

FASHION

VICTIMS



Title: Fashion victim: *iron*

Bachelor Final Assignment

Student: R.G. Herder
Mentor University of Twente: ing. R.E. Wendrich
Mentor Philips Design Amsterdam: ir. J.-P. van der Voet
E. van Houdt

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Fashion appendix

Visual appendix

Philips Design Amsterdam

Piet Heinkade 55
P.O. Box 850
1000 AW Amsterdam
The Netherlands

Universiteit Twente

Postbus 217
AE Enschede
The Netherlands



Prologue

This thesis is the result of three months of research at Philips Design Amsterdam for the Bachelor final thesis of the University of Twente. I was in a position to work with the Visual Trend Analysis department, the Innovation department as well as the Product Design department.

During this period I learned that it is difficult to have an undefined assignment, but that it can also lead to new insights for both student and company. I appreciate that I was free to create my own vision.



Abstract

The Garment Care department of Philips Design Amsterdam asked for inspiration and product proposals for the future of women garment care linked to fashion. The goal of this thesis is to inspire Philips by having a closer look into the link between ironing and fashion.

This research includes three different investigations. The first one is about the link between fashion trends and ironing. The second one is about the future of garment and technologies. The third one is about what this means for garment care products and other related products.

Visual trends

Fashion trends show decoration, drapes and pleats which are hard to iron. Others like delicate fabrics, vitamine finishes and metallic finishes could be easily damaged by an iron or washing machine. The results of this investigation can be found in the 'Fashion appendix'.

Mind-set

The fashion trends above mentioned introduce three mind-set directions, freedom, personal and harmony. Comfortable and protective garment and easy to care fabrics are emerging on catwalks and in the streets. People fight back the mass production and consumer society by wearing heartwarming, imperfect and unique clothes. Customers are concerned about the earth's wellbeing and the exploitative fashion industry.

Garment future

The three mind-set directions are the guides for the future garment investigation. The future of garment shows all fashion related technological developments. This investigation also shows that there is a lot potential in this area.

Examples of interesting developments are growing garment, virtual shopping experiences and nonwovens.

Product ideas

The product ideas are the result of a combination of the fashion trends and mind-set trends with future technologies. The ideas can be classified in 4 directions: treatment, personal care and prosumption.



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Chapter 1 Introduction

1.1 Introduction

This thesis is written in order of the Garment Care department of Philips Design Amsterdam. Basically this thesis contains future garment care product ideas based on the future of garment and fashion trends. The goal is to inspire Philips by having a closer look into the link between ironing and fashion.

Chapter one introduces this research with the definition of the assignment and the problem.

Chapter two pictures the fashion trends up to 2010. These fashion trends show the existence of three mind-sets.

To have a clear insight into the future of garment is provided by chapter three.

Chapter four integrates the future of garment and fashion which leads to product ideas.

Chapter five includes the conclusions and recommendations.

1.2 Assignment

The Garment Care department of Philips Design Amsterdam asked for inspiration and product proposals for the future of women garment care linked to fashion.

The Garment Care department of Philips nowadays is mainly about ironing.

2.2 Actor analysis

Royal Philips has several departments, Healthcare, Lighting and Consumer Lifestyle. This assignment is part of the Consumer Lifestyle at the design department in Amsterdam.

The Branch Amsterdam is a multi-client design centre operating under the guidance of the Headquarter based in Eindhoven. It has been established to serve it's main Philips clients located in Amsterdam. The departments Health & Wellness, Domestic Appliances, Shaving and Beauty en Home Environment Care (HEC) are located at Philips Design Amsterdam. This assignment is part of the Garment Care department of the subgroup Home Environment Care. There are several disciplines: Product Design, Innovation, Visual Trends & Analysis - Colour Finishing & Materials and Product Graphics. The VTA department of Garment Care and the Product Design department HEC handle the supervising of this assignment.

Chapter 2 Fashion trends

2.1 Introduction

On the basis of information at fashion blogs, magazines –catwalk news-, and professional trend analysis services a clear picture can be formed of the upcoming fashion trends. The limit of these predictions is approximately 2 years, because collections and couture shows don't go beyond the autumn/winter of 08/09. The advantage of this short term analysis is that the information is detailed.

2.2 Upcoming fashion trends

The upcoming fashion trends are divided into the following directions. More information about the fabrics and visual explanations can be found in the Fashion appendix.

The upcoming fashion innovations and trends can be divided four groups. These groups are mainly based on the fabric trends:

- 1) Arts & crafts
- 2) 3D & surfaces
- 3) Consciousness
- 4) Comfort

These four groups are divided in several subgroups.

1) Arts & crafts

- a) Crochet & lace
- b) Cuts & holes
- c) Add-on
- b) Facetted & exposed seams

2) 3D & surfaces

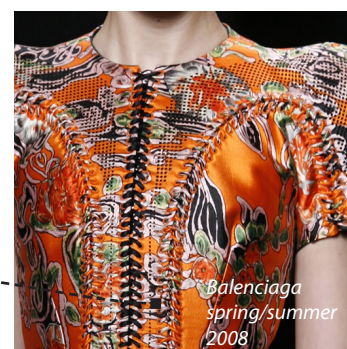
- a) Layers
- b) Permanent wrinkle finishes
- c) Structures
- d) Draped
- e) Embossed & 3D
- f) Metallic / wetlook

3) Consciousness

- a) Natural
- b) Re-used
- c) Personal & imperfection
- d) Dynamical surface

4) Comfort

- a) Protection & health
- b) Synthetics
- c) Soft & glossy
- d) Yoga
- e) Wooly & cosy
- f) Weightless & skin
- g) Transparent



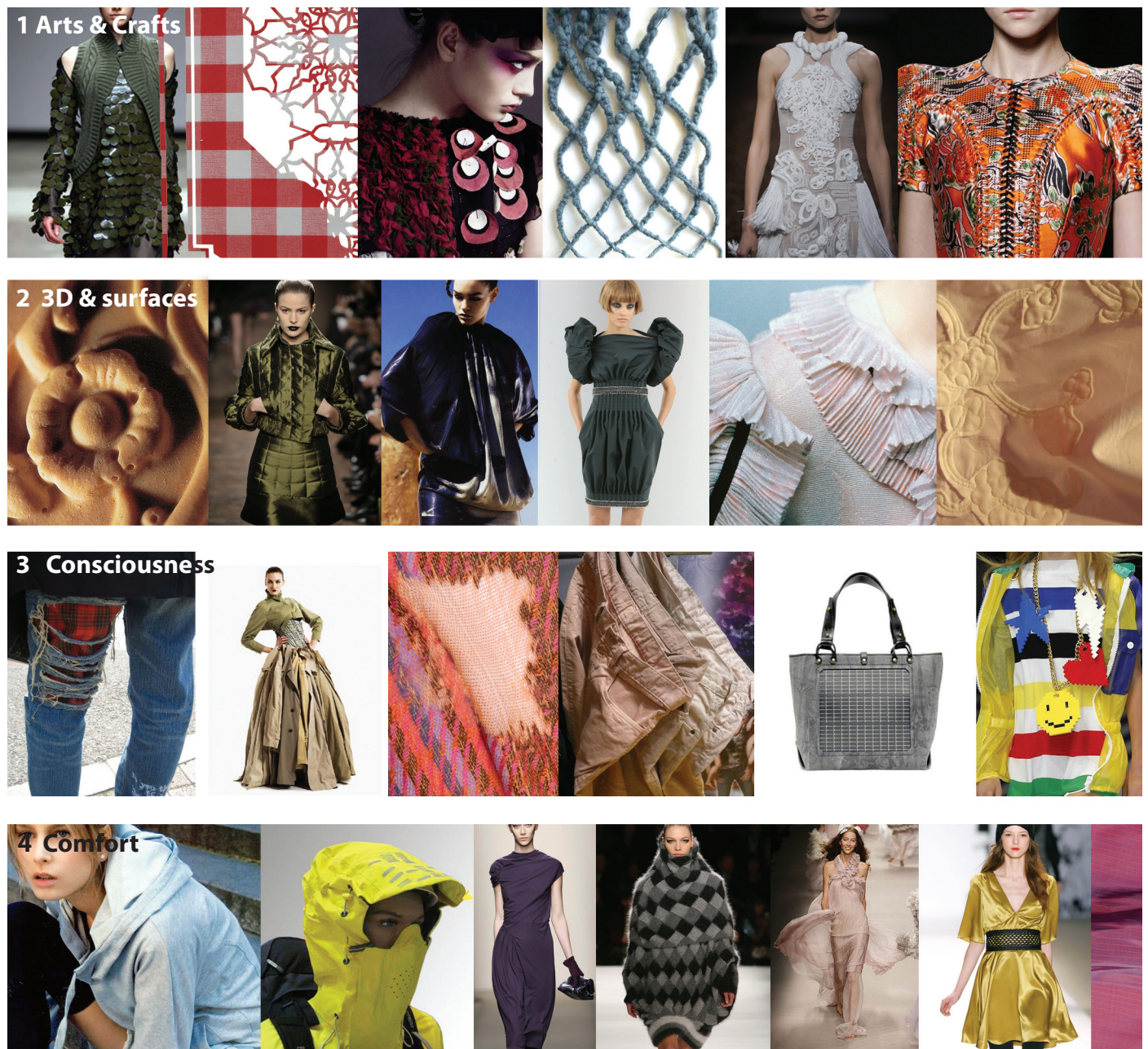
More information about these trends can be found in the Fashion Appendix.

The shapes of the clothes become more and more complicated, a lot of decoration is added on, pleats and drapes are no exception. Fabrics are delicate, have protective membranes, vitamine finishes or a metallic finishes. An iron or a washing machine could damage these looks and special finishes easily. A lot of fabrics ask for a polite treatment like steaming.

