 March 2016)

Figure 101. Flexible e-paper technology (Table News, 28 August 2010)



Figure 105. Curved e-ink smart watch (Bit Rebels, n.d.)

07. Flexible OLED screens TRL 7

Pre-curved OLED screens are already available to customers for some years, but next generation OLED screens will allow customers to bend their screens at own will. The second generations full colour flexible OLEDs will be virtually unbreakable, allowing for many cool new applications. The system prototype is demonstrated in an operational environment. (OLED-info, n.d.)

08. Flexible OLED Lighting TRL 7

Flexible OLED technology can also be used in lighting panels. The diffuse area lighting solution opens up a whole new field of lighting design. Like flexible OLED screens, the system prototype is demonstrated in an operational environment. (OLED-info, n.d.)

09. Flexible E-Paper TRL 9

Though we might see flexible colour e-papers in the future (Chalmers University Technology, 2016), this analysis concerns flexible black and white e-paper technology. The electronic paper is already available and offers many advantages. For example, it uses very little energy, is nearly unbreakable, very flexible, and can be waterproof. Flexible e-paper is used in, for example, tablets, smart-watches and construction work. (Plastic Logic, n.d.)

06.04 Shape memory materials

“Shape memory materials (SMMs) are featured by the ability to recover their original shape from a significant and seemingly plastic deformation when a particular stimulus is applied.” (Huang, et al., 2010)

Figure 106. Shape memory metal (Stanford, n.d.)

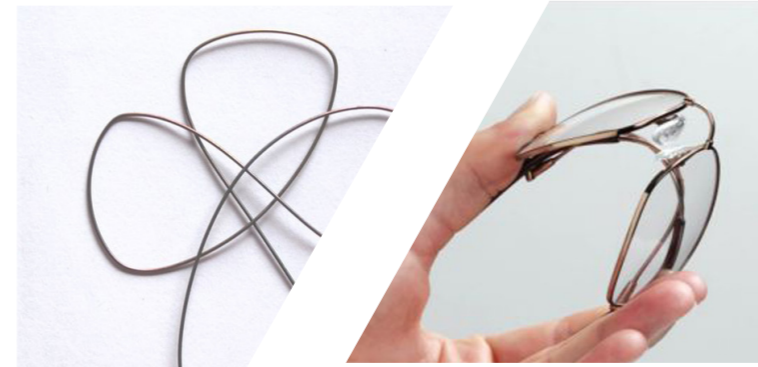


Figure 110. Glasses returns to original shape when heated (Stanford, n.d.)

Figure 108. Shape memory plastic (AZO Materials, 25 May 2012)

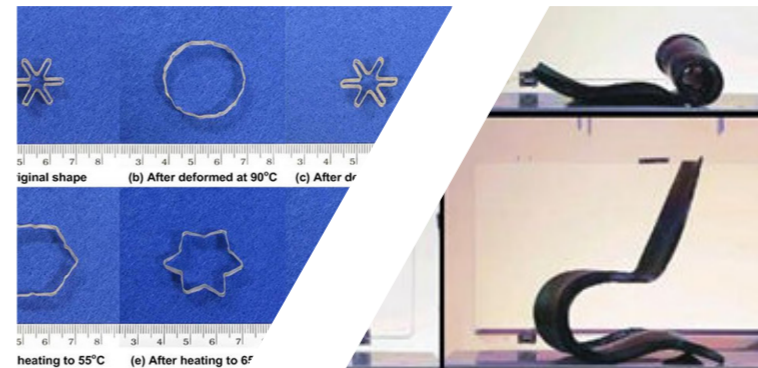


Figure 109. Chair returns to original shape when heated above transformation temperature (KU Leuven, n.d.)

Figure 107. Epoxymemory foam (Research Gate, June 2015)

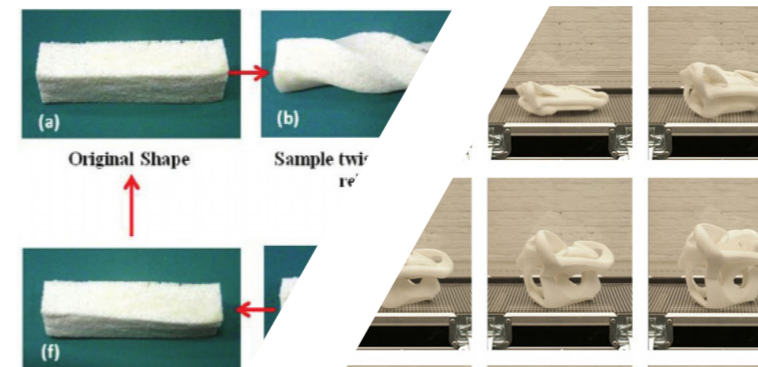


Figure 111. Memory foam chair can be reduced to 5% of its original size (Dezeen, 25 October 2012)

10. Shape Memory Metal TRL 9

Shape memory metals are alloys that remember their original shape. In response to temperature or magnetic fields, the mechanical properties of the material can be alternated. Many different types of shape memory alloys exist and are already used in a wide variety of applications worldwide. (Lin, 2008)

11. Shape Memory Plastic TRL 9

Shape memory plastics (polymers) are polymeric materials that remember their original shape. The polymers can be put into and out of a temporary shape using stimuli, such as temperature (Lendlein & Kelch, 2002). The technology is used in several medical and industrial applications.

12. Shape Memory Foam TRL 9

Shape memory foam is a type of shape memory polymer that is well-known for its application in pillows and mattresses. The human body heat brings the polymer into a soft state, allowing it to mould to a warm body in a matter of minutes (Nelles, 2009).

06.05 Colour-changing materials

Materials that change colour when a stimuli is applied

Figure 112. Flexible opals (University of Cambridge, 30 May 2013)



Figure 116. Bank note security - making them harder to forge (Reddit, October 2017)

13. Flexible Opal TRL 3

Flexible opal is a synthetic material that changes colour when twisted or stretched, developed by researchers of the University of Cambridge. In their own words, the material “could have important applications in the security, textile and sensing industries”. Cambridge’s website implies that the technology is still only in a experimental proof-of-concept level, due to the absence of a manufacturing partner. (University of Cambridge, 2013)

Figure 114. Photochromic ink (Ali Express, n.d.)



Figure 115. UV reactive clothing (ICR Hallcrest, n.d.)

14. Photochromic Ink TRL 9

Photochromic inks respond to UV-radiation. The ink darkens as the light intensifies, making colours appear when (sun)light is applied. Photochromic ink is on the market for many years and used in a wide range of different products.

Figure 113. Photochromic plastic (WeeTect, n.d.)



Figure 117. Sunglasses adjust transparency to UV intensity (AliExpress, n.d.)

15. Photochromic Plastic TRL 9

Photochromic plastic responds to UV-radiation. The plastic darkens as the light intensifies. Therefore, photochromic lenses become less transparent as sunlight increases. Photochromic plastics have been available to customers for decades already.

Figure 118. 05.09 Hydrochromic ink (Materia, 9 August 2014)



Figure 122. Jacket changes colour when wet (SFXC, n.d.)

16. Hydrochromic Ink TRL 9

Hydrochromic ink changes colour when exposed to water. The ink typically goes from an opaque state when dry to a translucent state when wet. The ink is mostly found in clothing, art and accessories. (SFXC, n.d.)

Figure 120. Thermochromic ink (Materia, 30 April 2014)

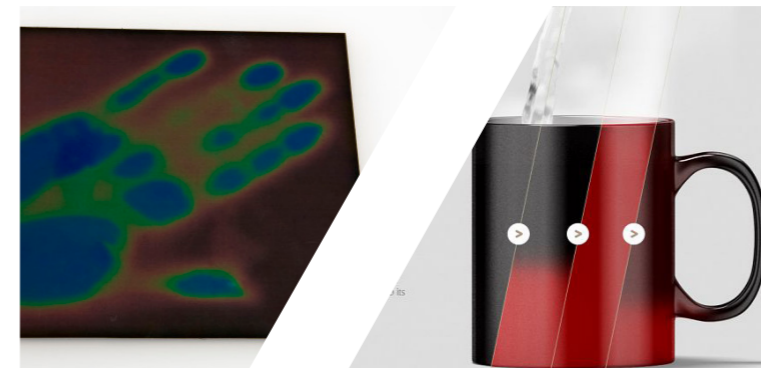


Figure 121. Mock changes colour when filled with hot water (Design Bundles, n.d.)

17. Thermochromic Ink TRL 9

Thermochromic ink changes colour or turns completely transparent when its temperature is increased or decreased. The ink is, for example, used in toys, packaging and thermometers.

Figure 119. Thermochromic fabric (The Perceptualist, n.d.)



Figure 123. Hug vest (The Perceptualist, n.d.)

18. Thermochromic Fabric TRL 9

Thermochromic fabric is fabric that is treated with thermochromic ink/paint, showing similar temperature sensitive properties.

Figure 124. Colour-changing thread - when electricity is applied (Berkeley, 6 June 2016)

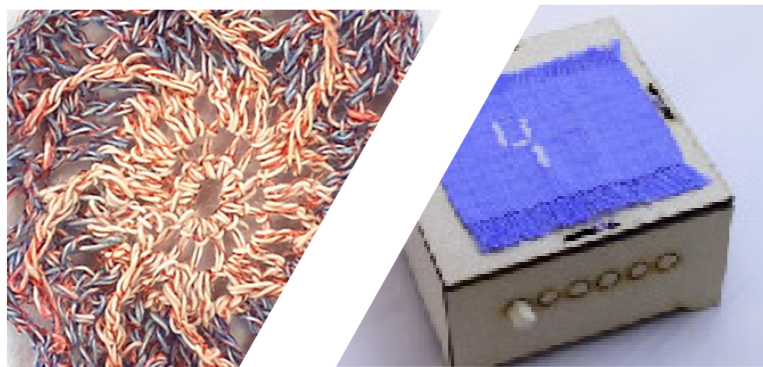


Figure 128. Woven seven-segment grid displays different numbers (Berkeley, 6 June 2016)

Figure 126. Optical variable ink changes colour when viewed from different angle (Alibaba, n.d.)

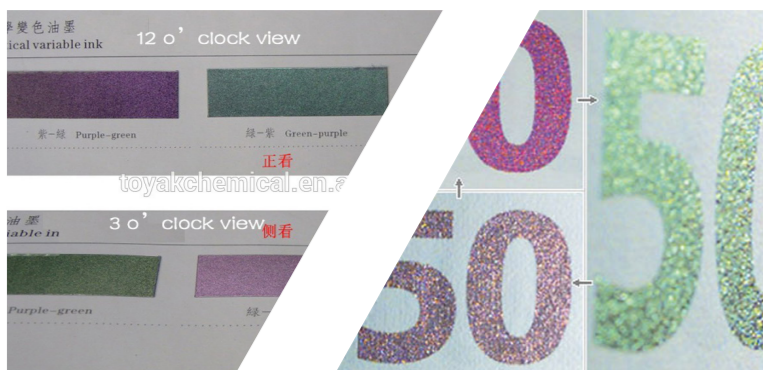


Figure 127. Optical variable ink is used on money as a security feature (ChromicTech, 26 November 2012)

Figure 125. Transparent reflective paint (Designboom, 20 December 2016)



Figure 129. Increase visibility at night (Designboom, 20 December 2016)

19. Colour-changing Thread TRL 3

This thread changes colour when an electrical current is applied, allowing to make clothing fully interactive. The thread is developed by researchers at UC Berkeley in corporation with Google. It now changes colour very slowly, but expected is that the colours will eventually change at the speed of e-ink. (Nield, 2016)

20. Optical Variable Ink TRL 9

Optical variable ink displays different colours, depending on the angle the viewer is observing it from. The ink is typically used for anti-counterfeiting purposes, such as in money bills and other official documents.

21. Transparent Reflective Paint TRL 9

This paint, typically coming in a spray paint form, is transparent, but reflective when illuminated. It does not only give a cool effect, but helps with increasing one's visibility at night without comprising on fashionability.

06.06 Phase-changing materials

Phase change materials (PCM) decrease temperature fluctuation by absorbing and releasing thermal energy when the material goes from a solid to liquid state of vice versa. (Pure Temp, n.d.)

Figure 130. Phase changing material - Temperature control (Energie Speicher, 2 February 2016)

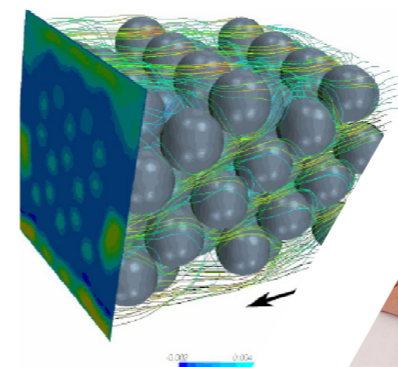


Figure 132. PCM cooling mat (Coopers, n.d.)

Figure 133. Phase changing material - Temperature control (Energie Speicher, 2 February 2016)

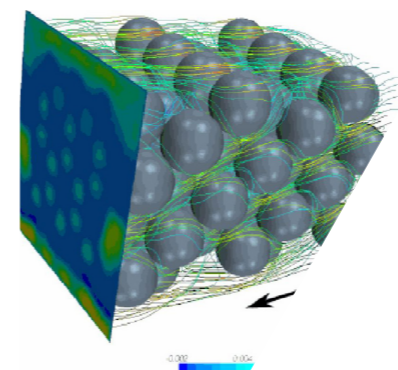


Figure 131. Phase-changing jacket controls body temperature (Sierra, n.d.)

22. Phase Changing Gel TRL 9

As explained, phase-changing materials (PCMs) are used for temperature control. The technology is based on the phenomenon of melting and freezing. When a PCM freezes, a large amount of energy (heat) is released, whereas a large amount of energy (heat) is absorbed when the material melts. This means it can take in a lot of energy from a heating environment and give energy to a cooling environment, keeping the temperature at more stable level. (Pure Temp, n.d.)
Phase-changing gels are used to control body temperature of both animals and people, in for example sleeping mats and clothing.

06.07 Self-cleaning and antimicrobial materials

Materials that can remove or eliminate microbial contaminations without human intervention (Santos et al., 2016)

Figure 134. Electrospun fibres (IEEE Young Professionals, 9 November 2015)



Figure 137. Self-cleaning and anti-bacterial jacket (ElectrospinTech, 4 August 2015)

Figure 135. Hydrophobic nanotechnology (Ultimate Finish, 13 September 2013)

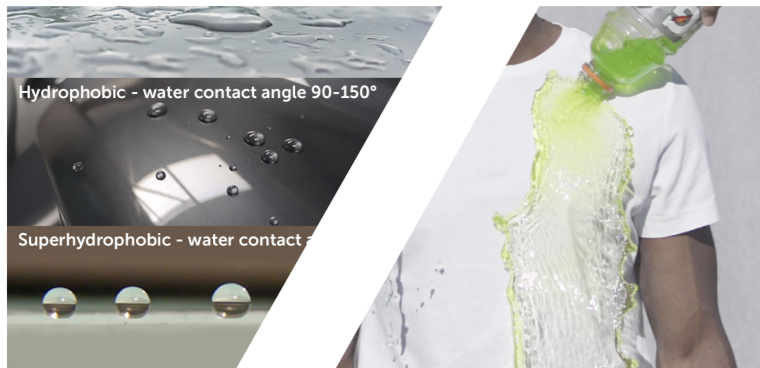


Figure 136. Anti-cleaning textile - shirt cannot get stained (Silicshirts, n.d.)

23. Anti-Bacterial Fabric TRL 9

Tweaking with nano fibres at atomic and molecular levels, allowed researchers to create anti-bacterial fabrics (Soutter, 2012). Typically using silver nano-particles, the technology is already put to the market in, for example, clothing, pillows and bedding.

24. Hydrophobic Nanotechnology TRL 9

Hydrophobic nanotechnology also operates on a molecular level, allowing almost no chance of liquid soaking into fabrics. Therefore, no liquids, such as wines, sodas or mud, can make a hydrophobic material dirty. The technology does not influence the look and feel of a fabric, making it perfectly suitable for many textile applications. (Triple F.A.T. Goose, n.d.)

06.08 Other

Figure 138. One-way sand permeable fabric (Fishing Fury, 22 April 2012)



Figure 139. Sand-permeable mat (Caravan Plus, n.d.)

25. Sand-Permeable Fabric TRL 9

Sand-permeable fabric is fabric that lets sand and dirt through in only one direction. The sand falls right through, but does not come back up. Utilised in several beach products, such as mats, bags and shoes, the technology allows for easy sand removal. (C-Gear, n.d.)

Water Boardsports

07.01 Sun

- It is annoying to have to put on sunblock, before and during session.
- Surfing is impossible at night (no sunlight).
- The sun is annoying for your eyes especially in the late afternoon.
- Sunglasses easily get lost while surfing.
- Wetsuits gets extremely hot in sun, when you are out of the water.

07.02 Hot vs. Cold

- It is easy to burn your feet on the hot sand
- It can be very cold to change clothes outside.
- The wind can be very cold.
- It can be hard to take of your wetsuit after surfing, because your hands are numb.
- Numb hands after surfing hurt.

07.03 Changing

- It can be uncomfortable to change outside, because sometimes you are practically naked.
- Wetsuits are hard to take off in general.
- Wetsuits get dirty when taking it off.
- It is hard to zip and unzip your wetsuit in general.
- When buying a new wetsuit it is a big effort to try multiple on.

07.04 Stuff

- Where to leave your (electrical) keys during surfing?
- Where to leave your money during surfing?
- Where to leave your boardbag during surfing?
- Finding your stuff on crowded beach can be hard.

- Sometimes you forget your wetsuit at home.
- A lack of pockets makes it easy to forget your keys, wallet or other small stuff.

07.05 Travelling

- Boards are fragile in general (break easily).
- Boards easily break during transport (bumping into other stuff).
- It is hard to fit all your stuff in your car.
- It is hard to keep your car clean, when transporting all your surf stuff.
- You easily get lame arms when biking with your board.
- Boards easily catch wind while biking, making it hard to keep balance.
- It is hard to travel with surfboard on your bike in general.
- It is hard to travel with all your (kite) surf stuff by bike
- You are not able, nor allowed, to take a longboard with you in the tram.
- It is hard to attach your board to the roof of your car.
- Surfing is logistic nightmare in general.

07.06 Bindings

- Losing your kite board happens quickly.
- Leashes get tangled up while surfing.
- Surfboard leashes tend to undesirably turn around your ankle.
- It takes too long to take of your wake board when you fall.

07.07 Boarding together

- You often have to wait until your friends are done surfing before you can go home.
- With cold weather, the black hoodies make it hard to recognise your friends in the water.

07.08 Water

- Car trunk often gets wet on your way back home.
- Car seats often get wet on your way back home.
- You cannot take your electronic car key into water, because it will break.
- It is always hard to keep your socks dry.
- You cannot listen to music while surfing.
- Surf- shoes and gloves stay wet for way too long.
- Your kite stays wet for way too long.

07.09 Sand (earth)

- Sand gets into your board's wax.
- Sand gets into your wetsuit, which is annoying.
- Sand gets everywhere in your car, making it dirty.
- Sand basically gets everywhere after going to the beach.
- You always need to wash the sand off after surfing, even though it is cold.

07.10 Hurting feet

- Your wounds don't heal due to salt/dirty water.
- You often hurt your feet, due to glass, rocks, sand, etc.

07.11 Food/drinks

- It is hard to keep your food and drinks cool in the hot sun.

- You often get very thirsty during surfing.
- You cannot take drinking water with you in the water.

07.12 Different conditions

- It is hard to determine if surfing shoes and gloves are needed beforehand.
- It is hard to determine what size surfboard you will be needing beforehand.
- It is hard to determine what kite you will be needing beforehand.
- You need different gloves for different water board sports.

07.13 Surfing injury

- You get 'spaghetti arms' from surfing.
- You get 'rash (abrasions) from surfing.
- You get abrasions from your bikini seams.

07.14 Social

- Boarders are often rude to one another.
- Locals tend to place themselves above others.

07.15 Appearance

- Your hair gets very blond and dry.
- You skin gets darker.

07.16 Other

- It is hard to keep track of time, while in the water.
- It hard to defecate, while in the water.

Winter Boardsports

07.17 Hot vs cold

- You easily get sweaty because your hot, and then get too cold.
- You can suddenly be freezing in the ski lift.
- Back protectors are extremely hot to wear.

07.18 Snow/Ice

- Hard pieces of ice in your beard hurt.
- You easily get snow in your ski jacket, which is uncomfortable.
- You easily get snow in your ski pants, which is uncomfortable.
- You easily get snow in your gloves, which is uncomfortable.

07.19 Board Transport

- Snowboards often barely fit in the ski lift.
- Board bag wheels tend to get stuck during transport.
- Regular and Goofy tuned boards do not go well together in lift standard.

07.20 Taking stuff with you

- Jacket/pants pockets are not big enough for your drinks and food.
- Bags can be impractical while boarding.

- It is hard to sit in the ski lift with a full backpack.
- You often have to take a lot of stuff to take with you in a restaurant.
- You easily forget important stuff at home.
- When you drop something from the ski lift it is nearly impossible to get it back.
- It is hard to find a garbage bin on the slope, but you do not want to pollute.
- Boards can get stolen during après ski or lunch.
- You easily forgot your ski pass when you wear different jackets.

07.21 Water/Wet

- Map of skiing areas easily get wet and then tear.
- Everything in your apartment gets wet and smelly.
- Boots and gloves take very long to dry, but you have to wear them every day.
- Wet clothes get unpleasantly smelly.
- You easily get condensation on you ski goggles, even with the anti-condensation ones.

07.22 Product failure

- It is easy to get scratches on you ski goggles.
- Ski gloves often break, because you need to hold a sharp edge when putting on you snowboard.

07.23 Clumsy actions

- It is uncomfortable to sit in a ski lift with your backpack on.
- It is a lot of effort to take your snowboard off and put it on again.

07.24 Others on the ski slope

- Skiers cannot really look back, so they often do not see you coming during overhaul.
- You constantly have to look out for other skiers and snowboarders.

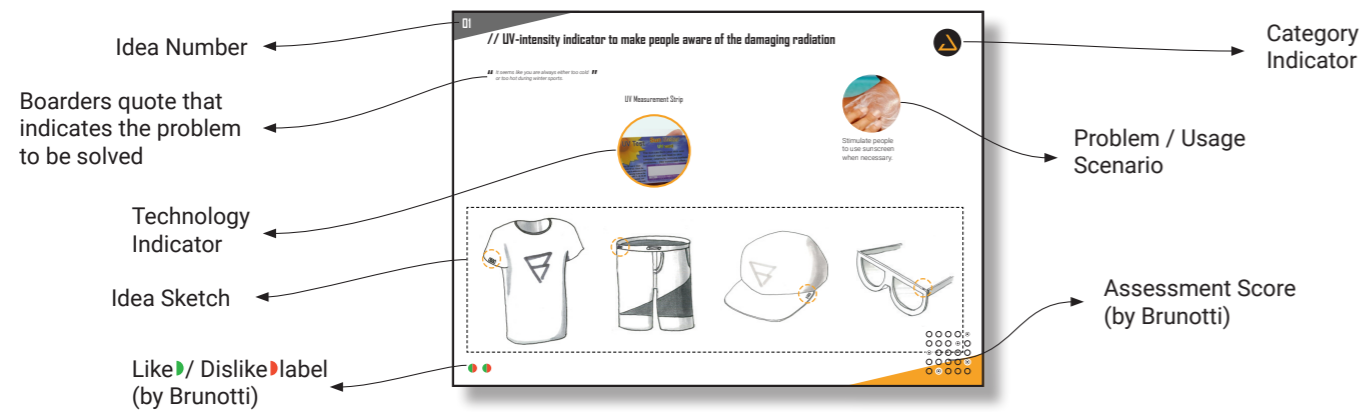
07.25 Boarding together

- You easily lose sight of each other.
- It can be hard to find each other back again.
- It can take very long to wait for others, taking up precious time.

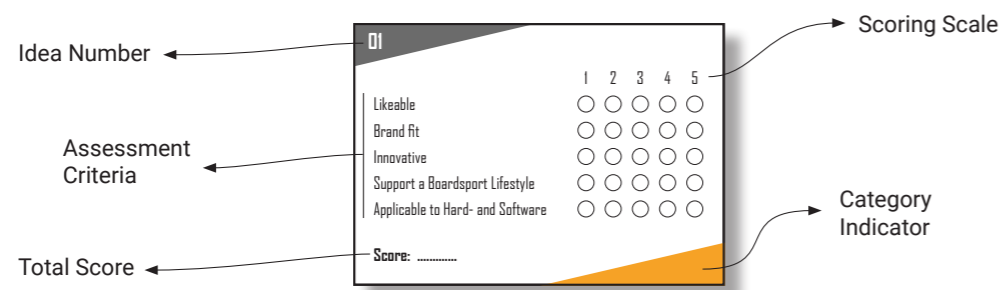
07.26 Other

- Some conditions ask for sharp edges and some for blunt edges on your snow board.
- You easily get bored in the ski lift.
- It is hard to keep track of time with all your ski clothes on.
- It is a real hassle to go to the toilet with all you ski clothes on.

// IDEA CARD



// SCORE CARD



'Innovative'

1. **Technical** (inventive) ...
2. product features (incremental innovation) ...
3. that are **new to the market** (different for each product category), and ...
4. contribute to **commercial success** from a ...
5. **product- and marketing perspective.**



OPERATION INDICATOR



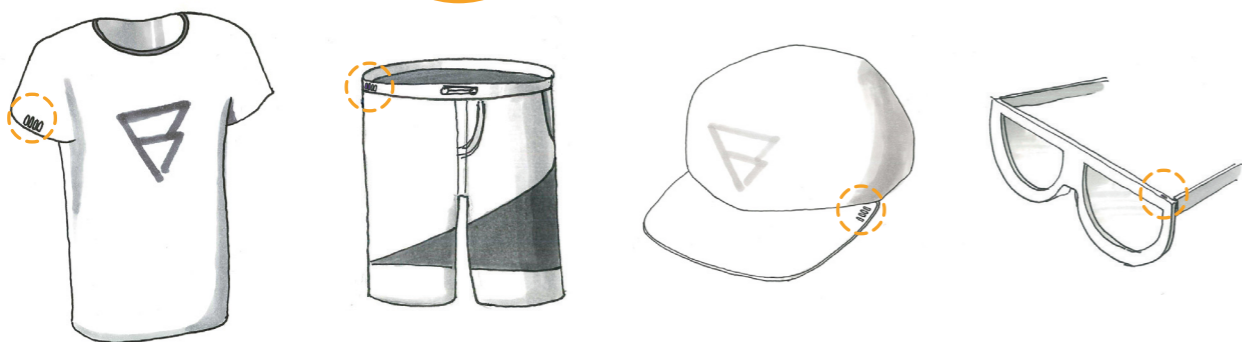
// UV-intensity indicator to make people aware of the damaging radiation



UV Measurement Strip



Stimulate people to use sunscreen when necessary.



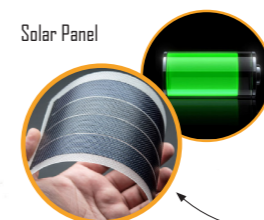
Likeable	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	●	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	●	○	○	○

Score: 3.0

// Integrated solar panels to charge electronic devices



Solar Panel



Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.7

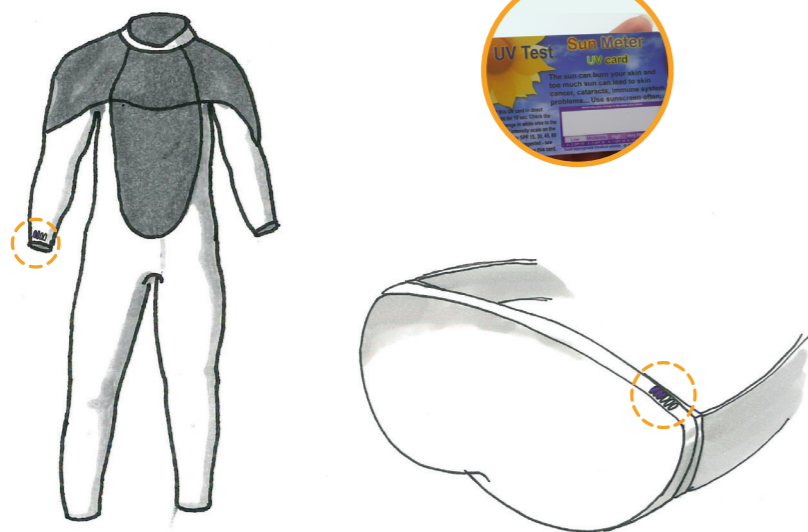
// UV-intensity indicator to make people aware of the damaging radiation



UV Measurement Strip



Stimulate people to use sunscreen when necessary.



Likeable	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0

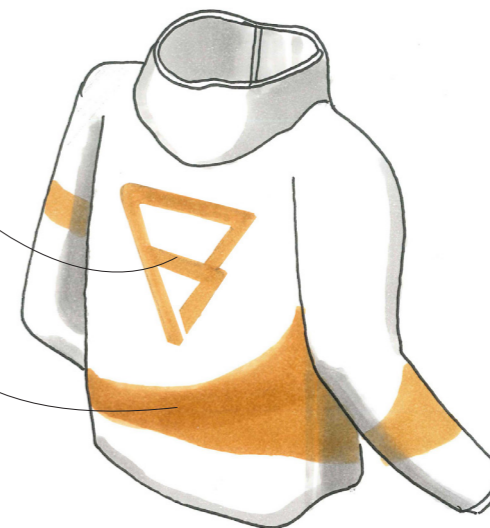
// Transparent light-reflecting parts of clothing for safety and recognisability



Transparent Reflective Fabric



Make people more visible in traffic.

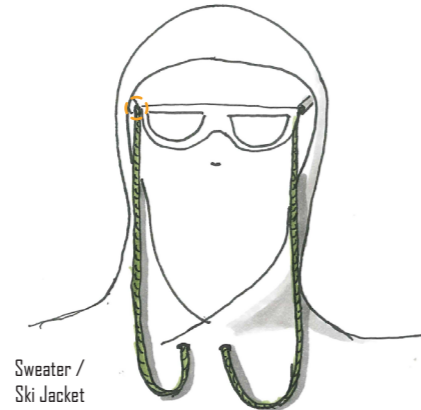
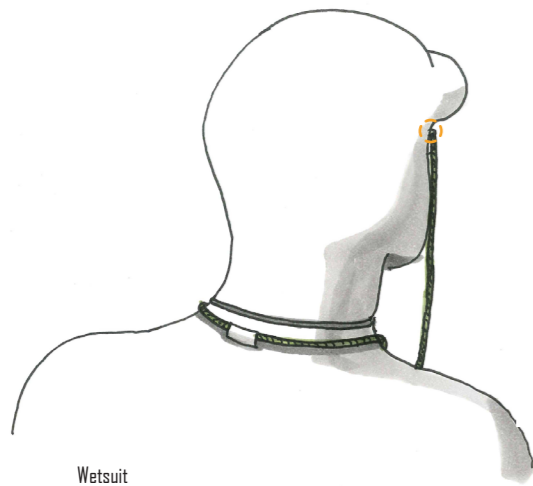
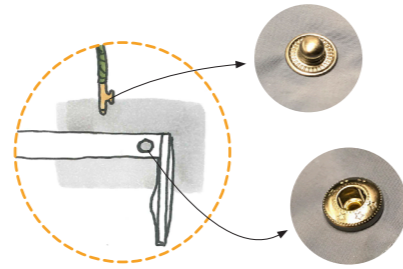


Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 1.7

// Brunotti glasses easily attach to Brunotti wear to avoid losing

While surfing, the sun is extremely enjoying, especially in the late afternoon. But sun-glasses will get lost during surfing.