Three big movements are noticed. A lot of fashion brands are involved in using nature-friendly fabrics and natural dyes. It seems like sustainability in fashion is not only a look but also mind-set. Another outstanding direction is the use of comfortable fabrics like silk, satin, lightweight wool or fieratex. Clothes not are not just comfortable but also contain protective functions. The final one is the 'back to the roots'-movement with the use of old craft techniques, the use of lace, crochet and embroideries. This derrection is also about self-knitting and repair clothes a personal way which is been spotted in the streets of large cities.

Actually only the 3D&Surfaces direction is a real visual-only direction, the other three are the representations of three mind-set directions.

Visual abstract



2.3 Mind-set directions

Fashion is about a lot more than just fashion. Fashion is culture, lifestyle, aspirations and personality. The way people think is the way people get dressed. Therefore fashion trend research doesn't only lead to fashion trends but also shows the evolution of consumer attitudes.

The three fashion directions found are 'Comfort', 'Personal' and 'Consciousness'. Of these directions the fashion examples of the consumer attitudes and examples from the fashion industry will be given. The evolutions of these directions move towards the mind-set directions called 'Freedom', 'Yourself' and 'Harmony' which represent the consumer desires. Information about the mind-set directions is given in the following two categories:

- 1) Fashion examples
- 2) Mind-set examples

*Extreme comfortable is Freedom
Extreme personal is Yourself
Extreme consciousness is Harmony*

Comfort - Fashion

A huge direction right now is the comfortable fashion. Fashion that allows you to move, fits easily, and protects you. The fabrics used have a big share with lightweight fabrics, silk, chiffon, satin and so on. On the catwalk a lot of comfortable cuts are noticed, like drapes, big shirts and sporty silhouettes.



Cosmetics to wear

One of LanXESS's newest finishes has brought the concept of 'cosmetics to wear' into the field of textiles, and to the intimate apparel market. Stutts explained: "With the introduction of our BayScent aloe vera treatment finishes and our aroma therapy finishes, we offer the added benefits of protection, skin regulation, cleansing, and soothing therapy treatments, which is released from the fabric as the wearer moves in the garments containing this finish."

<http://www.lanxess.com/>



Nike rejuven8

Walking barefeet was the inspiration for the Nike rejuven8. The entire network of the rejuven8 conforms dynamically to the changing shape of the athlete's foot in motion and at rest, while the openness of the structure allows for airflow, breathability, and the movement of moisture away from skin needed in comfort footwear.

<http://www.highsnobiety.com>



Mosquito protection

HealthGuard™ Mosquito Protection is a unique easy care fabric treatment that is kind to your skin and helps to protect you against tropical diseases such as Malaria, by repelling blood feeding insects and other bugs.

- * Repels mosquitoes, sand flies, bed bugs, midges and fleas
- * Reduces bites by up to 90% and 90% effective at repelling blood feeding insects
- * Non-irritant approved by the UK Health and Safety Executive

<http://www.berghaus.com>

Aged comfort

Textures with comfort and touch values, knitted wraps and washed cotton are worn and cherished. Layering is used for warmth and well-being. These fabrics are easy to care, just throw them in the washing machine and they don't need to be ironed.

Seasonal inspiration, Autumn/winter, 2009/2010, <http://www.wgsn.com>

Soft and lightweight fabrics

Bottega Veneta's autumn/winter 2008/09 is one of the many collections that is about soft fabrics that drape smooth around the body. Examples are feratex, silk, satin, lightweight wool. Sportswear is the inspiration for many fashion brands.

Future imperfect, Autumn/winter, 2009/2010, <http://www.wgsn.com>



pre-summer 09 - Proenza Schoeeler

spring/summer 08 - Alexander McQueen

Wimbledon 08 - Nike

autum/winter 0809 - Balenciaga

autum/winter 0809 - Bottega Veneta

spring/summer 08 - Marc Jacobs



Freedom - Mind-set

People are looking for freedom, for both mind and body. We actually don't want to sit in an office all day. We need the feeling of being alone and free, at peace with life and the broad expanse of the horizon.

Escape

Solitude clothing makes laid-back clothing for people who are looking for a way to escape the pressures of the modern world. "Technology has wired us into a connected world in potential constant communication with 6 billion other people. Life is happening at high speed with no brakes and a slippery road ahead. We need to get disconnected and break away to a relaxed state of mind."

<http://www.solitudeclothing.com/>



Sleeping in the mountains

Hiking becomes more and more popular, walking and sleeping in the mountains is adventurous and healthy.

We desire pragmatism and peace: this a paradoxical time. We have created a communications culture that has decreased the time available for us to sit and think, uninterrupted.

<http://www.hiking-site.nl/>



Free ski

White Free-ski magazine is ment to inspire the skier and let them enjoy the sport intense and pure. White takes you to endless thick packs of fresh snow inspires you by the meditative state reached by breaking down the barriers of unattainable realities.

<http://white.soulonline.nl/>



Free running

The international Free Running community is being honoured with the first ever dedicated shoe designed to enhance Free Runners' performances. The sport is a global phenomenon. The technical reason is "shock spring technology" which helps cushion landings and provides extra support for knees and feet.

Free running is a physical art, in which participants use the urban and rural areas to perform movements through its structures focused on freedom and beauty.

<http://www.k-swiss.co.uk/>



Wearable technology

Integrating technology with garments isn't as hard as it sounds. With Eleksen's ElekTex integrating textile controls into jackets, hoodies, jeans or shirts to enable remote access to music and mobile electronics are as easy to integrate as sewing in a zipper.

<http://www.elekseen.com>



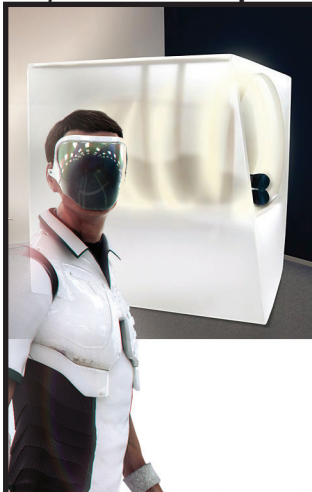
Into the wild

The movie 'Into the wild' is very popular, that's certainly for a reason. Also the book 'Into the wild' was a bestseller already in 1996. Isn't it the wish of everyone to leave everything behind, to be free of obligations and do what you want? Don't we all want to go what it is to go back to basics and feel the connection with nature?

<http://www.intothewild.com/>



Inspiration - shape memory easy lightweight self-healing freedom protection



Personal - Fashion

It's about self customized garment, humorous clothes and well worn clothes. Leaving traces is a way of personalizing clothes, so old and fixed clothes are beloved. Clothes that express your personality and being anti-trend is popular. Fashion is personal in several ways.



Knitwear

This years Nottingham Trent University graduates were impressive with many of the young designers including Leona Gardner-Chan took lead from a classic South American knitting style designing and making brightly coloured knitwear.

http://www.fuk.co.uk/graduate_fashion_week_2008/



Feel good

For every pair you purchase, TOMS will give a pair of shoes to a child in need.

<http://www.tomsshoes.com/>



Castelbajac

Taking Pop into the next dimension, humour is the key ingredient to the JC/DC brand. A bold use of colour and witty prints continue to be his signature. Unashamedly happy, the loud approach he's always entertained translates into street fashion today.

<http://www.jc-de-castelbajac.com/>



Personal shoes

The 'shoes or no shoes'-museum in Belgium displays hundreds pairs of shoes worn by famous artists during their work. Also the shoes became artworks.

<http://www.shoesornoshoes.com/>



Products with value

" A higher quality product will invariably last longer. It will keep on performing as it was designed to for longer before it finally needs replacing. And so over its lifespan it will have consumed less valuable resources than an inferior product that will have been replaced many times.

We are trying to get the balance right between work and play. Whenever a real nice day comes along, it'd be a shame to waste it. So if you phone up and no-one answers, don't worry. We are out there doing what we love. So leave a message and we'll get back to you in a while."

Howies, 2008, "Our way", June 13th, 2008, <http://www.howies.co.uk>



autum/winter 0809 - Victor & Rolf

autum/winter 0809 - Ghulam Sakina

autum/winter 0809 - JC/DC

May 30- London (streetshot) hesartorialist.blogspot.com

June 11 - London (WGSN streetshot)



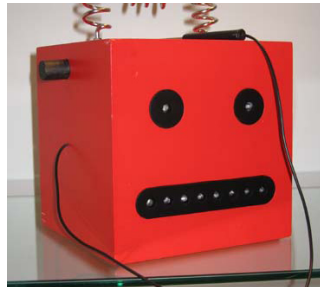
Yourself - Mind-set

We have to take time to enter into a relationship with people and things in opposition to this wasteful type of relationships with objects. Traditional techniques achieved through digital technologies making things to love.

Heartwarming

Faces in places is a photographic collection of faces found in everyday places.

<http://facesinplaces.blogspot.com/>



Old wisdom

The OTOP-project in Thailand is an example of revaluing folk intelligence. The Herbal Heat Bag is one example of it. This pillow filled with herbals is based on a centuries old recipe from Thailand.

Herbalheatbag shop, 2008, "Otop informatie", June 11th 2008, <http://www.herbalheatbagshop.nl/>



Happiness tea

"Everyone could use more happiness in their lives and this, our original and most popular product, will add just that. Happiness Tea is a fragrant blend of Hibiscus flower, Rosemary and Cardamon. We encourage you to follow the tea making instructions carefully, to bring a little more joy into your life."

<http://www.todaywasfun.com/>



Folk Music

Folk is the new middle ground in the world of music and celebrates the art of personal storytelling. Deeply rooted in tradition and conveying a sense of belonging, folk has always been the music of the people made and delivered freely. Be inspired by the world-wise-beyond-her-years musings of 18-year-old lyricist Laura Marling on debut album *Alas I Cannot Swim*.

www.lauramarling.com



Heartbeans

"It would seem that with time, we develop a certain product for the true needs of every person, and get carried away by the material world. Heart-Beans encompasses this formula, incorporating elements that its developers deem as basic needs - touch, and communication between a person and himself. To use this object, you must caress it and caressing and hugging it, much like as a baby is held, the user inevitably bonds with it, emotionally."

Ultimately, Heat-Beans is a coffee-grinder, set to operate according to the user's heart-beats.

<http://danielleram.wordpress.com>

Colour your bag

A new, fun approach to luxury branding, Fendi is celebrating the tenth anniversary of the Fendi baguette bag with the launch of its own DIY version. Reincarnated in plain canvas, the bag comes with its own set of Pantone markers, giving the customer an interactive, personalised unique Fendi bag.

<http://www.fendi.com/>



Inspiration - hug colour customize culture shape unique feel love roots



Consciousness - Fashion

The fashion industry is one of the most exploitative industries in the world. Every season another trend and every season new collections. This is the opposit of sustainability. Luckily there is a lot of sustainable fashion on the catwalks. The colours are natural, the materials are soft, nature-friendly and nice.

Bamboo, Mohair, Hemp

Bamboo, Mohair and Hemp are the tree buzz words in ecological fabric land. Mohair is hair from the Angora goat. The fabric is smooth, glossy and wiry, with long wavy hair. Hemp is a fine, light-coloured, strong bast fibre. Obtained from the hemp plant cannabis sativa. Bamboo offcourse is made from bamboo. Bamboo fibres absorb moisture, and wick it away from the skin, keeping you cooler and drier than synthetics or cotton.

WGSN, Materials, June 24th, <http://www.wgsn.com>



Waterless washing

A washing machine using as little as a cup of water for each washing cycle could go on sale to environmentally conscious Britons next year. Plastic chips are used to remove dirt and stains from clothes, leaving them dry and reducing energy consumption as there is no need to use a dryer after the washing cycle, Xeros said in a statement.

Environmental News Network, "UK to give waterless washing machine a spin", June 11th 2008, <http://www.enn.com/>

2nd Hand

Gary Harvey's first collection showcased nine of his stunning dresses during London Fashion Week. The collection together creates a dramatic display designed to change people's perception of second-hand clothing and create fashion with a conscience.

<http://garyharveycreative.com/>



Natural dye

Environmentally aware brands and individuals are realising that it's not just about the fabric - it's also about how you dye, finish and launder the garment. Seattle-based Truly Organic Apparel is another natural-dye pioneer. This is just the beginning of where we'd like to go with these chemical-free dyes, organic fibres and fairtrade practices.

<http://www.truly-organic.com>



100% recycle

The cradle-to-cradle T-shirt is the first fully biodegradable T-shirt in the world. After throwing the T-shirt away it will be decomposed in half a year.

<http://www.wiegotwieg.nl>



Green is the new black

In 'Green is the new Black' Tamsin Blanchard shows that ecological fashion is not dull. She brings up to customize old clothes, fix them, paint them or make something else. Tamsin Blanchard was fashion editor for a British newspaper.

T. Blanchard, 2008, "Green is the new black"

spring/summer 09 - Trend Erea

autumn/winter 0809 - Chris Benz

autumn/winter 0809 - Topshop unique

autumn/winter 0809 - Mark&Spencer label

spring 08 - Katayama Co Ltd

autumn/winter 0809 - Rodarte



Harmony - Mind-set

Sustainability is not longer just about recycling. Nature and products become one. We learn from natural processes. We will live in nature in a perfect harmony.

Fashion will live.



A living house

Mitchell Joachim, Lara Greden and Javier Arbona - created this living treehouse in which the dwelling itself merges with its environment and nourishes its inhabitants. Fab Tree Hab dissolves our conventional concept of home and establishes a new symbiosis between the house and its surrounding ecosystem.

The trees that form the frame and the plants that grow on the external walls are meant to provide sustenance for the inhabitants and other living creatures who interact with the structure. On this level, the designers aim to demonstrate that natural building materials, when utilized in their living state, can create a "superstructure" that is biologically pure and contains no unknown substances.

<http://www.archinode.com/bienal.html>
<http://www.treedome.com>



Homegrown

Eating locally raised food is a growing trend. A completely local diet is out of reach for even the most dedicated, the shift toward it is being driven by the increasingly popular view that fast food is the enemy and that local food tastes better.

K. Severson, Enjoy your own homegrown food without the sweat, Herald Tribune, 22th July 2008

Living Poster

Jelte van Abbema's Symbiosis uses the controlled growth of bacteria to 'print' ever-changing messages on a page. The page is a feeding ground for the bacteria and it is the surrounding environment that determines the image's growth.

<http://www.moma.org>

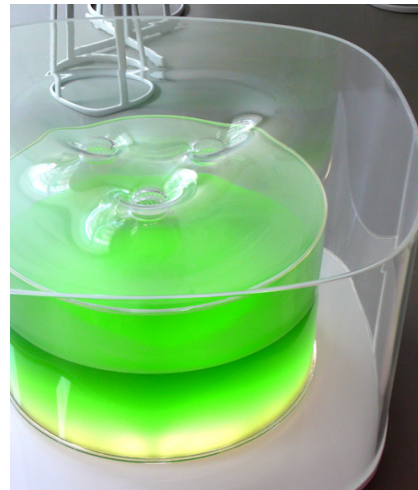


'We should breed objects like we breed rabbits'

Lars Spuybroek: "We can now 'print' an object directly from digital information - molds will just disappear. All design will become meta-design: objects can now be a range-of-objects like in a family or a species.

We designed the object in such a way that the differences would be easily readable, without making them too different. They can be big on top, big in the middle, or big below. They can have many holes or just a few. But they will always be private, each lamp you buy is different from the other, it's unique.

<http://www.materialise.com>



Fresh oxygen

Sleek round aquariums sit throughout the space, each filled with 100-litres of Spirulina Plantensis. The micro algae creates oxygen through photosynthesis, aided by the large bright windows nearby. Besides their eye-popping futuristic vibe and awesome visual quality - the aquariums seem to almost glow with an organic phosphorescence - the pure, fresh oxygen they release into the air adds to a full-sensory, holistic experience.

<http://www.mathieulehanneur.com/>



Inspiration - growing natural process earth amorphous harmony biotechnology



2.4 Conclusion

Visual trends

Fashion trends show that the traditional way of ironing is vanishing. Decoration, drapes and pleats are hard to iron. Furthermore delicate fabrics, vitamine finishes and metallic finishes could be easily damaged by an iron or washing machine.

Fashion trends ask for polite garment treatments, customization and personal care concepts.

Mind-set

Above mentioned fashion trends indicate three mind-set directions: freedom, yourself and harmony. Comfortable and protective garment and easy to care fabrics are emerging on catwalks and spotted in the daily life. People fight back the mass production and consumer society by wearing heartwarming, imperfect and unique clothes. Customers concern about the earth's wellbeing and the exploitative fashion industry. Therefore also the fashionbrands are working on sustainable and fair solutions.

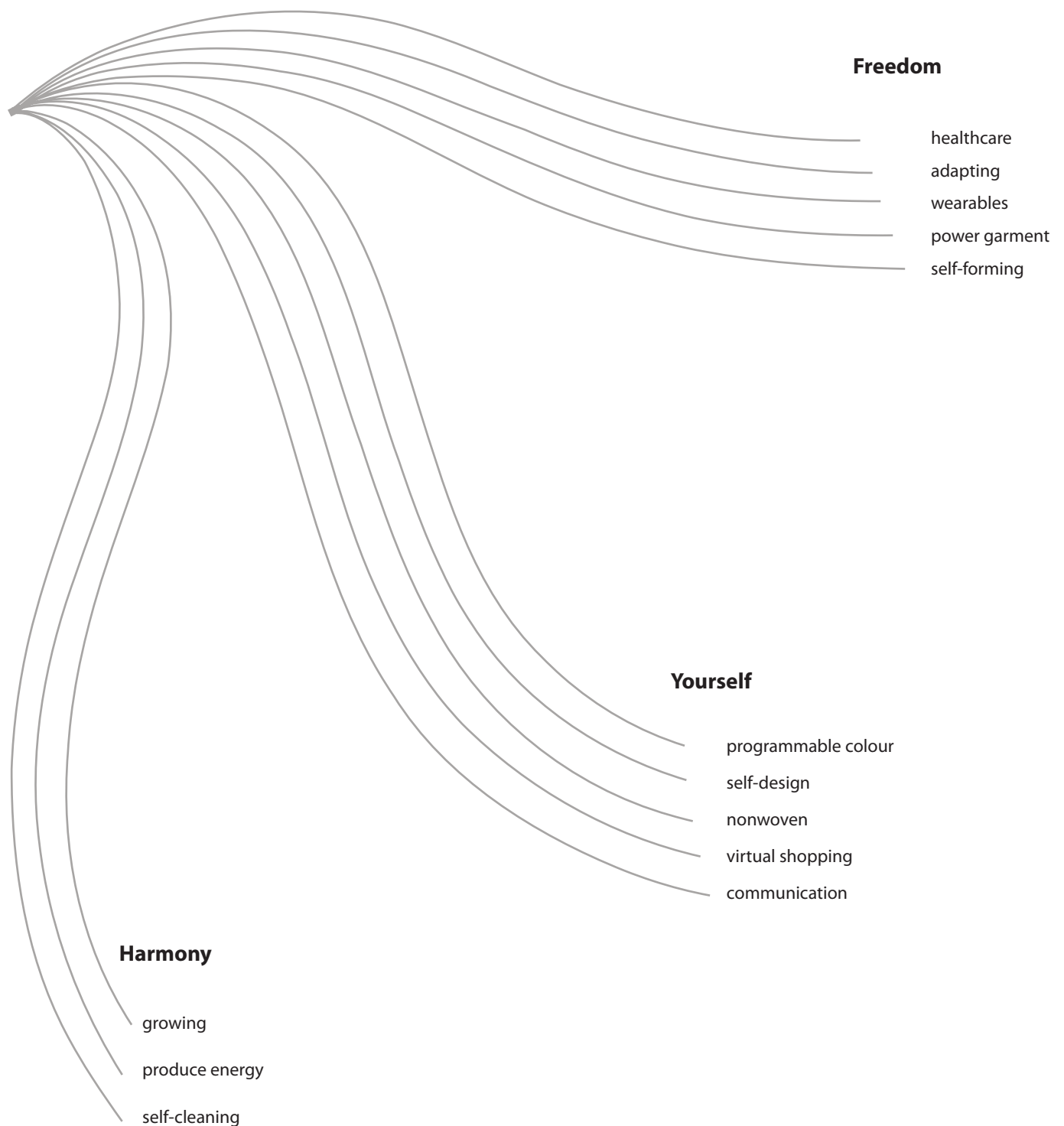
Customers no longer care about products, but about services and interesting visions.