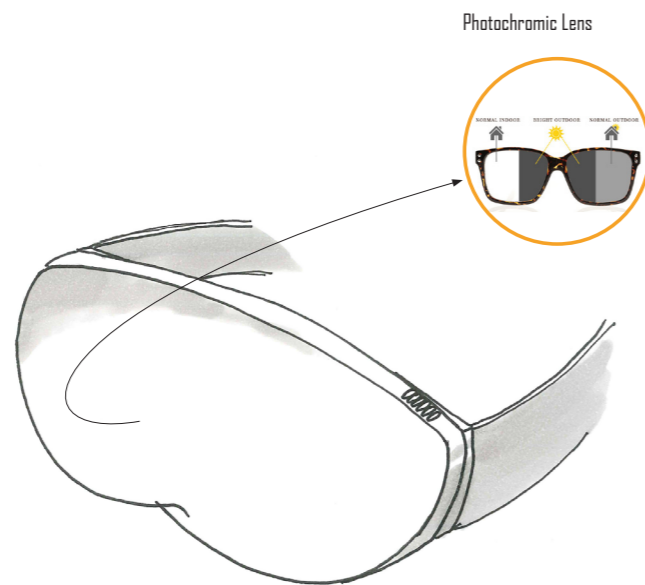
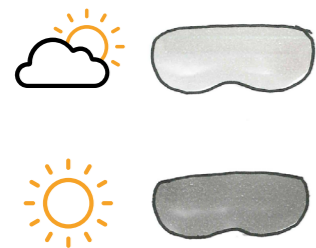
1	2	3	4	5
○	●	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○

- Likeability
- Brand fit
- Innovative (2x weight)
- Support a Boardsport Lifestyle
- Applicable to Hard- and Software

Score: 2.7



// Photochromic lenses automatically adjust transparency to light intensity



1	2	3	4	5
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○

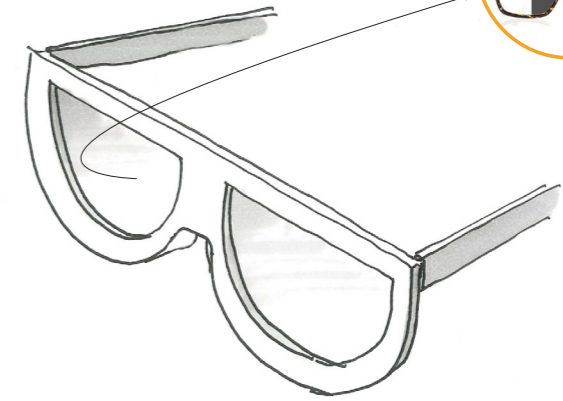
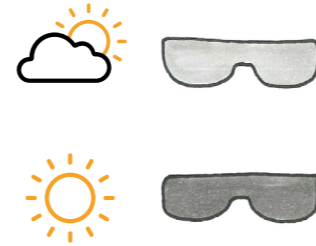
- Likeability
- Brand fit
- Innovative (2x weight)
- Support a Boardsport Lifestyle
- Applicable to Hard- and Software

Score: 2.0



// Photochromic lenses automatically adjust transparency to light intensity

Photochromic Lenses



1	2	3	4	5
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○

- Likeability
- Brand fit
- Innovative (2x weight)
- Support a Boardsport Lifestyle
- Applicable to Hard- and Software

Score: 2.0





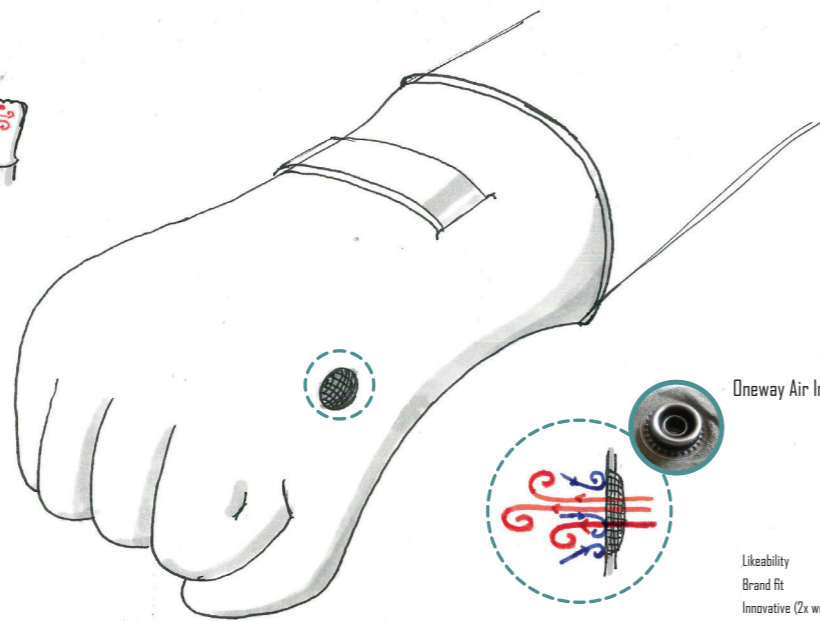
// AIR //

// Oneway nozzle/valve to warm hands

It seems like you are always either too cold or too hot during winter sports.



Warm your hands with a natural breeze.



Oneway Air Inlet

	1	2	3	4	5
Likeability	○	●	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	●	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 1.5

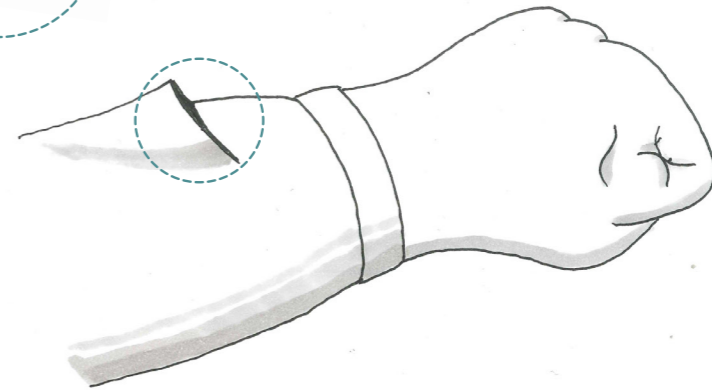
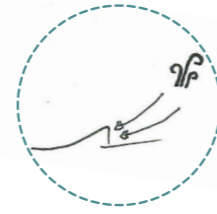


// Closable air inlet to cool body down



It seems like you are always either too cold or too hot during winter sports.

Air Inlet



	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.0

// Integrated vacuum compartment for clothes to increase room



Bring a lot, but pack small and avoid having to pay extra.

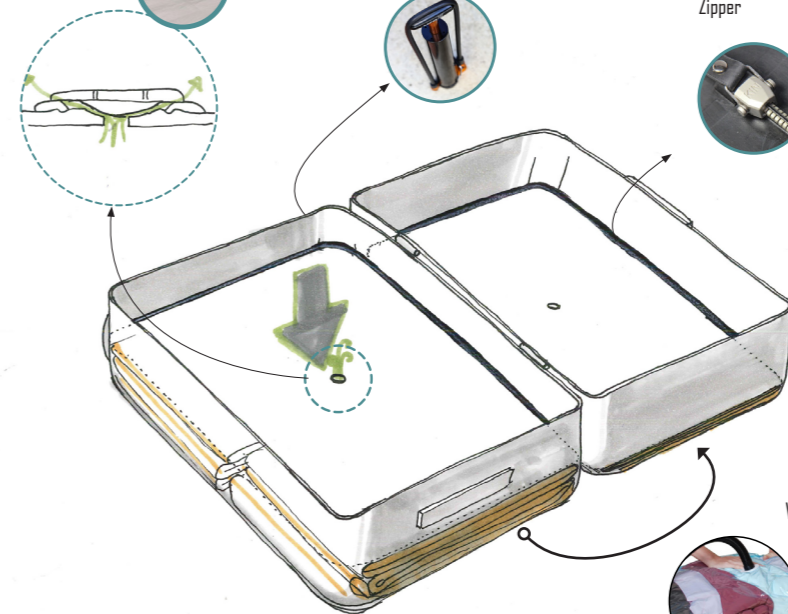
Vacuum Valve



Hand pump



Water- and Airtight Zipper



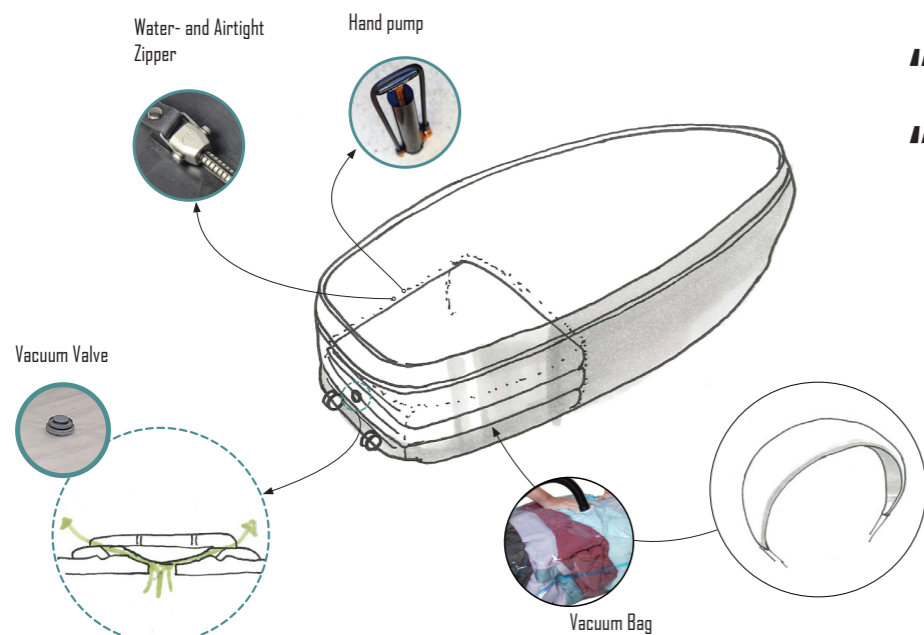
Vacuum Bag

	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.8



// Integrated vacuum compartment for kite/clothes to decrease bag size



It is hard to travel with all your (kite) surf stuff by bike.

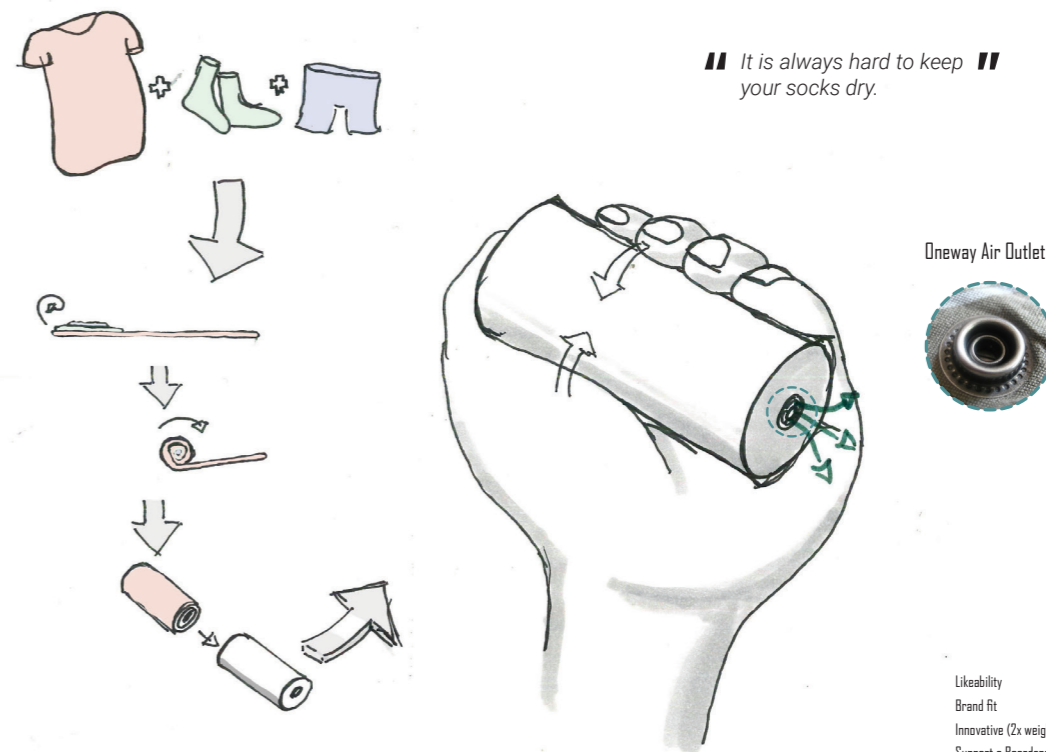
It is hard to everything in your car.

Likeable	1	2	3	4	5
Brand fit	○	○	○	○	●
Innovative (2x weight)	○	○	○	○	●
Support a Boardsport Lifestyle	○	○	○	○	●
Applicable to Hard- and Software	○	○	○	○	●

Score: 4.8



// Vacuum squeeze pack to easily take an extra set of clothes



Likeability	1	2	3	4	5
Brand fit	○	○	○	○	●
Innovative (2x weight)	○	○	○	○	●
Support a Boardsport Lifestyle	○	○	○	○	●
Applicable to Hard- and Software	○	○	○	○	●

Score: 4.7



// Integrated vacuum compartment to decrease backpack size



It is hard to sit in the ski lift with a full backpack on.



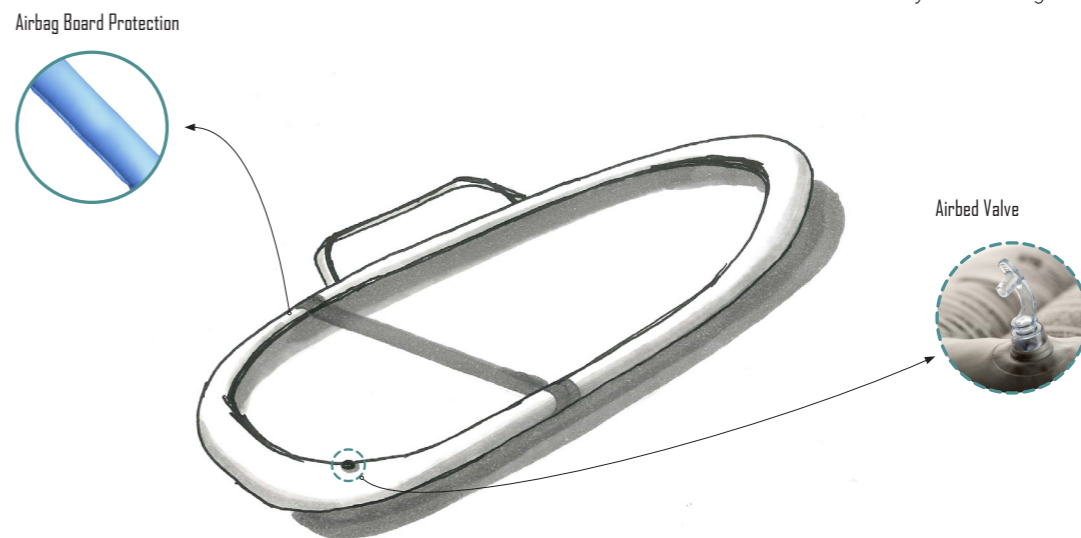
Likeable	1	2	3	4	5
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.8

// Integrated inflatable airbag to protect your board during travel



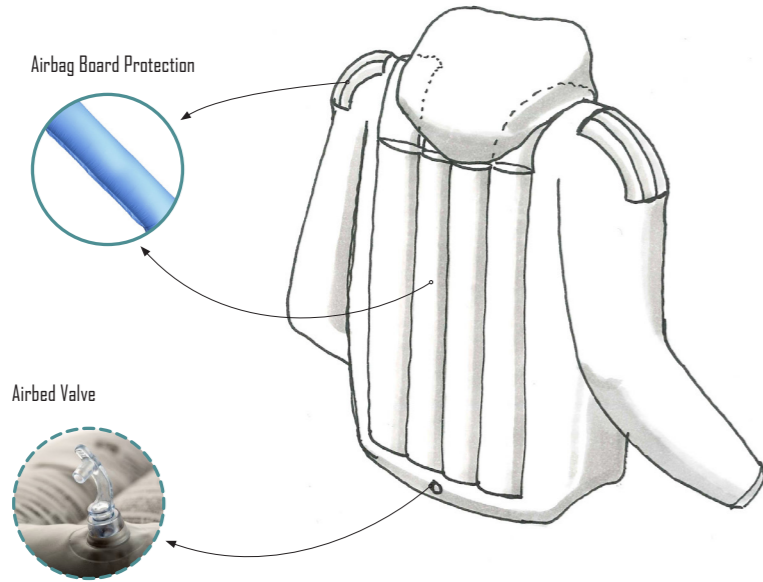
Surfboards are very fragile and easily break during transport.