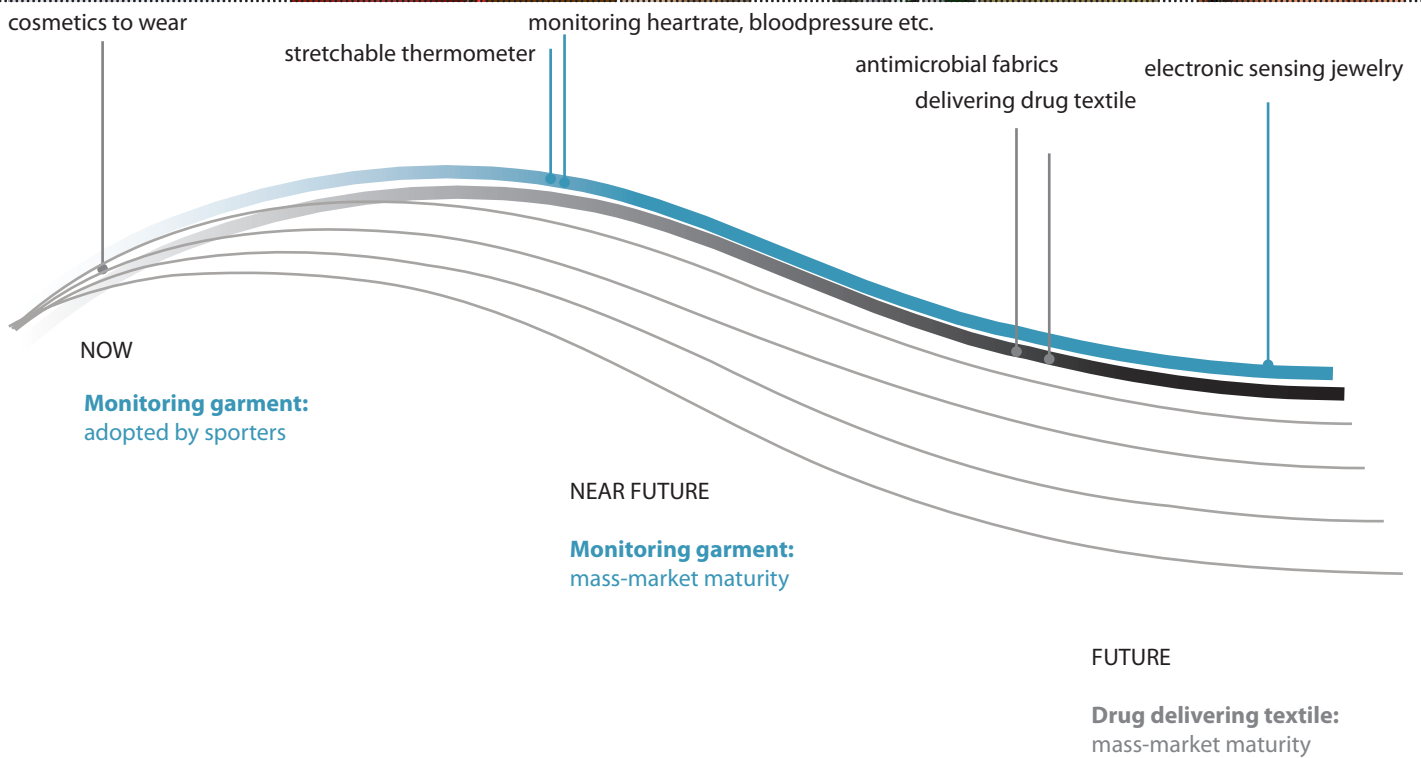
Chapter 3 **Garment future**

3.1 Introduction

This timeline shows the technologic development of the three directions explained in Chapter 2. The final stages of these three directions on the timeline are called 'Freedom', 'Yourself' and 'Harmony'. These represent the perfect final stages.

3.2 Timeline







mosquito protection



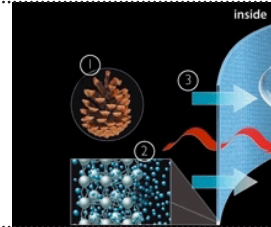
ultra-lightweight



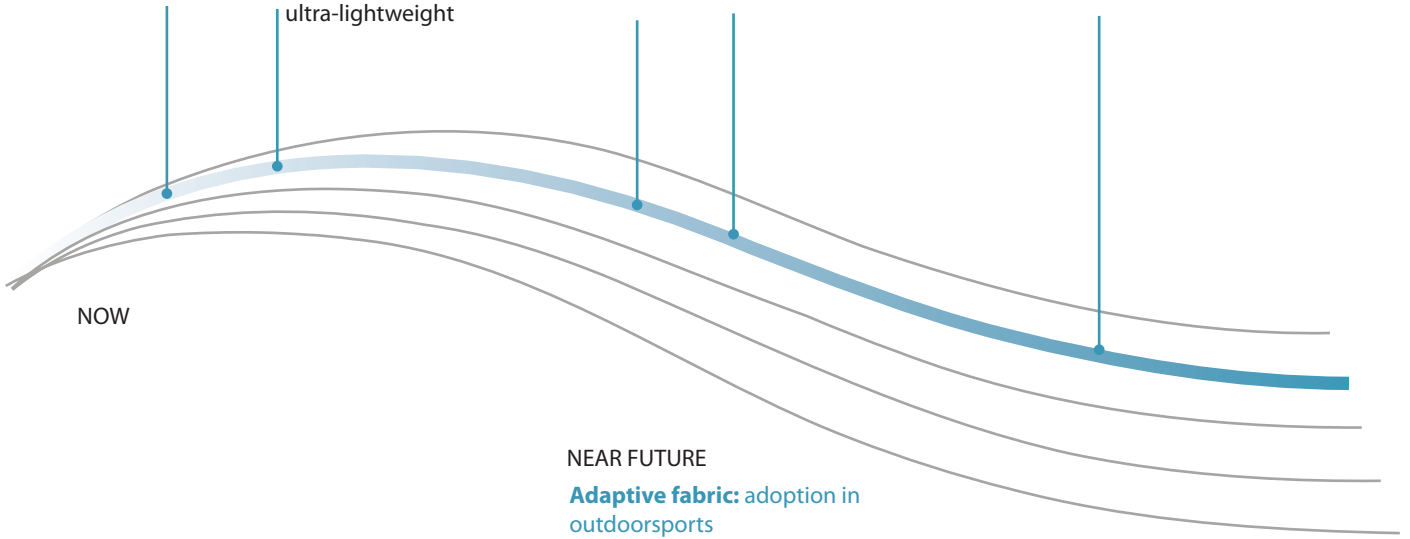
electrically heated



temperature control



respond on environment





wearables

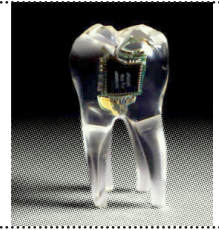


head mounted display (HMD)