Likeability	1	2	3	4	5
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.7

// Integrated inflatable airbag to protect the user during extreme sports



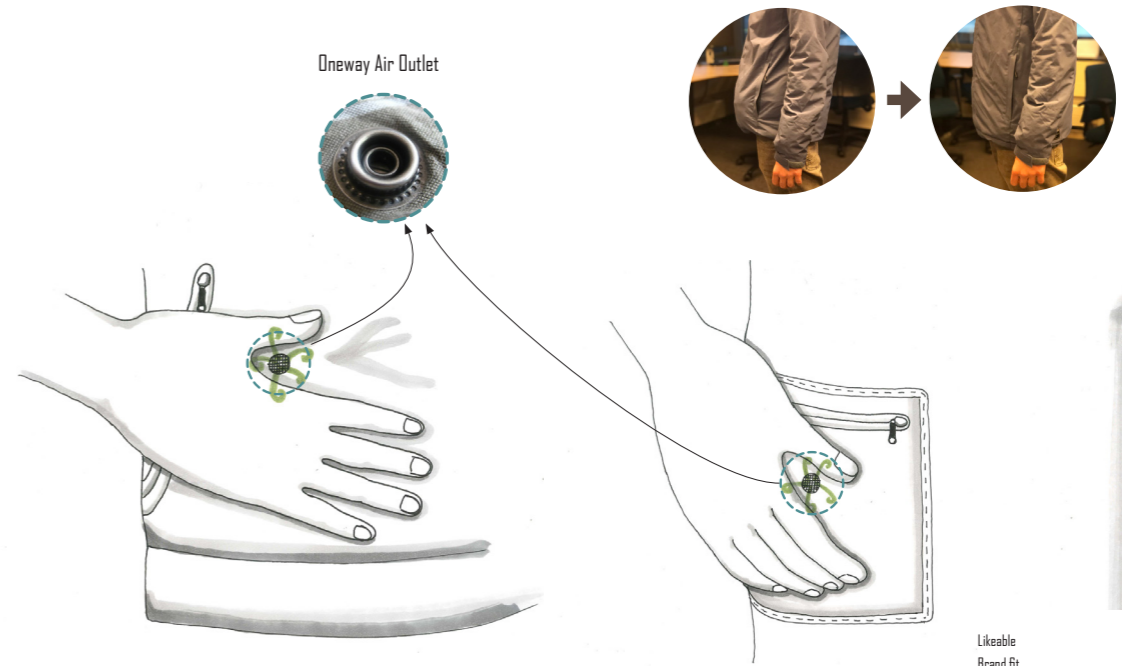
Decide whether you need extra protection and inflate your jacket.

	1	2	3	4	5
Likeability	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.3



// Oneway air outlet to push out unwanted air

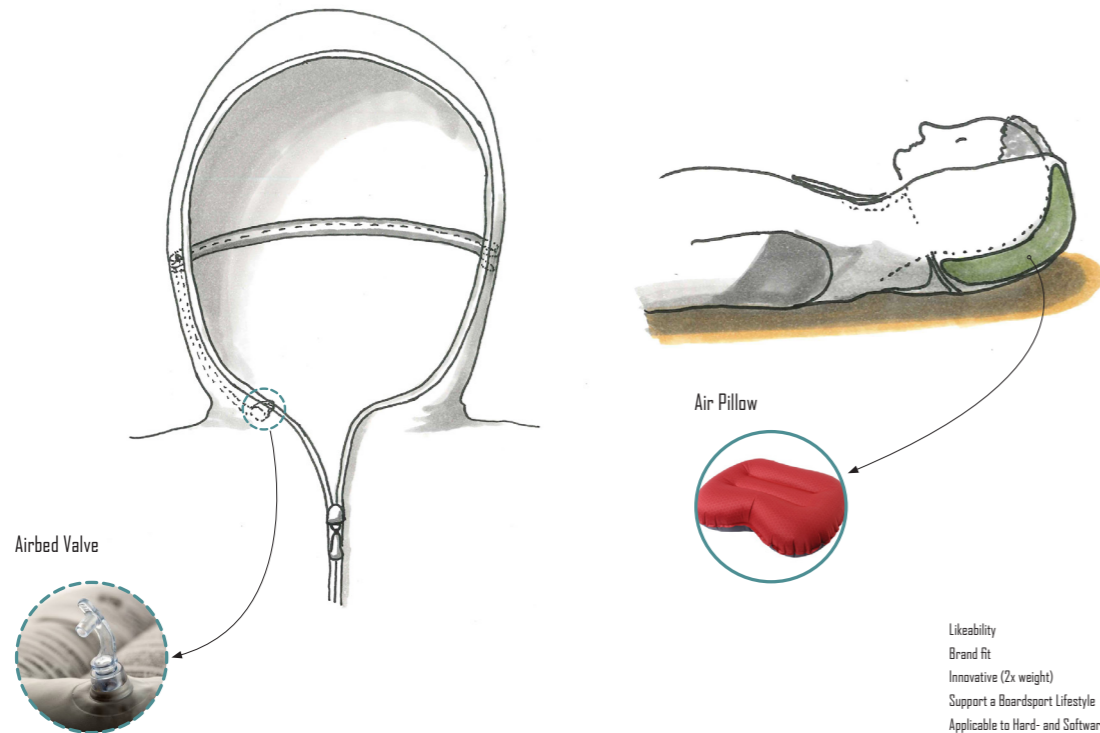


	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.0



// Integrated air pillow in sweater/jacket for relaxing and travelling



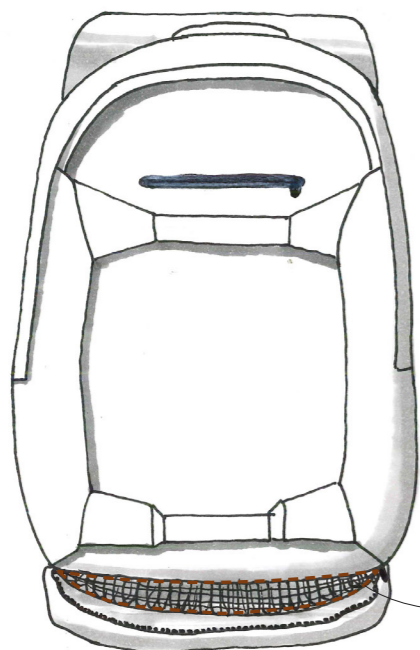
	1	2	3	4	5
Likeability	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.2



// EARTH //

// Sand- and dust permeable fabric to easily remove dirt from bag



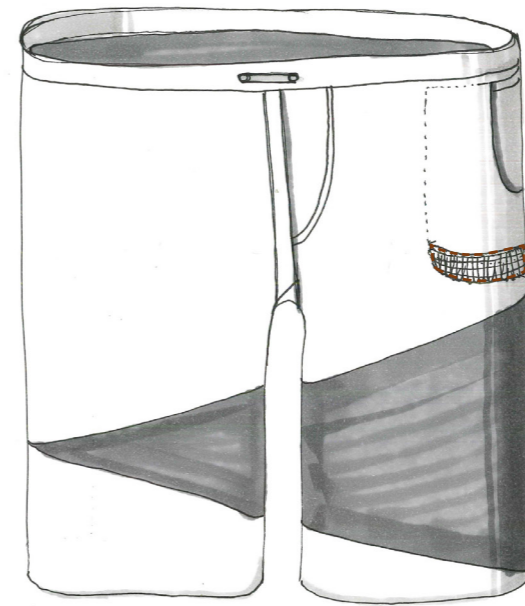
Sand- and Dust Permeable Fabric

“ Sand gets everywhere, practising surfing or at the beach in general. ”

	1	2	3	4	5
Likeable	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.2

// Sand- and dust permeable fabric to easily remove dirt from pockets



Sand- and Dust Permeable Fabric

“ Sand gets everywhere, practising surfing or at the beach in general. ”

	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.2

// Integrated sand- and dust permeable mat in board bag for comfortable changing

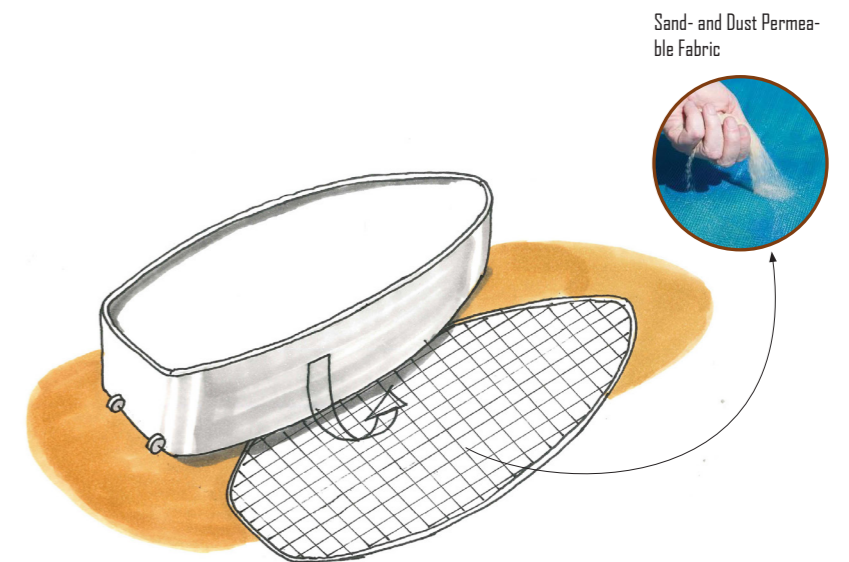


“ Wetsuits always get dirty when you change at the beach. ”

“ Sand gets everywhere, practising surfing or at the beach in general. ”



Keep yourself sand-free while changing.



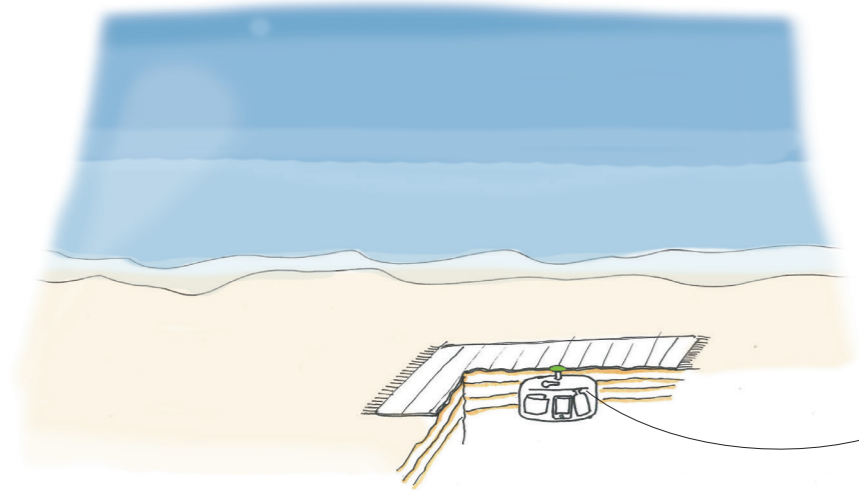
Sand- and Dust Permeable Fabric

	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

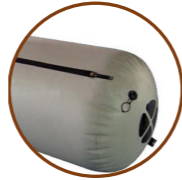
Score: 3.0

// Burial bag to hide your valuable belongings

During a surfing session and when going to the beach in general, it is hard to keep your (electrical car-) keys and money save and dry.



Airtight (non-sand permeable) bag with recognisable ending

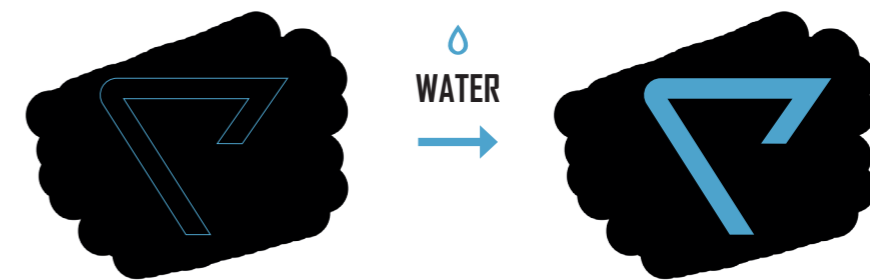


	1	2	3	4	5
Likeability	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.5

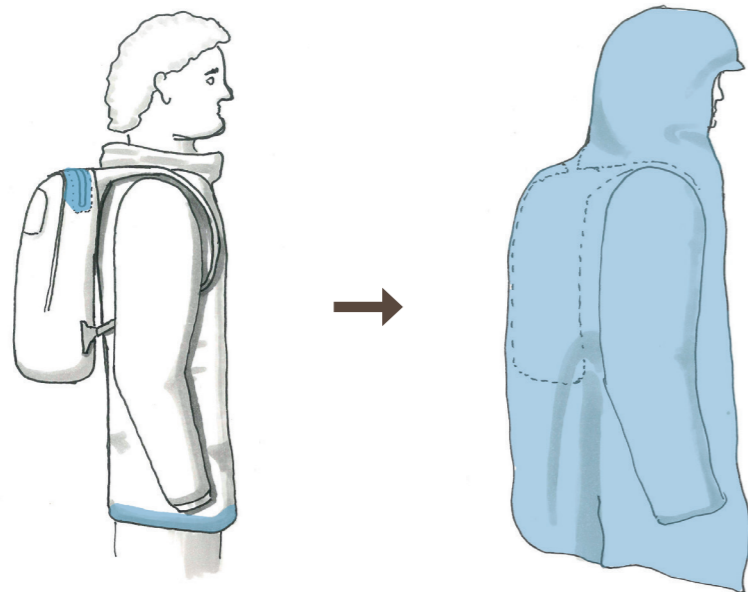


OPERATION INDICATOR



Hydrochromic Ink

// Integrated poncho in back pack / jacket



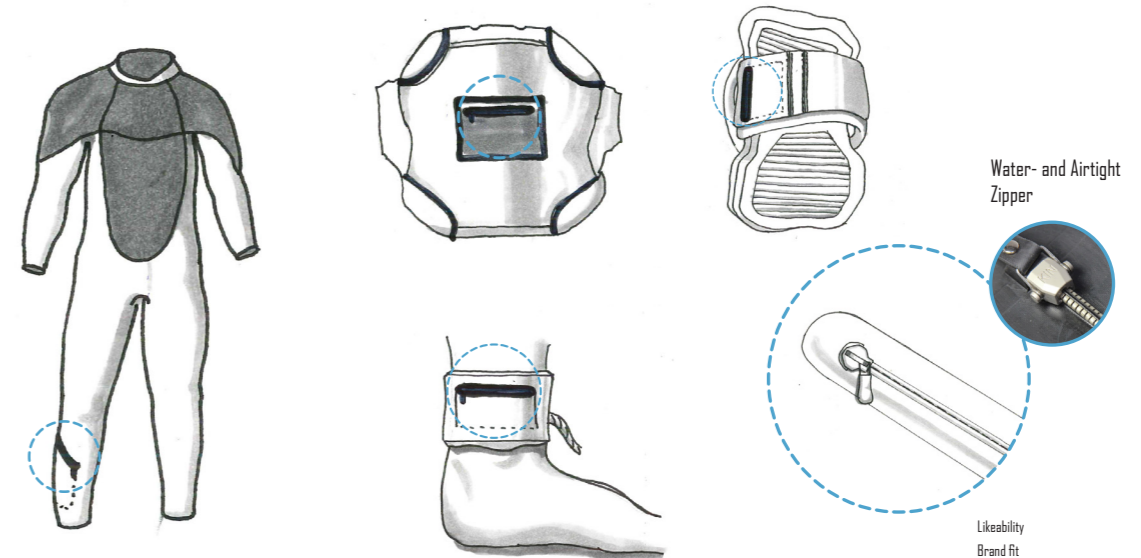
	1	2	3	4	5
Likeability	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.8

// Fully water tight zippers to protect pocket content in water/snow



During a surfing session and when going to the beach in general, it is hard to keep your (electrical car-) keys and money safe and dry.