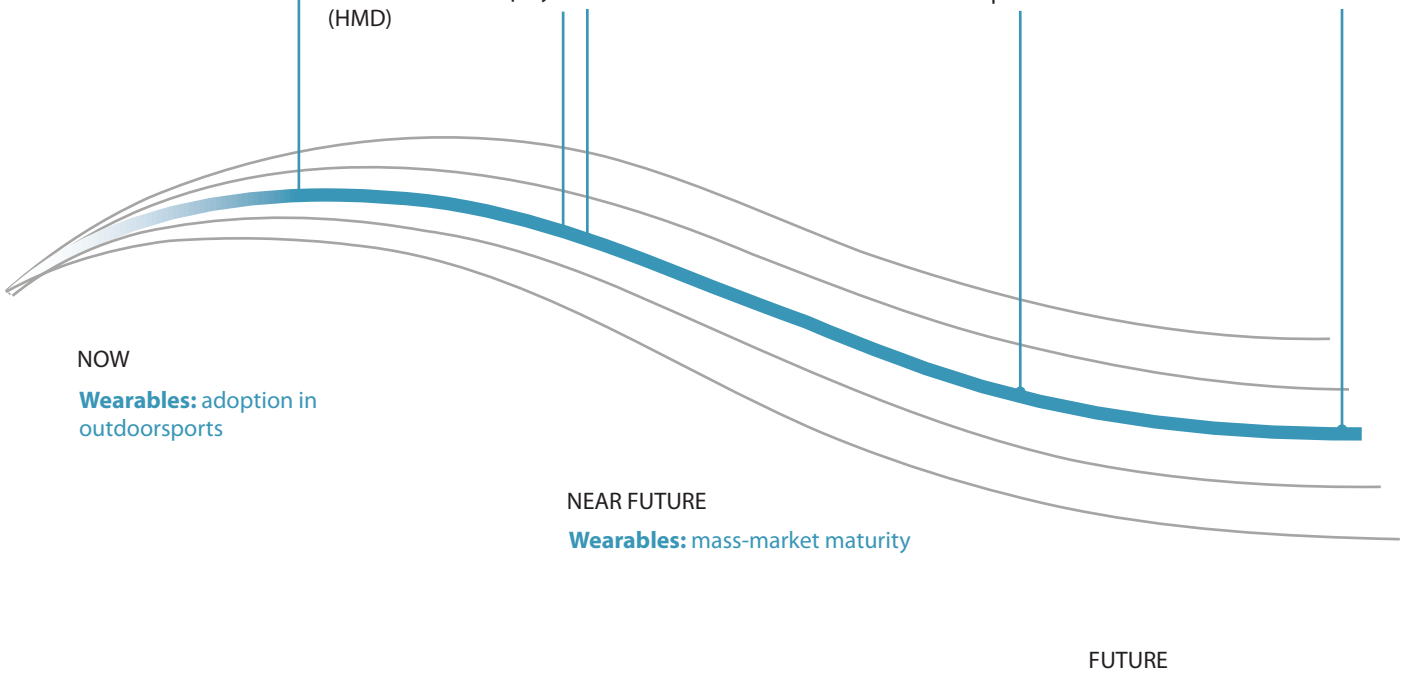
fabric keyboard



stretchable textile pressure sensor

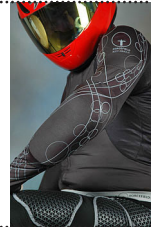


audio tooth implant





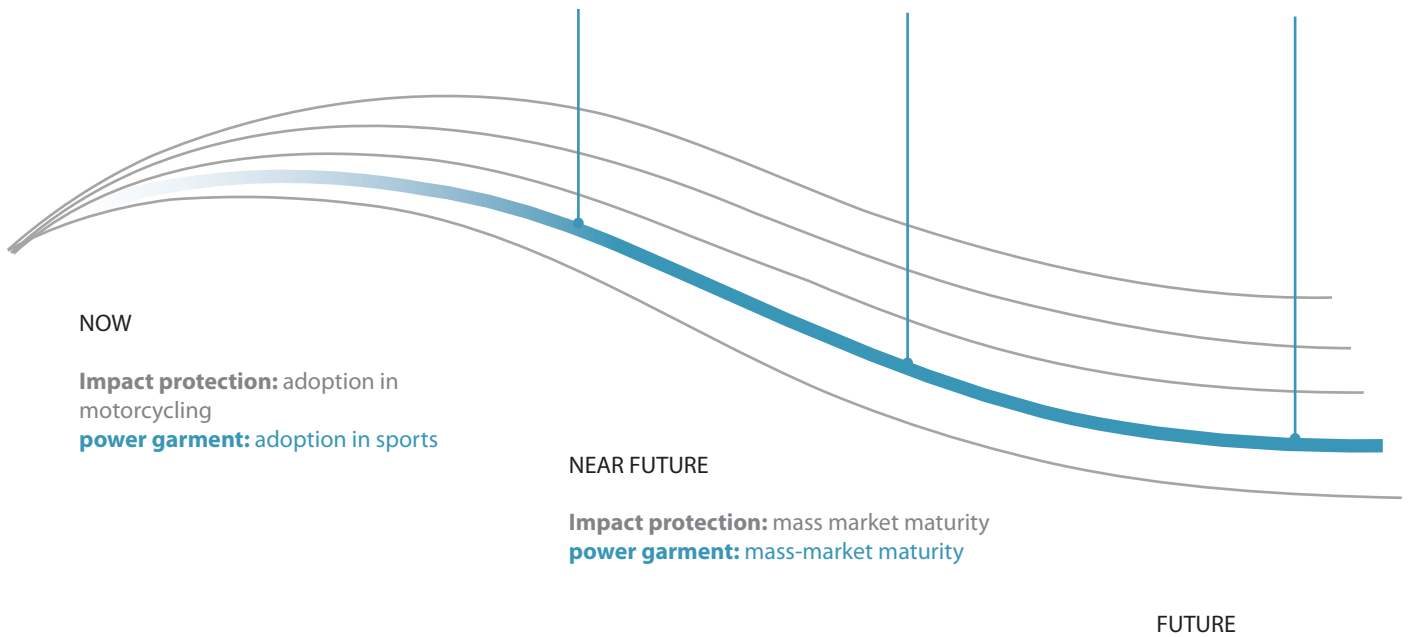
power garment



impact protection



power suit





Freedom

self-forming

from wrinkle free garment to self-forming garment



Wrinkle resistant



ironing by wearing



shape memory clothes



moving dress

NOW

Shape memory:
adoption by artists
Moving dress:
adoption by artists

NEAR FUTURE

Shape memory:
mass-market maturity

FUTURE

Moving dress:
mass-market maturity



Marielle Leenders
moving textiles

Wrinkle resistant shirt, <http://www.llbean.com/>

Ironing by wearing, <http://www.interactivearchitecture.org/smart-materials-1-definition.html>

Shape memory clothes, <http://www.newscientist.com/article/dn1073-shirt-rolls-up-its-own-sleeves.html>

Moving dress, <http://www.xslabs.net/skorpions/> & <http://www.moma.org/exhibitions/2008/elasticmind/#/145/>



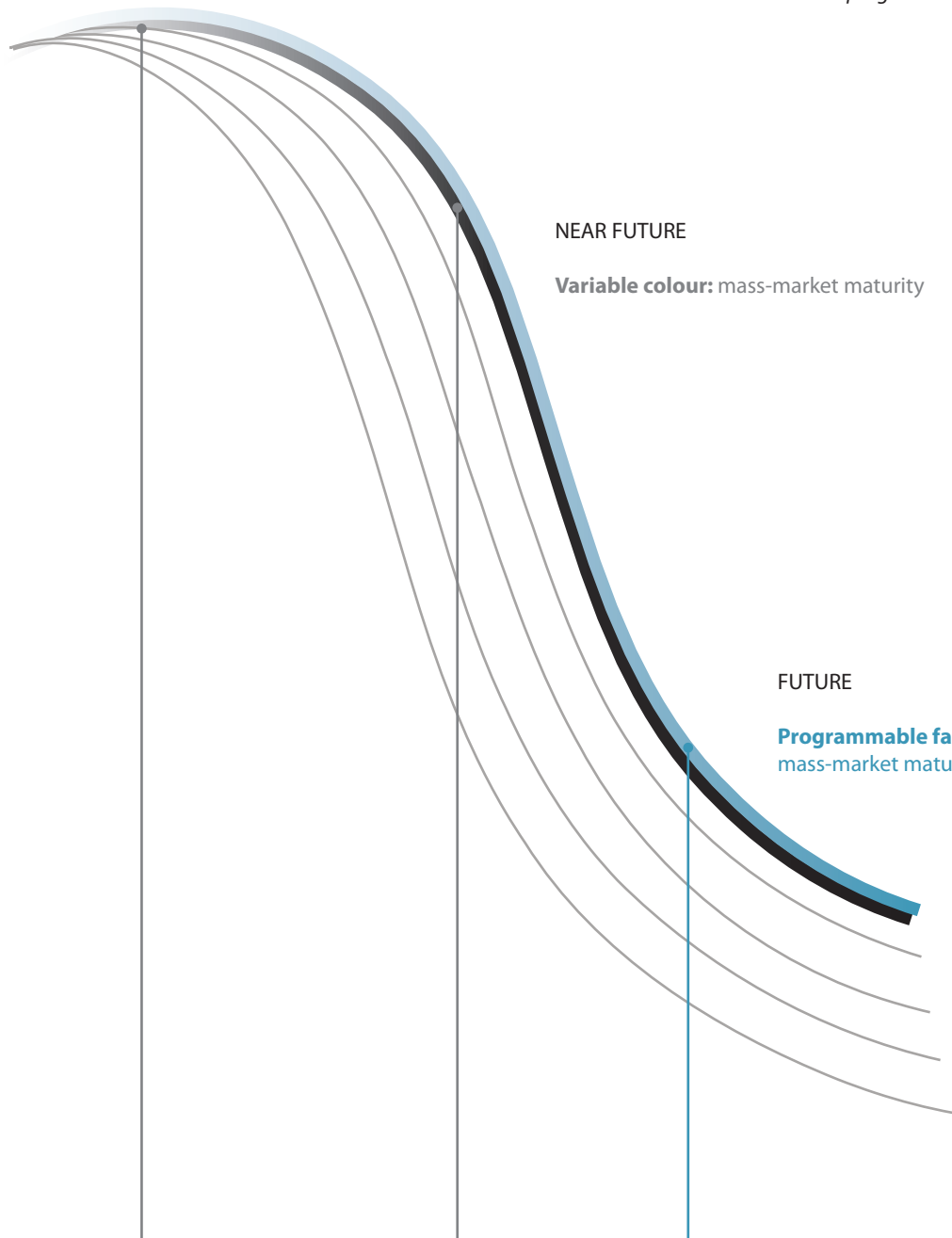
NOW

Variable colour: adopted in arts

Programmable fabric: adopted in arts

programmable colour

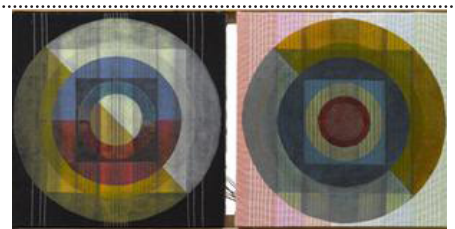
*from change colour to
programmable look*