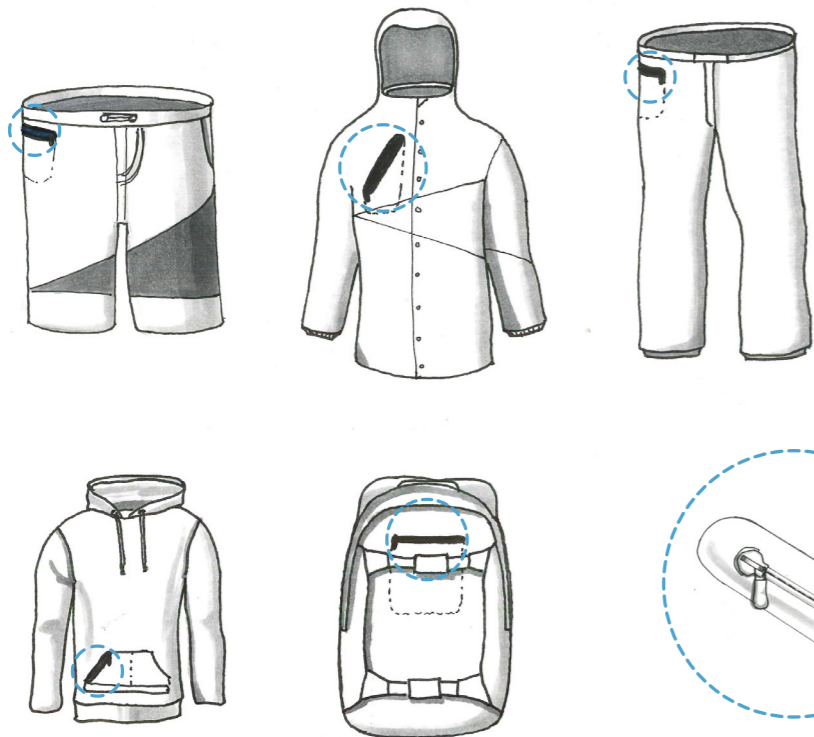


Water- and Airtight Zipper

	1	2	3	4	5
Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 5.0

// Fully water tight zippers to protect pocket content in water/snow



Water- and Airtight Zipper

During a surfing session and when going to the beach in general, it is hard to keep your (electrical car-) keys and money safe and dry.

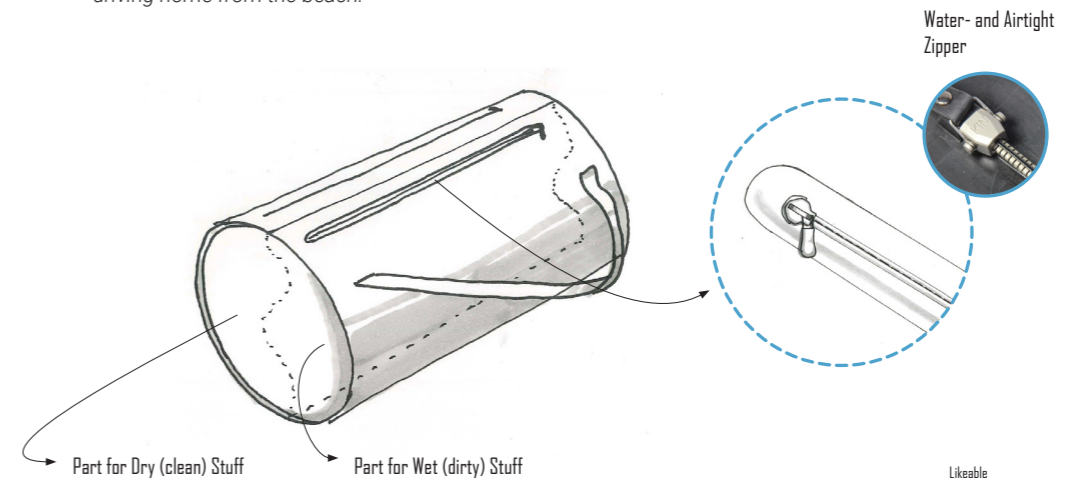
	1	2	3	4	5
Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 5.0

// Fully water tight zippers to protect pocket content in water/snow



Where do I leave all my wet stuff after surfing?
My car always gets wet after driving home from the beach.



Water- and Airtight Zipper

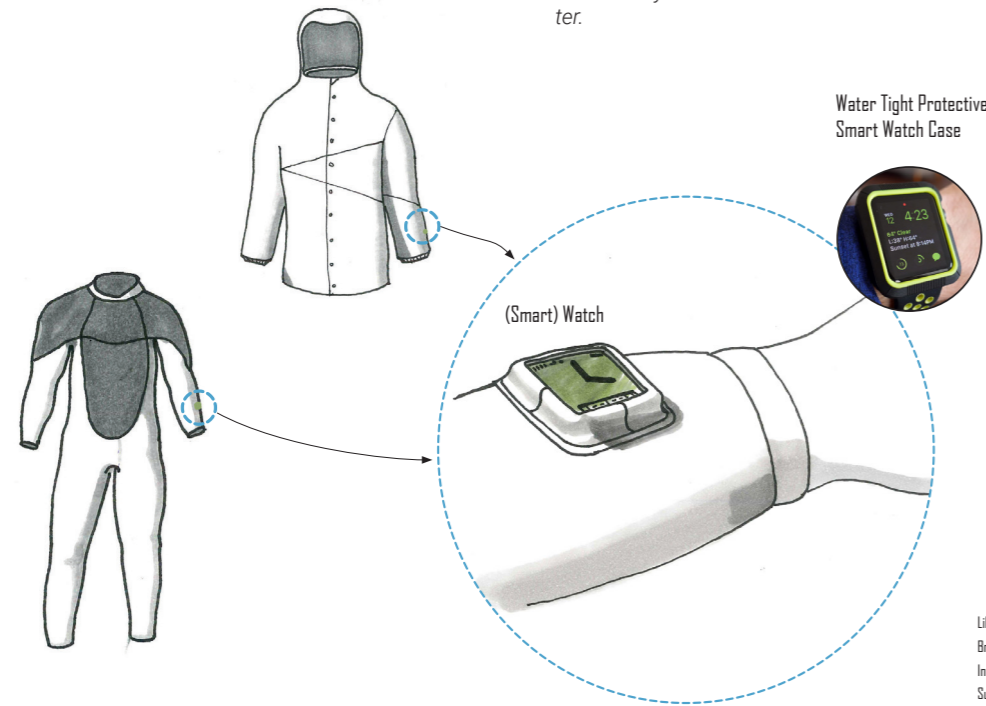
	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.7

// Integrated water- and air proof smart watch holder



It is hard to keep track of time while you are in the water.



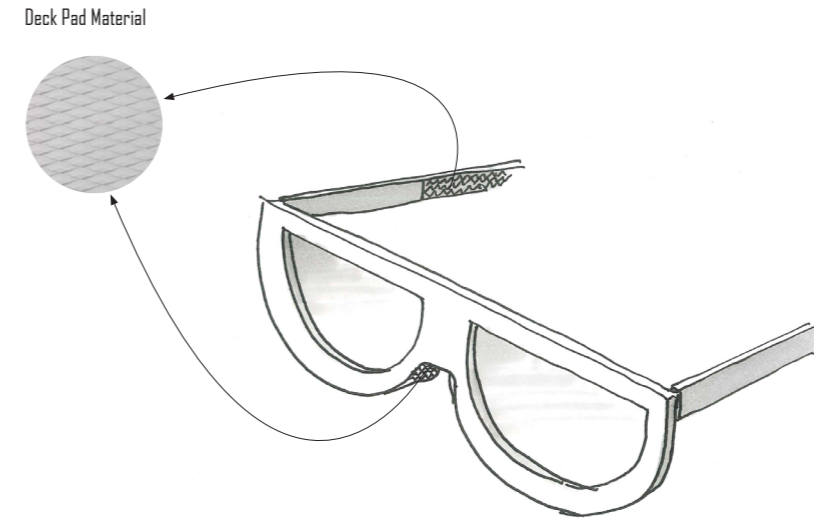
Likeable	○	○	○	○	●
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.5

// Soft top (deck pad) finish to prevent Glasses from slipping off



Prevent Glasses from slipping off nose when sweaty.



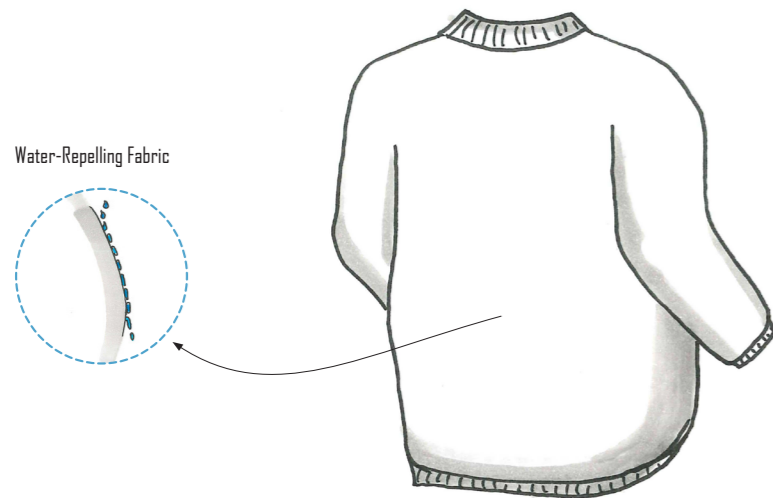
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.2

// Water-Repelling finish to prevent fabrics from getting wet and dirty



Water-Repelling Fabric



Prevents clothes from getting wet/dirty.

Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

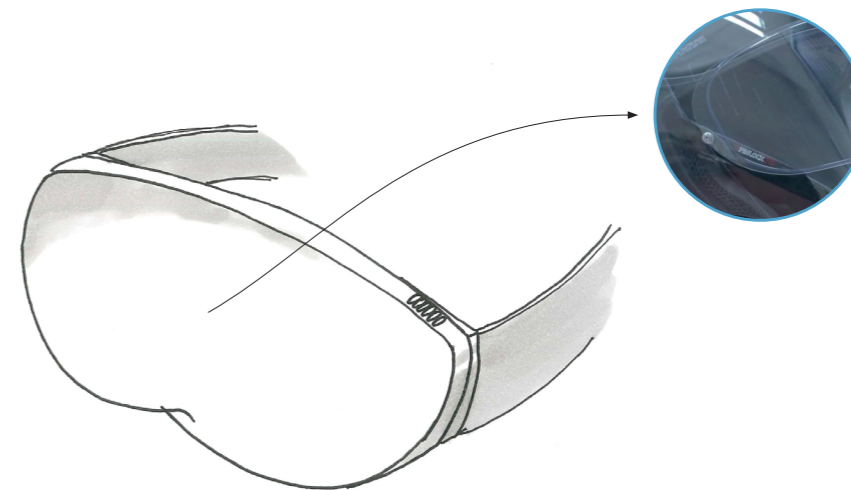
Score: 2.2

// Pinlock layer in skigoggles that prevents condens



You always get condens on your goggles, even with those anti-condens ones.

Pinlock Anti-Condens visor

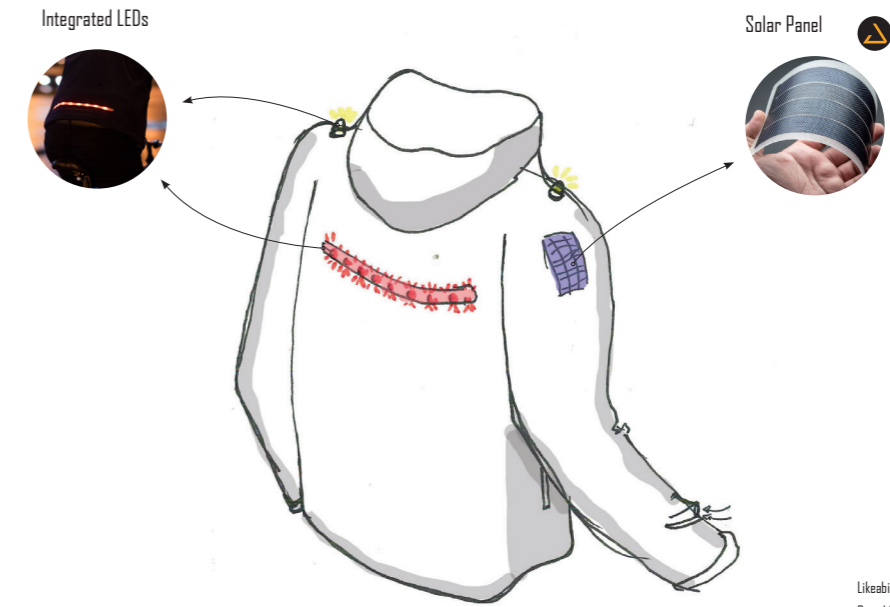


Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.2



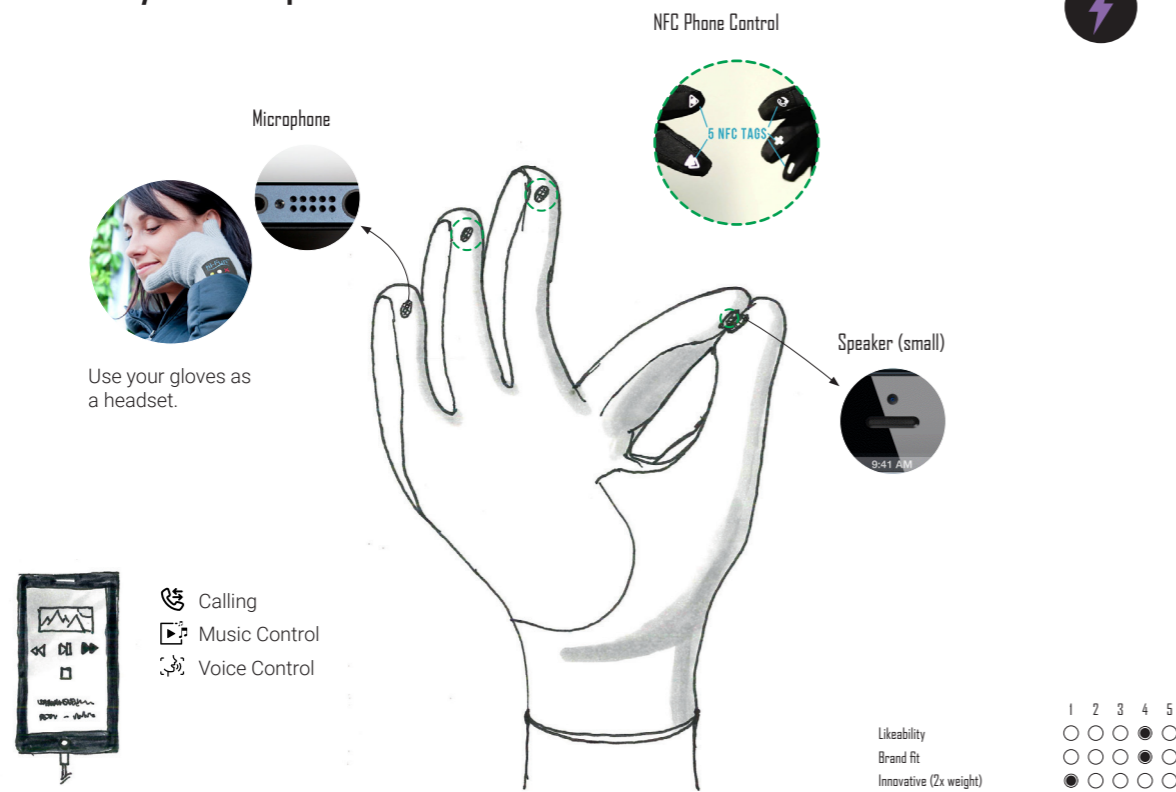
// Integrated LEDs for safety and recognisability