thermochromic textile

chameleon scarf

programmable fabric





Yourself

NOW

self-design
from customizing to designing

NEAR FUTURE

FUTURE

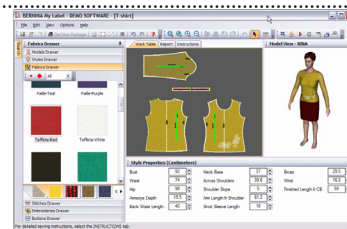
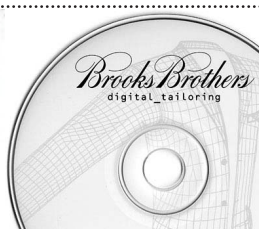
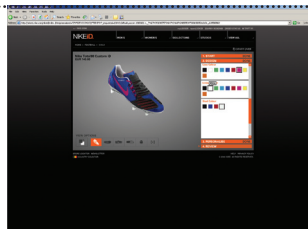
Self-design: mass-market maturity

Nike iD

create a dress

digital tailoring

My label software



Nike iD, <http://nikeid.nike.com/>
Create a dress, <http://www.styleshake.com/>
Digital tailoring,
My label software, <http://www.berninamylabel.com/>



NOW

nonwoven
from glued to nonwoven

NEAR FUTURE

3d printed textile: adoption by
high-end fashion brands

FUTURE

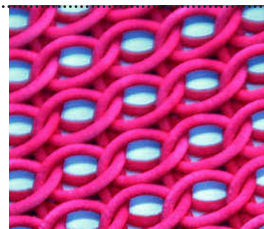
3d printed textile:
mass-market maturity

glue jeans

3d printed textile

fabric in a can

self-healing



Glue Jeans, <http://www.gluejeans.com/>

3D printed textile, <http://www.freedomofcreation.com/>

Rapid manufacturing, S. Lee, Spray-on Dresses, Growable suits, Self-Cleaning shirts, *The Independent*, 29 October 2005

Rapid manufacturing, http://www.dexigner.com/design_news/5658.html

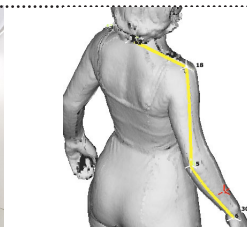
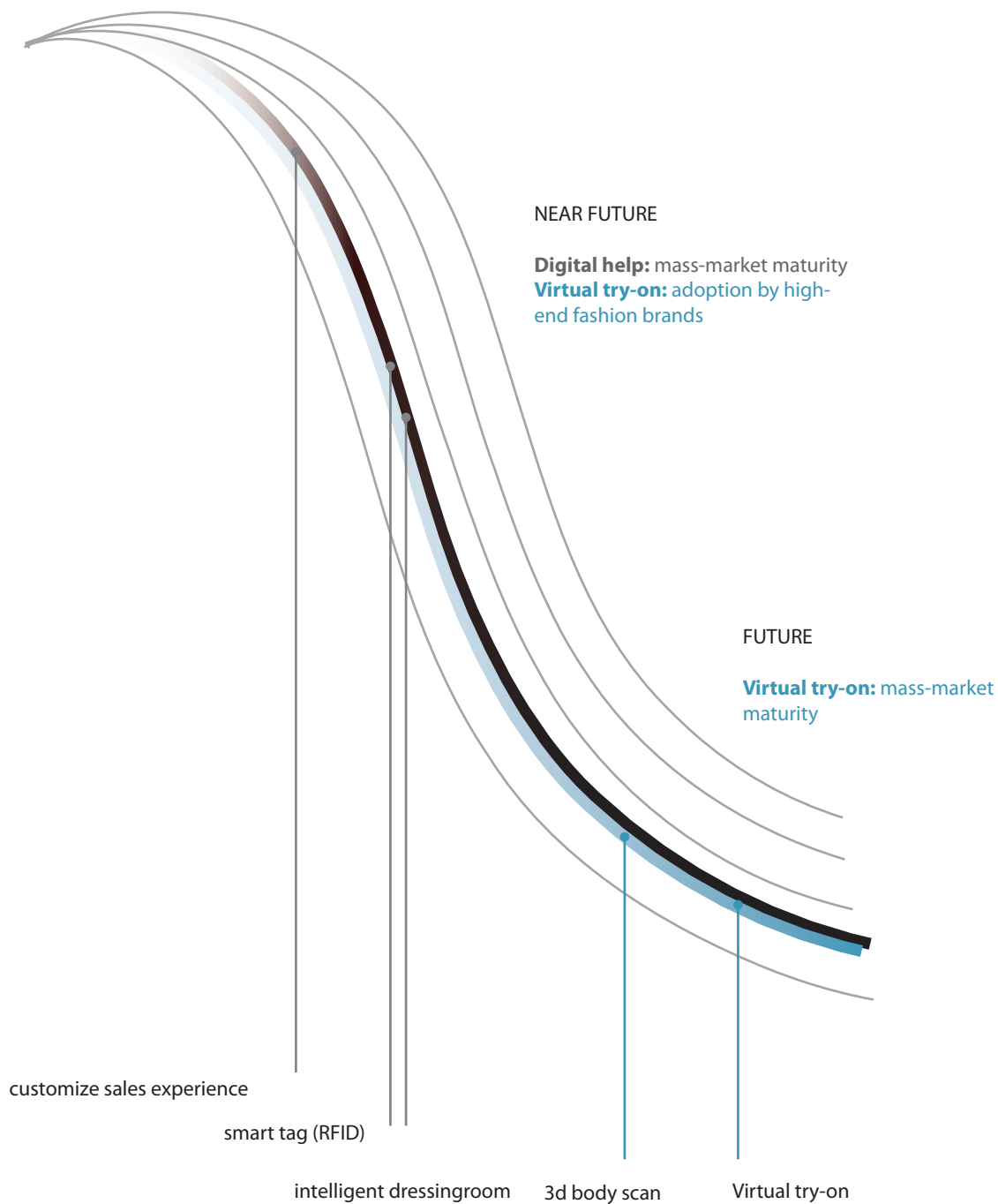
Fabric in a can, <http://www.fabricanltd.com/>

Self healing rubber, <http://www.dosci.org/research/researchers-develop-the-self-healing-rubber/>



NOW **Digital help:** adoption by high-end fashion brands

virtual shopping
from digital help to complete virtual



Smart tag, <http://www.yankodesign.com/index.php/2008/01/08/smarter-clothing-care-labels/>

Customize sales experience, <http://online-medienn.ch/?p=59>

3D body scan, <http://www.archetype-solutions.com/index.cfm?fuseaction=news.showarticle&article=news-wwd-7.14.04&page=3>

3D body scan, <http://www.bodyscan.human.cornell.edu/scene0605.html>

Virtual try-on, <http://news.bbc.co.uk/1/hi/technology/3430131.stm>



NOW

communication
from visual communication to physical communication

NEAR FUTURE

FUTURE

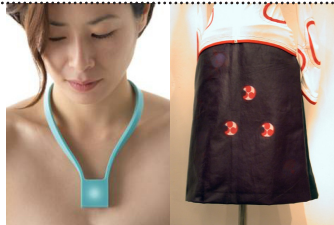
physical communication:
mass-market maturity