	1	2	3	4	5
Likeability	○	○	○	●	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.8

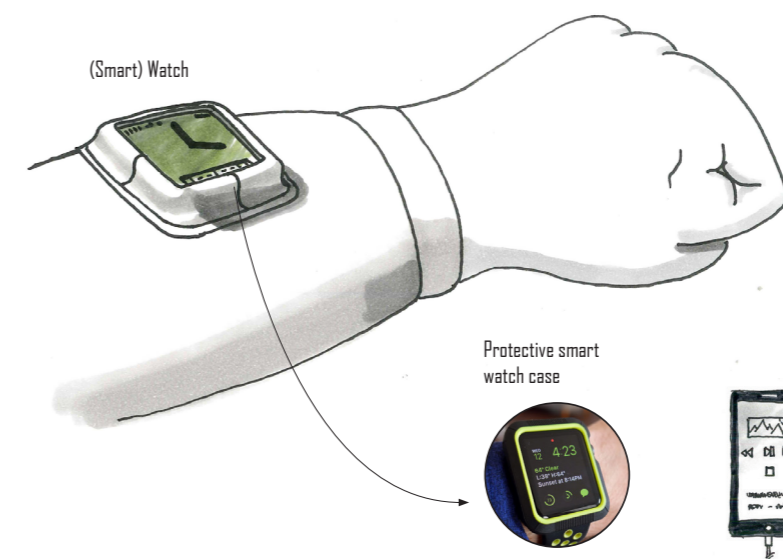
// Glove to control your smart phone and call with



	1	2	3	4	5
Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.7

// Integrated water- and air proof smart watch holder



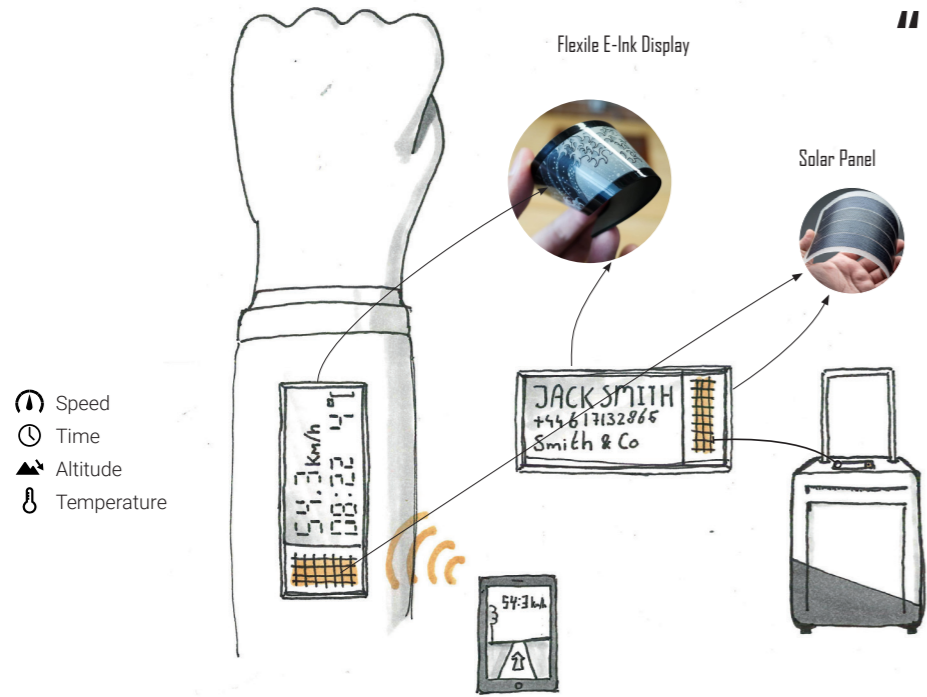
It is hard to keep track of time while you are in the water.

- Speed
- Time
- Altitude
- Temperature

	1	2	3	4	5
Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.2

// Integrated display for real-time information - flexible black & white E-ink

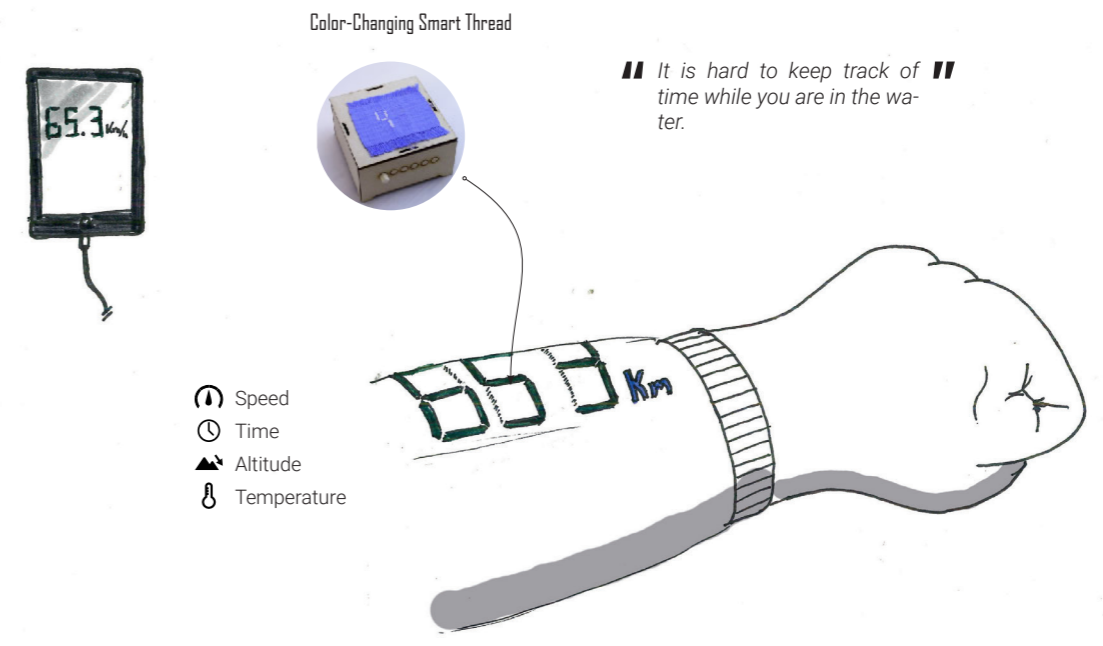


It is hard to keep track of time while you are in the water.

Likeable	1	2	3	4	5
Brand fit	○	○	○	○	●
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.0

// Integrated sleeve display for real-time information - smart thread

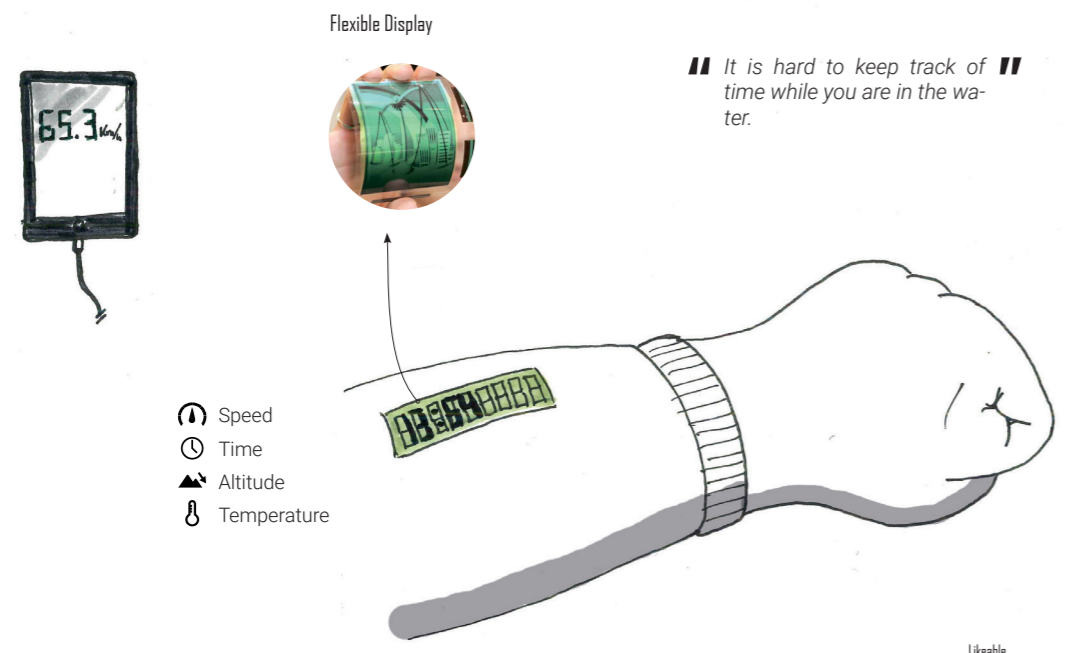


It is hard to keep track of time while you are in the water.

Likeable	1	2	3	4	5
Brand fit	○	○	○	○	●
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 5.0

// Integrated sleeve display for real-time information - flexible

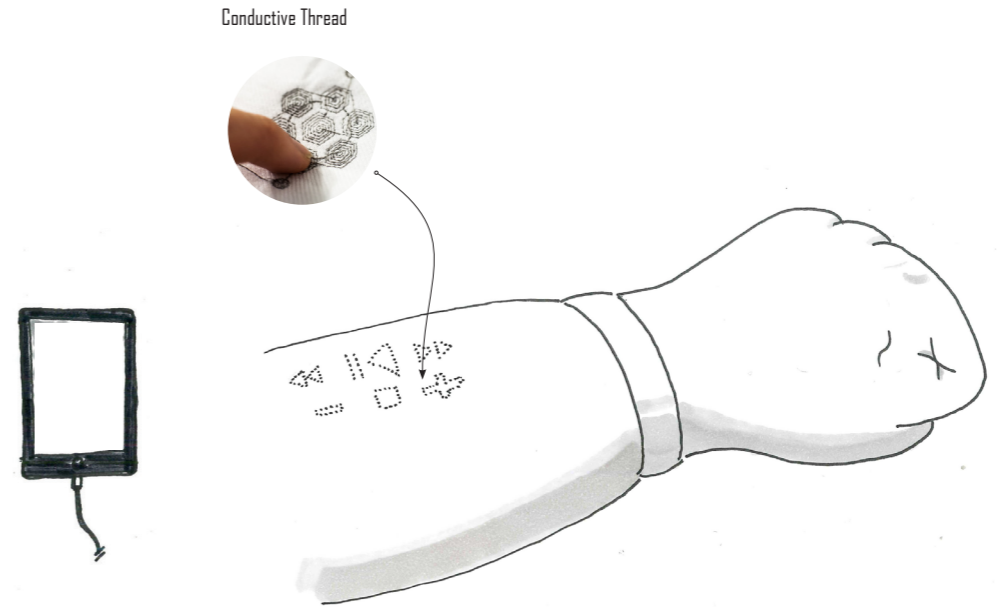


It is hard to keep track of time while you are in the water.

Likeable	1	2	3	4	5
Brand fit	○	○	○	○	●
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 4.0

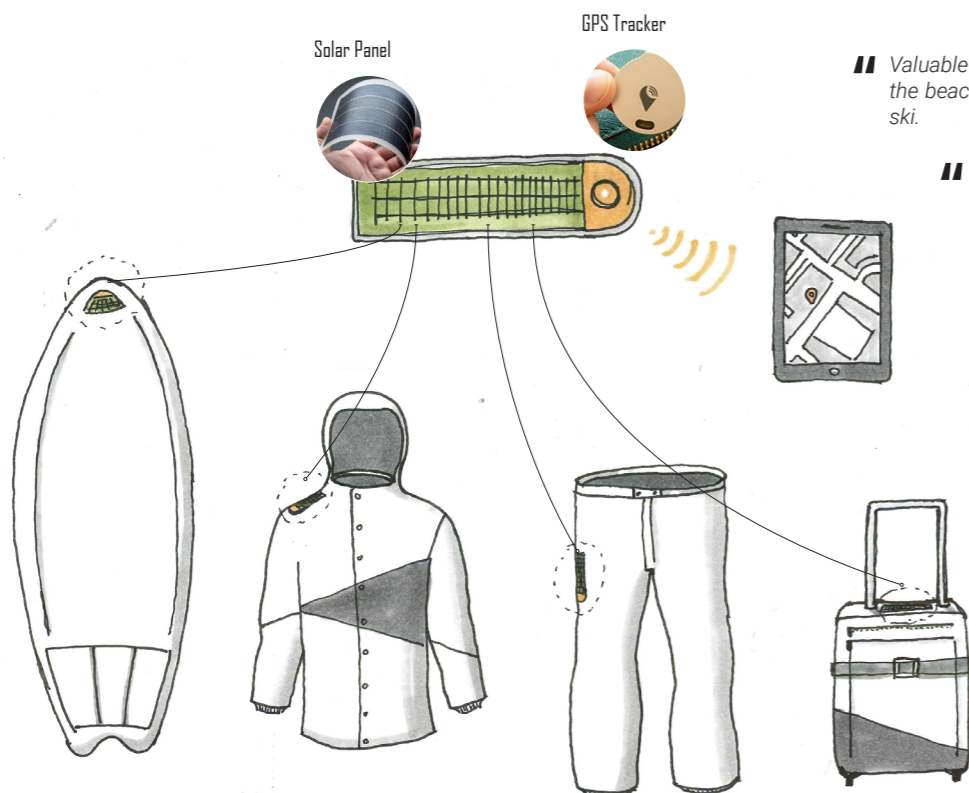
// Integrated conductive thread to control your smart devices with



Likeable	1	2	3	4	5
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0

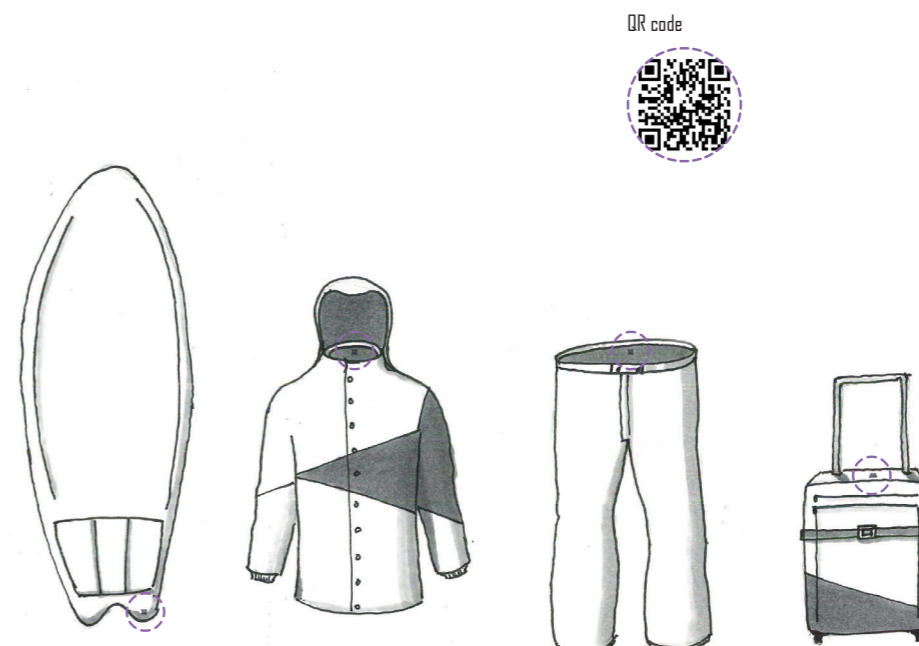
// Solar powered GPS trackers to never lose your stuff/friends



Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.5

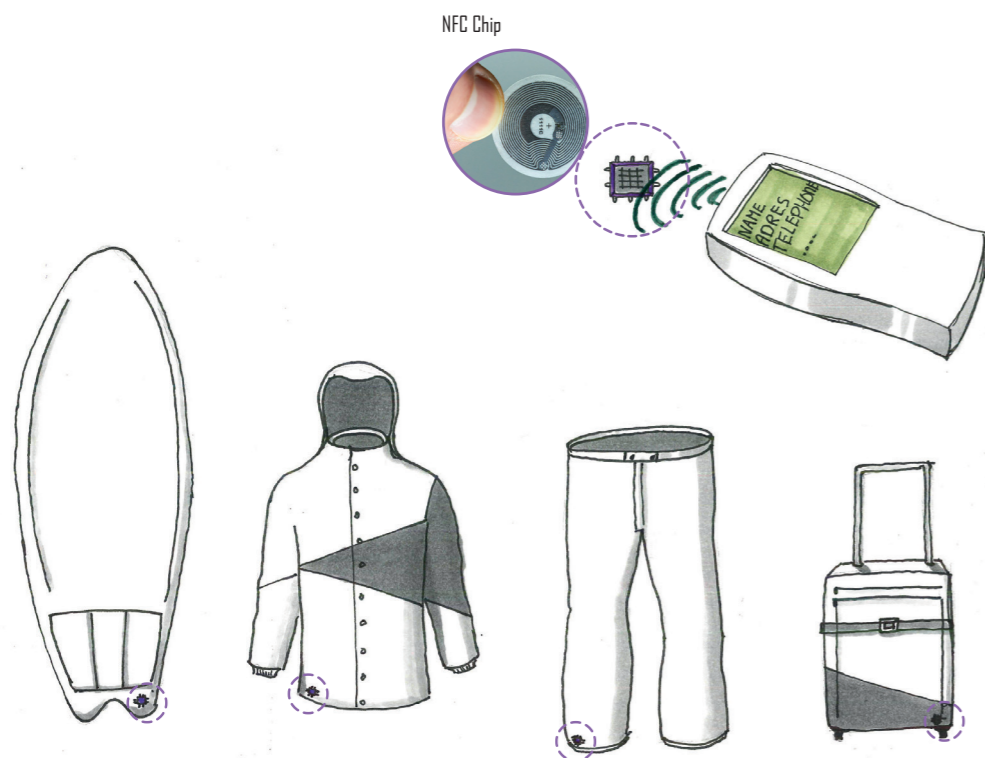
// QR codes link products to owners with Brunotti's database



Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.3

// Intergrated NFC chips that contain owner's information



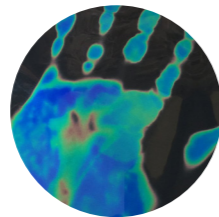
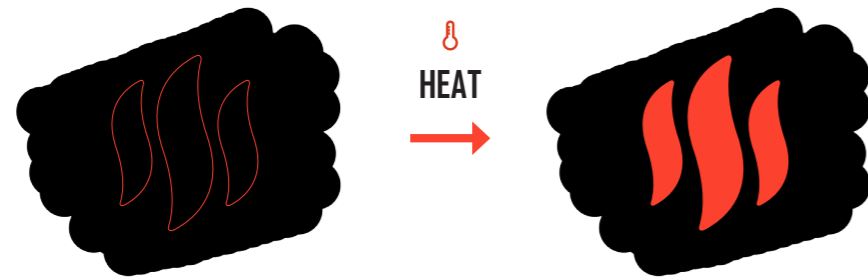
Likeability	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.3



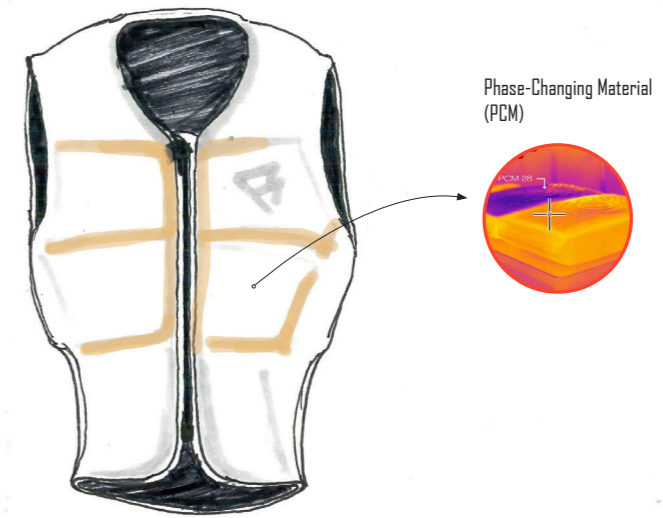
// HEAT //

OPERATON INDICATOR



Thermochromic Ink

// PCM in wake vest to control upper body temperature



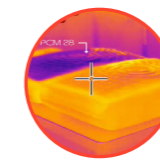
Likeability	○	○	○	○	○
Brand fit	○	●	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0

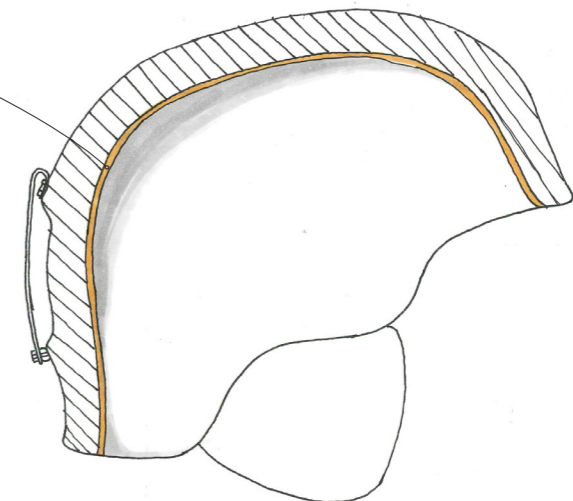
// PCM in helmet to control head temperature



Phase-Changing Material (PCM)



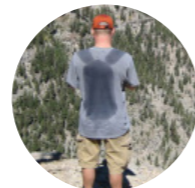
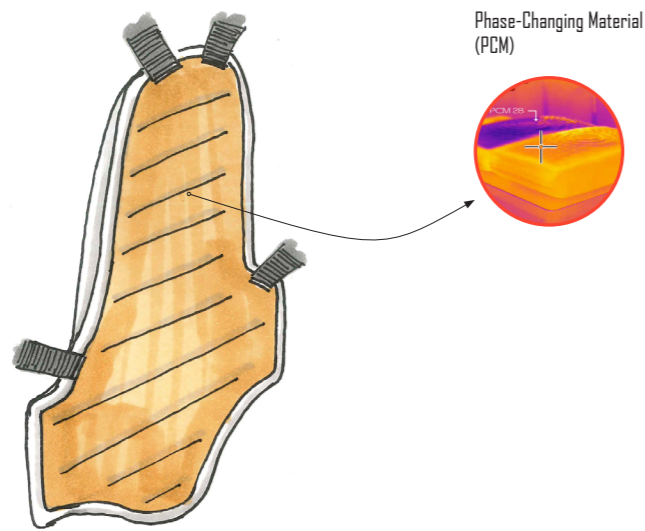
Avoid a sweaty head/ hair.



Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0

// PCM in back protector to control upper body temperature



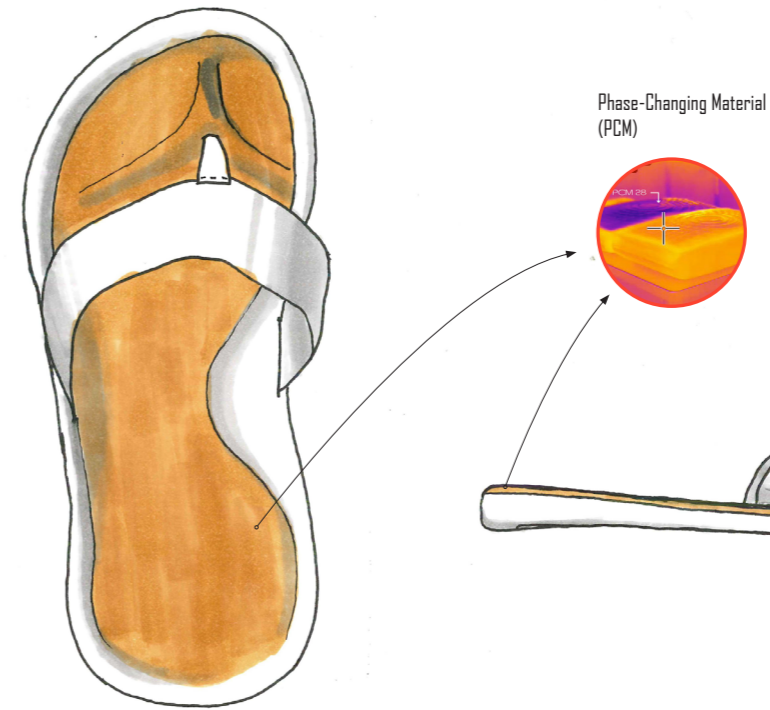
Avoid a sweaty back

Likeable	○	○	●	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0



// PCM in footwear to control feet temperature



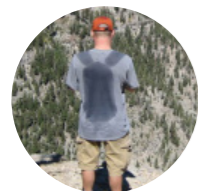
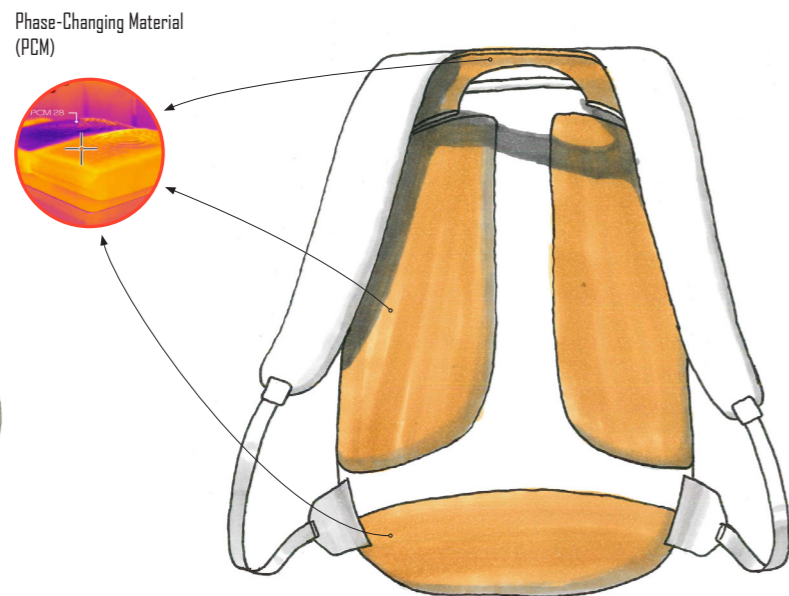
Avoid sweaty feet

Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0



// PCM in back pack padding to control back/shoulder temperature



Avoid a sweaty back

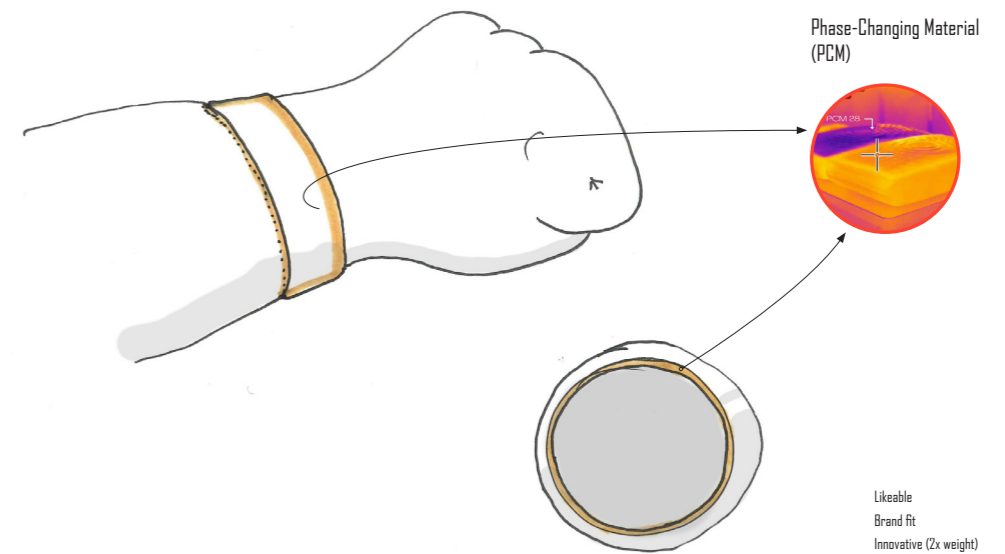
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0



// PCM in sleeve band to control body temperature

“ It seems like you are always either too cold “
or too hot during a surfing

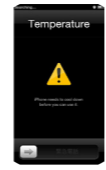
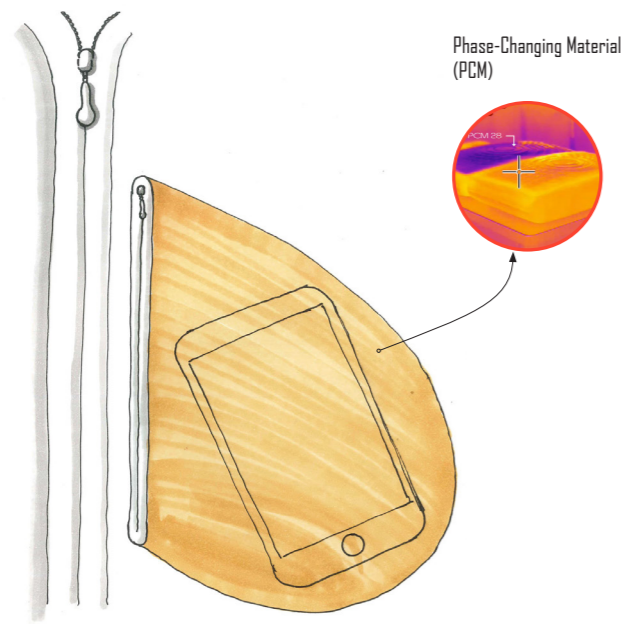


Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0



// PCM in pocket to control phone temperature



Prevent phone from overheating and undercooling

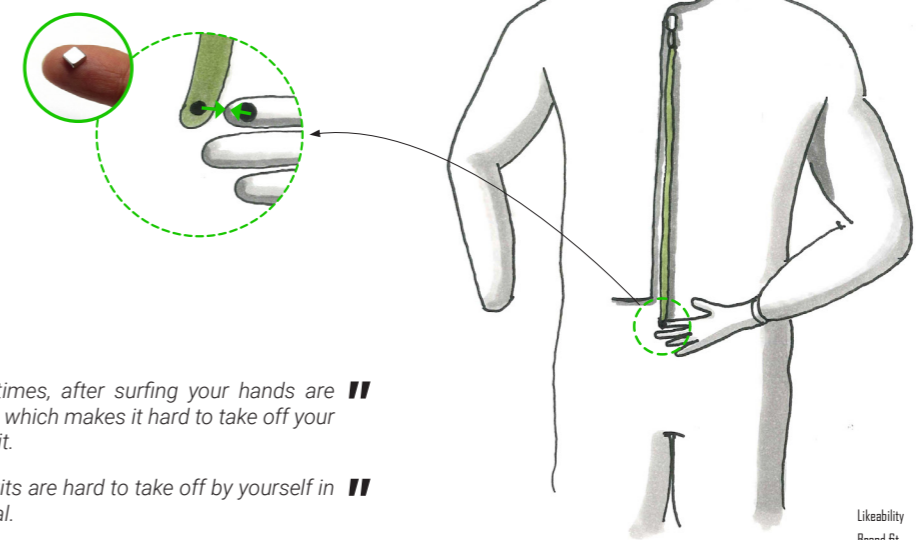
	1	2	3	4	5
Likeable	○	○	●	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 3.0



// Magnets in (surf) glove and (wetsuit) zipper to easily get a grip

Small Magnets



“ Sometimes, after surfing your hands are numb, which makes it hard to take off your wetsuit.