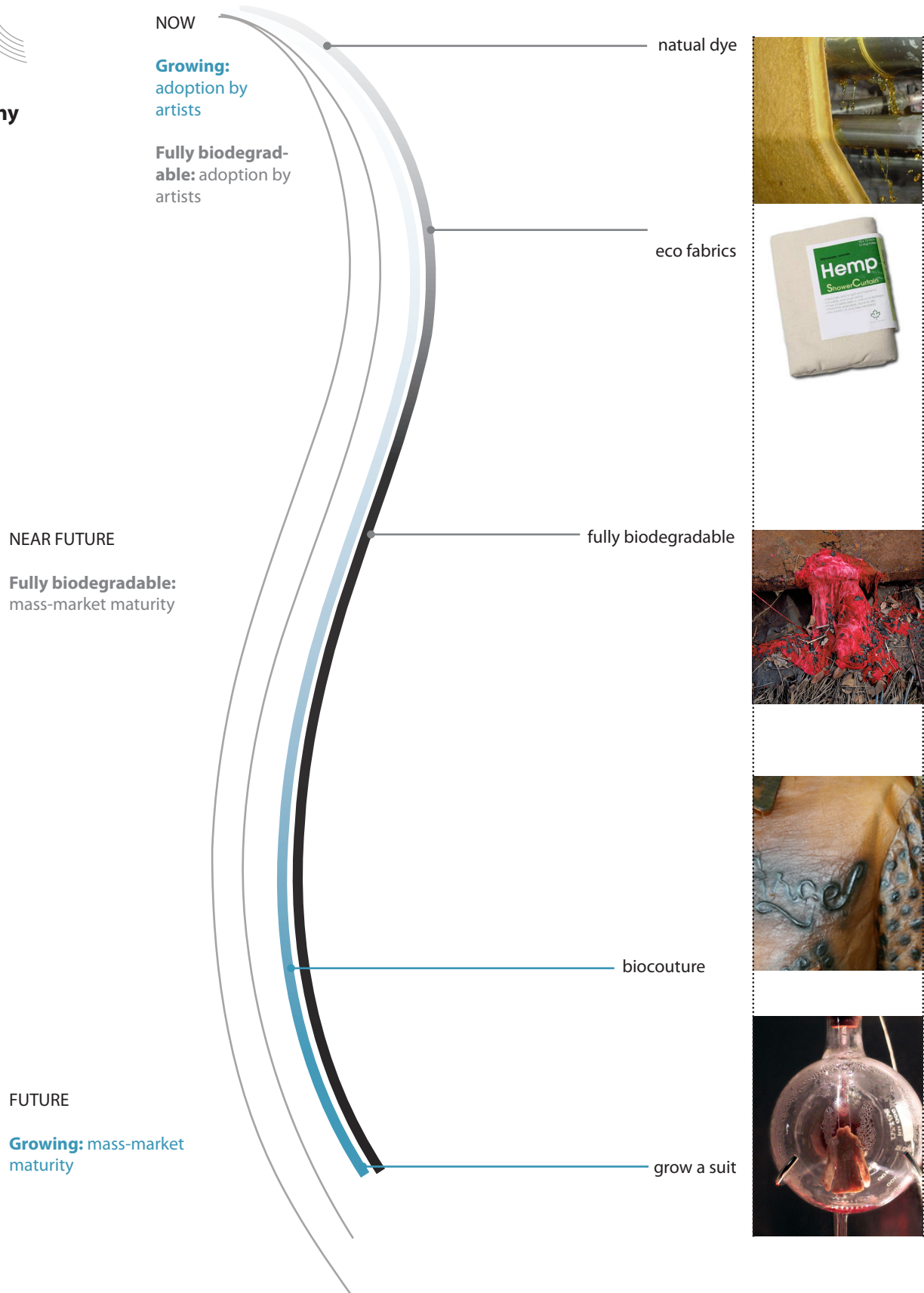
LED communication

emotional sensing necklace & skirt

record & play heartbeat

hug shirt





Natural dye, <http://www.truly-organic.com>

Eco fabrics, WGSN, Materials, June 24th 2008, <http://www.wgsn.com>

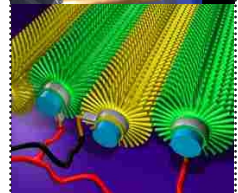
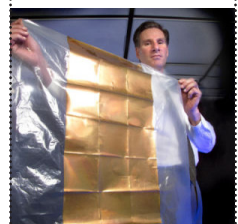
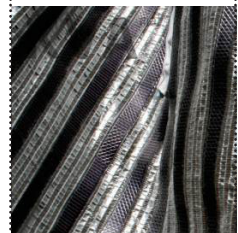
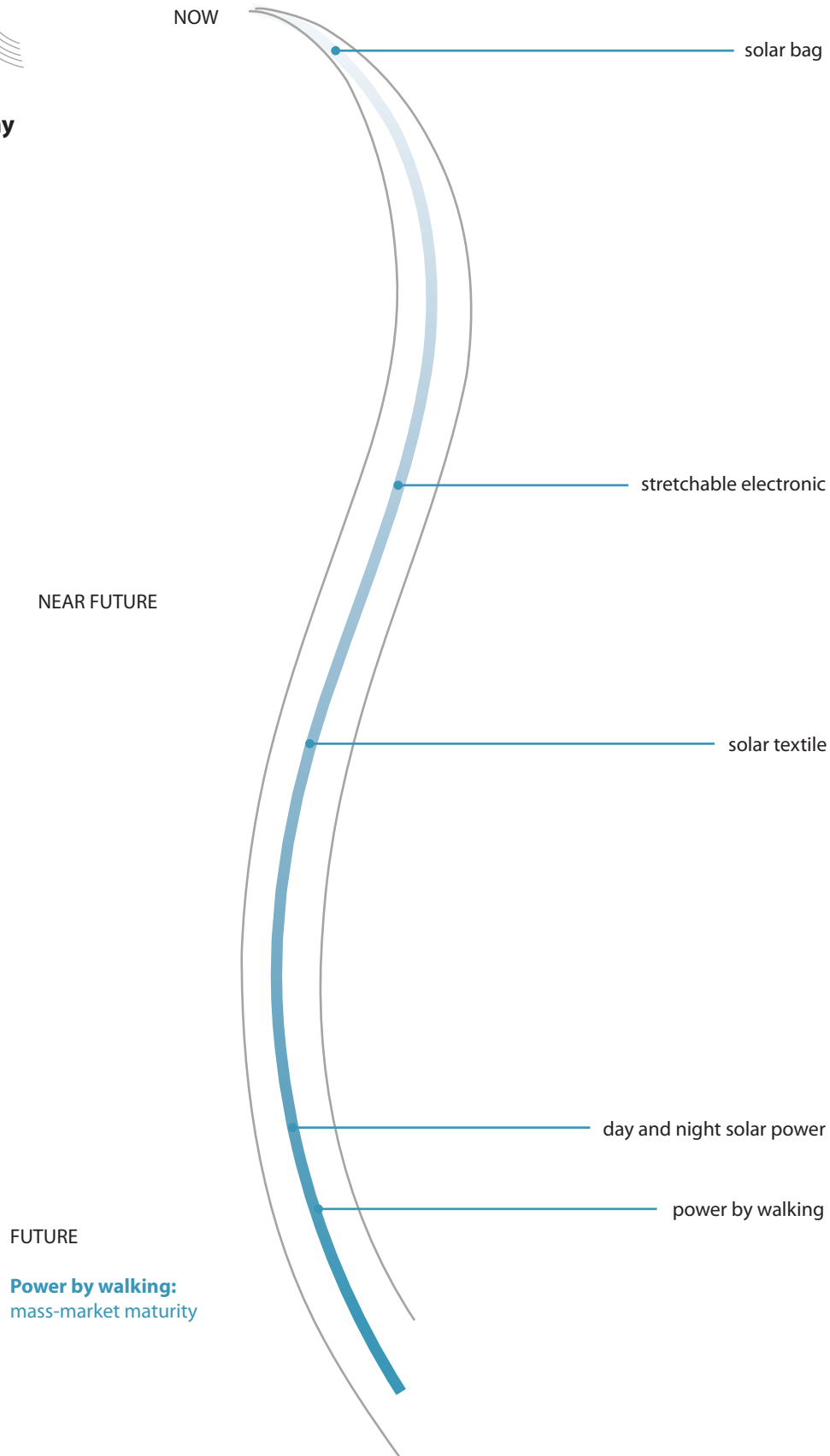
Fully biodegradable, <http://www.wiegtotwieg.nl>

Biocouture, <http://www.biocouture.co.uk>

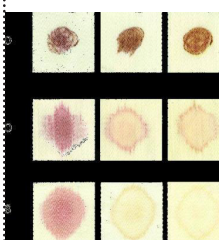
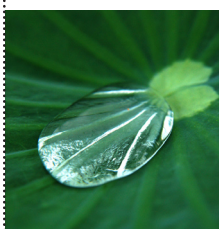
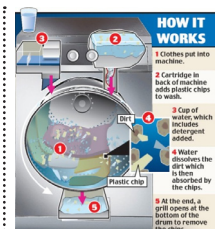
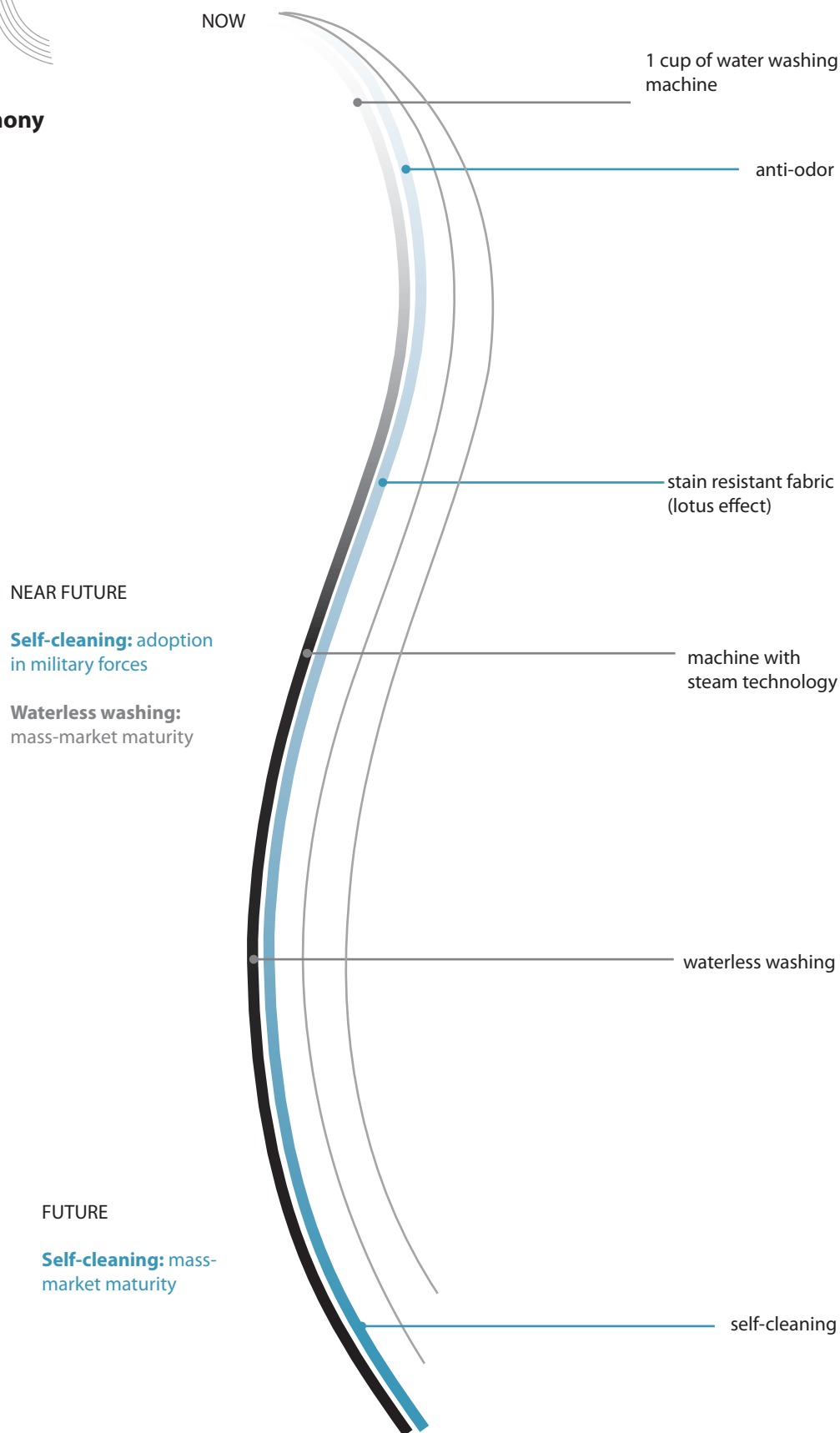
Grow a suit, <http://www.moma.org>