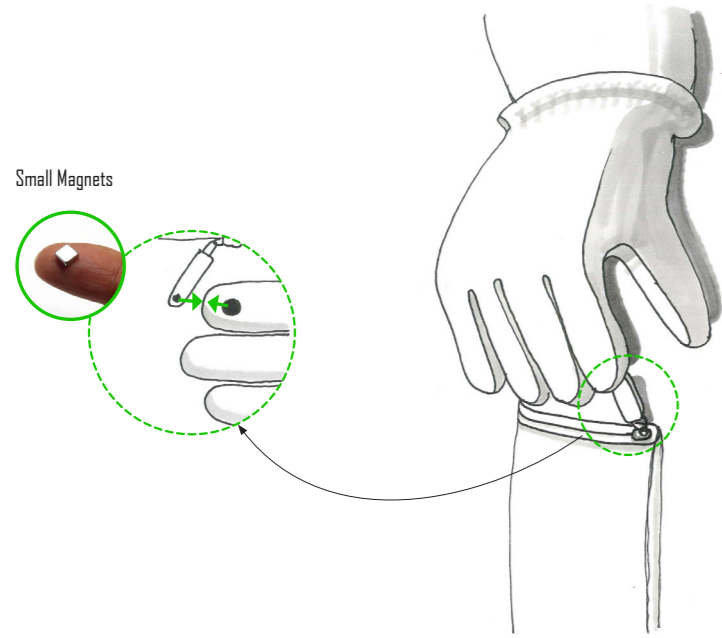
“ Wetsuits are hard to take off by yourself in general.

	1	2	3	4	5
Likeability	○	○	●	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.2



// Magnets in (snow) glove and zipper to easily get a grip



Small Magnets



	1	2	3	4	5
Likeability	○	○	●	○	○
Brand fit	○	●	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	●	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

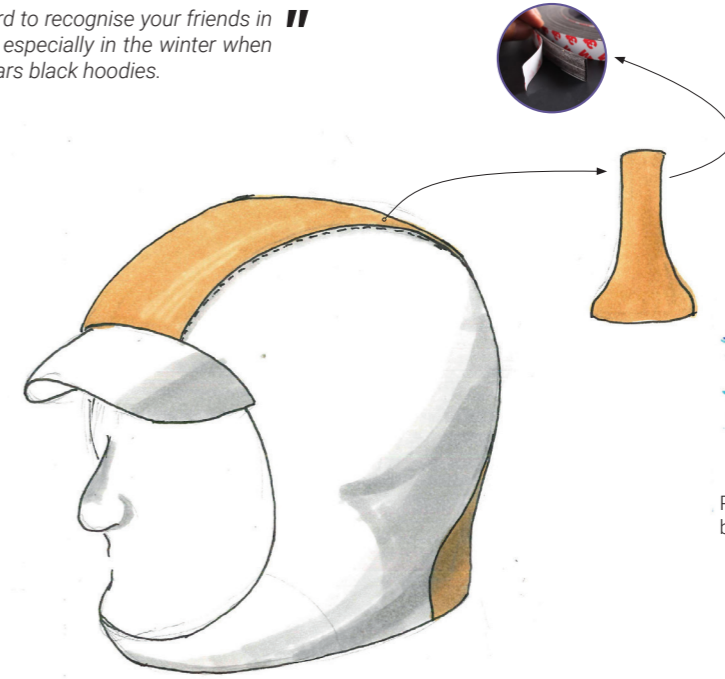
Score: 2.2



// Customised wetsuit hoodie for recognisability



It is really hard to recognise your friends in busy waters, especially in the winter when everyone wears black hoodies.



Custom Coloured Magnet Strip



Recognise your friends in busy water.

	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

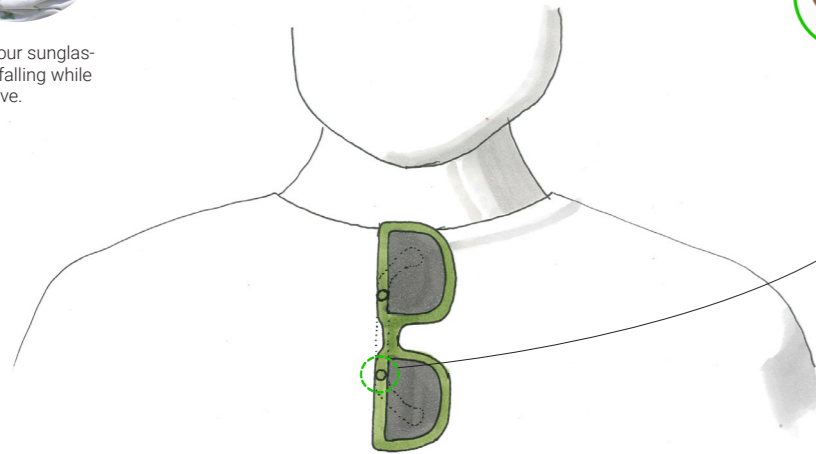
Score: 2.3



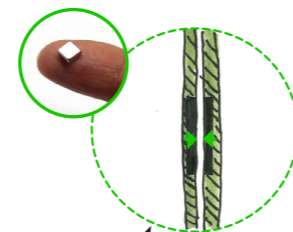
// Magnets in sunglasses to easily keep them in place



Prevent your sunglasses from falling while being active.



Small Magnets

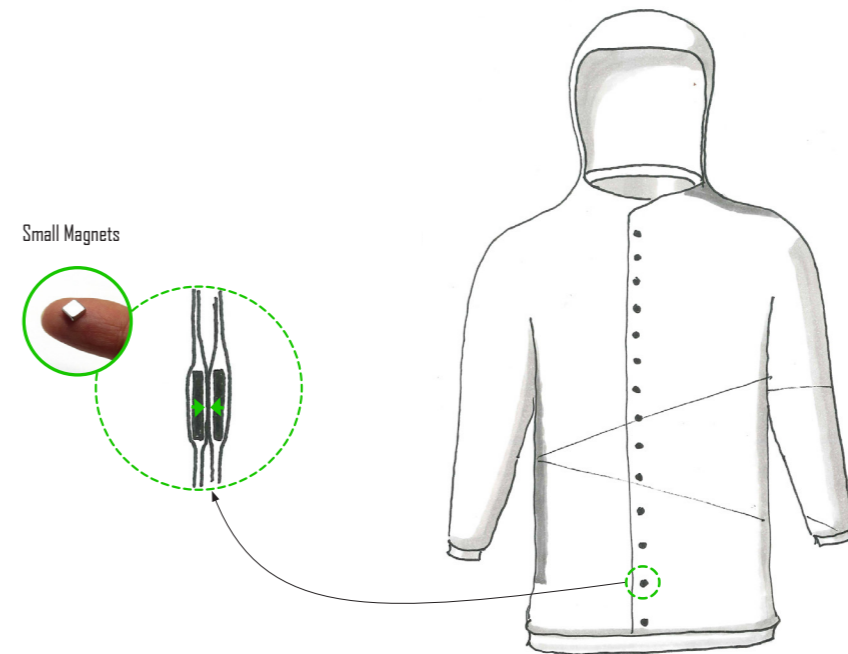


	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

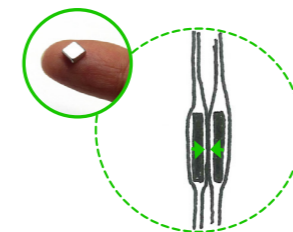
Score: 2.7



// Magnets in jacket for easy closure



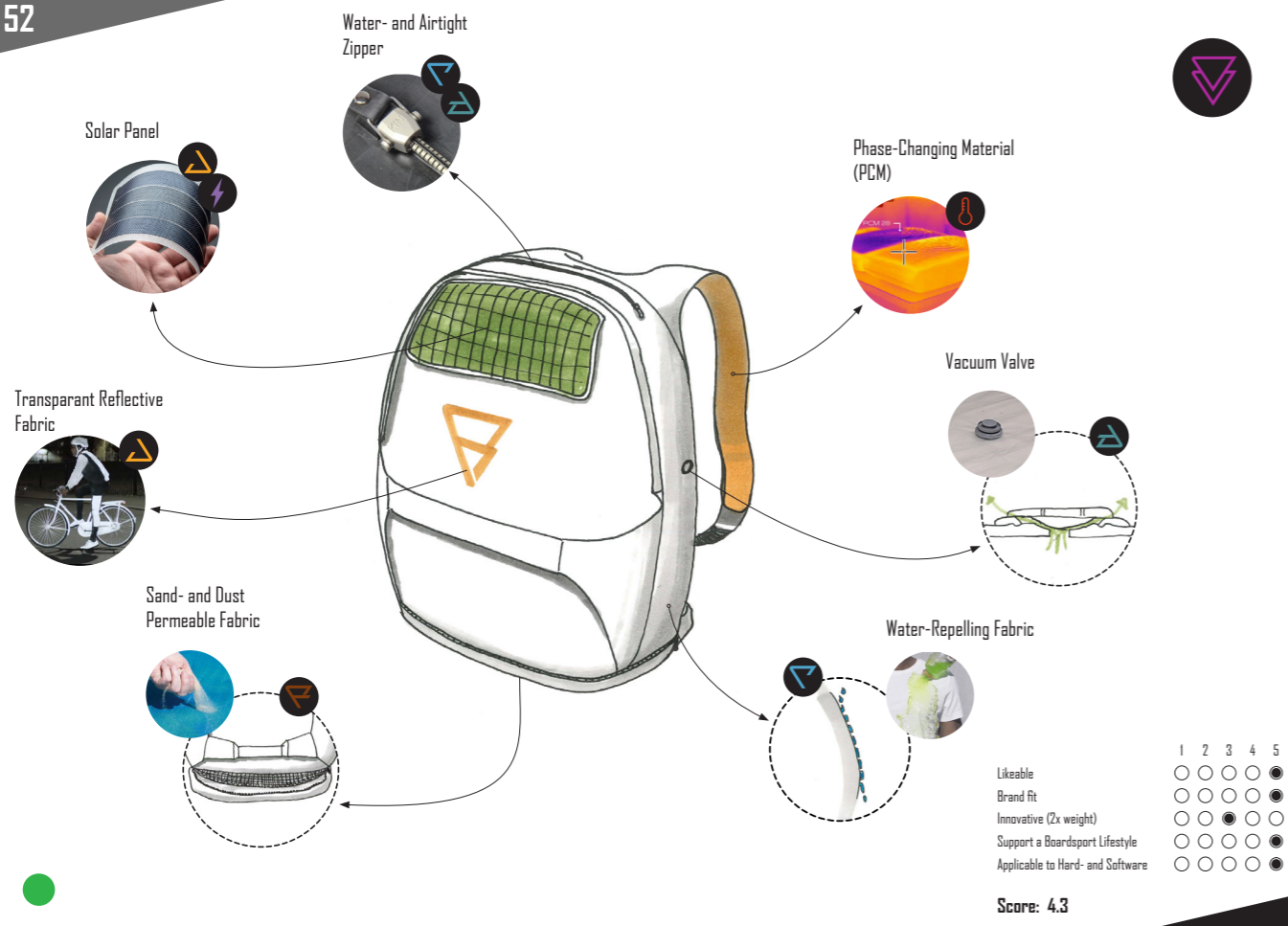
Small Magnets



	1	2	3	4	5
Likeable	○	○	○	○	○
Brand fit	○	○	○	○	○
Innovative (2x weight)	○	○	○	○	○
Support a Boardsport Lifestyle	○	○	○	○	○
Applicable to Hard- and Software	○	○	○	○	○

Score: 2.0







// SUN

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
01 & 02	5	4	1	5	2	3,0
03	5	5	3	4	2	3,7
04	2	2	1	2	2	1,7
05	2	4	2	4	2	2,7
06 & 07	4	3	1	2	1	2,0



// AIR

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
08	2	2	1	2	1	1,5
09	5	5	4	4	2	4,0
10 & 11	5	5	5	5	4	4,8
12	3	4	3	2	2	2,8
13	5	5	5	5	3	4,7
14	4	5	5	5	4	4,7
15	4	3	1	3	2	2,3
16	5	3	2	4	3	3,2
17	2	2	3	1	1	2,0



// EARTH

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
18 & 19	5	5	3	5	4	4,2
20	3	4	2	4	3	3,0
21	5	5	5	3	4	4,5



// WATER

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
22	4	2	3	2	3	2,8
23 & 24	5	5	5	5	5	5,0
25	5	5	2	4	4	3,7
26	5	5	4	4	5	4,5
27	3	4	1	2	2	2,2
28	2	2	3	1	1	2,0
29	3	2	2	2	2	2,2



// ELECTRICITY

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
30	4	4	1	4	2	2,7
31	4	4	2	2	3	2,8
32	5	5	4	4	3	4,2
33	5	4	4	3	4	4,0
34	5	4	4	3	4	4,0
35	5	5	5	5	5	5,0
36	4	4	2	3	3	3,0
37	4	3	2	2	2	2,5
38	2	2	3	2	2	2,3
39	2	2	3	2	2	2,3



// HEAT

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
40	3	2	4	2	3	3,0
41	3	2	4	2	3	3,0
42	3	2	4	2	3	3,0
43	3	2	4	2	3	3,0
44	3	2	4	2	3	3,0
45	3	2	4	2	3	3,0
46	3	2	4	2	3	3,0



// MAGNETISM

	Likeable	Brand Fit	Innovative	Support BSL	Appl. to H&A	
47 & 48	3	2	2	2	2	2,2
49	3	2	3	2	3	2,7
50	2	2	2	2	4	2,3
51	3	3	1	2	2	2,0
						4,3
52	5	5	3	5	5	4,3