produce energy
from inflexible power to flexible power



Solar bag, <http://www.noonsolar.com/>
 Stretchable electronic, <http://www.talk2myshirt.com/blog/archives/category/technologies/e-textiles>
 Solar textile, <http://www.inhabitat.com/2008/06/12/solar-harvesting-textiles-energize-soft-house/>
 Power by walking, <http://www.enn.com/business/article/31742>
 Day and night solar power, <http://www.pressureprofile.com/FingerTPS.php>



1 cup of water washing machine, <http://www.enn.com/energy/article/37350>

Anti odour, http://findarticles.com/p/articles/mi_qn4182/is_20050728/ai_n14831774

Machine with steam technology, http://reviews.mobilewhack.com/lg_steamwasher_washing_machine_with_steam_technology.html

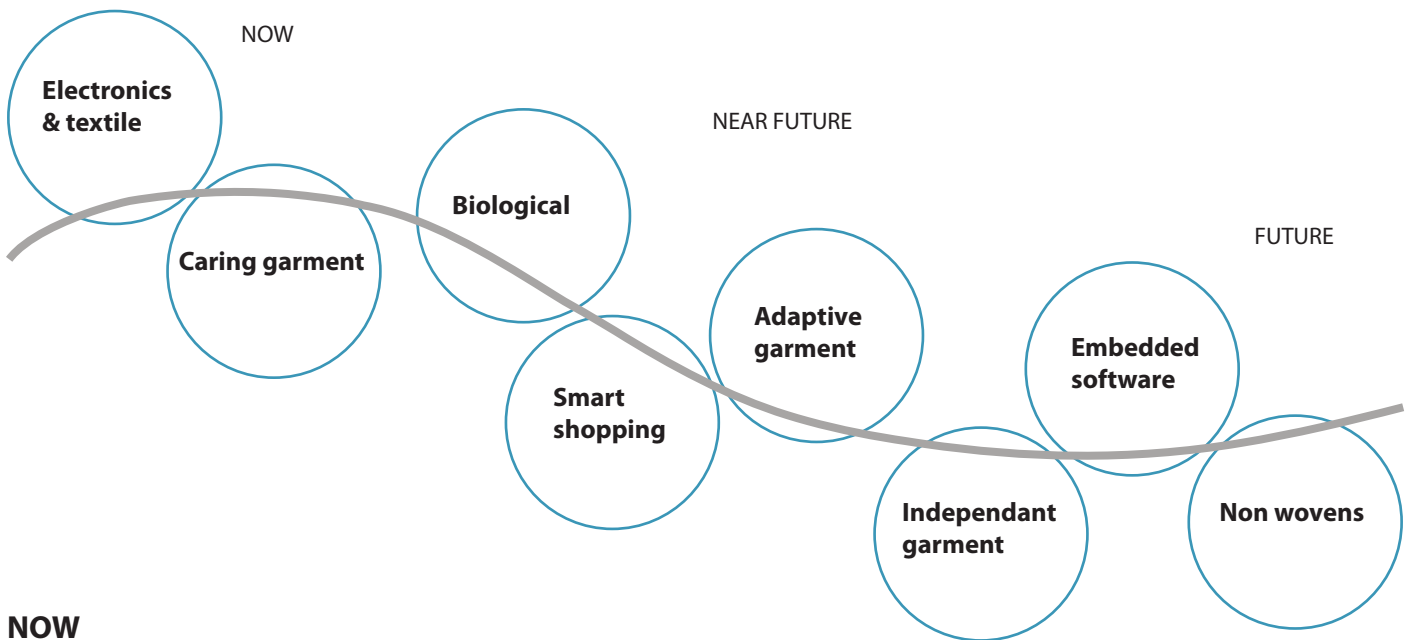
Waterless washing, <http://www.indexaward.dk/2007/>

Self cleaning, <http://www.physorg.com/news4416.html> & <http://www.sciencedaily.com/releases/2008/02/080211094258.htm>

Stain resistant fabric (lotus effect), <http://www.docsduds.com/HighTechFabric.aspx>

3.3 Phases

Preface developments are clustered in the following eight phases. These phases represent a period in which specific technological developments are important.



NOW

Electronics & textile

This period is about electronics embedded in textile. For example mobile electronics like cellphones, i-pods and so on, but also electronic information.

Wearables

At the moment the 'wearables' are already a well know innovation in textiles. A lot of outdoorbrands already use technology in real jackets. Rossignol for example showed the season 08/09 'Meteo jacket' with compass, altimeter and other mountain functions. Another example is Zegna's i-Jacket. In collaboration with Apple, Zegna has created ski-jackets in which i-Pods can be stored in an inner breast pocket while the control panel is at the wrist cuff. This direction will soon be adopted by the mass market. In the future this direction will be more flexible and more embedded in the fabric.

Smart tag

The smart tag is an example of other possible solutions the combination of textiles and electronics gives. Using RFID technology the tags can communicate with RFID enabled washers, dryers, irons, presses, and dry cleaning equipment. This principle is already used in some PRADA stores. In the stores the tags are used improve the customer experience. This tag will be soon adopted in other stores.

Rossignol: <http://www.lifepr.de/pressemeldungen/rossignol-ski-deutschland-gmbh/boxid-29408.html>

Caring garment

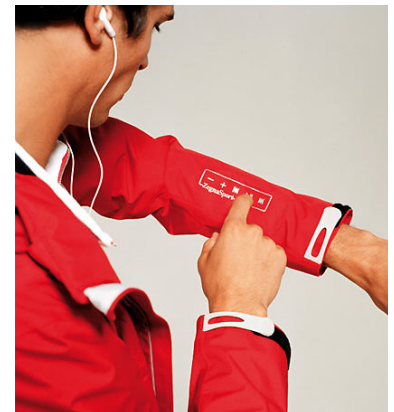
Caring garment are just like 'electronics & textile' but focussed on health and body performance. An exception is the non-electronical 'cosmetics to wear'.

Cosmetics to wear

LanXESS's newest finishes at the 'Material world 2005' in New York brought the concept of 'cosmetics to wear' into the field of textiles, and to the intimate apparel market. With the introduction of the BayScent aloe vera treatment finishes and the aroma therapy finishes, they added benefits of protection, skin regulation, cleansing, and soothing therapy treatments. These are released from the fabric as the wearer moves.

Monitoring

Monitoring garment is already launched on the market for sporters. NuMetrex for example shows the 'heart rate monitoring bra'. Other flexible electronics can be used to realise to



i-Jacket

monitor other body signals like temperature or insulin. In future this direction will become more and more intelligent towards the 'adaptive garment' period.

Electrically heated

Electrically heated garment is used by many companies in products like gloves, jackets, socks (Just google the word electrically heated garment). The target group is skiing, motorcycling and other 'cold' activities.

Power garment

Power garment is known as the new innovation at the European soccer championship. Adidas came up with the so-called 'power garment'. The garment works by supporting the key muscle groups and stores elastic energy to deliver explosive performance.

Impact protection

The exceptional about the impact protection of Forcefield is that they come up with the ideal combination of protection and flexibility with comfort. At the moment mainly footballers, skiers take advantage of this technique because they can sport without wearing pads of several centimetres.

NEAR FUTURE

Biological

Sustainability is something new in the fashion industry. A lot of brands think about it and a lot of brands don't, but it's also a fashion statement. In the near future it will be common to buy and sell sustainable products. Not only the fabrication of textiles will be sustainable, also the washing process.

Waterless washing

Several signals point at a waterless washing future. In the UK the University of Leeds will commercialize the 'nearly waterless washing machine' in 2009. Plastic chips are used to remove dirt and stains from clothes, leaving them dry. The machine only uses one cup of water. Another waterless washing machine is the 'Airwash' a winning concept in the Electrolux Design lab 2005. The appliance uses negative ions, compressed air and deodorants to clean clothes.

100% biodegradable

Biodegradable garments already exist, but it looks hard to change the whole fashion industry and consumer behaviour. Therefore the real 100% biodegradable mass-market will be in the near future.

Smart shopping

Shops become more and more a place to learn techniques and to try out products (think of Apple). The best way to sell products is to have people try them and provide good service according to 'The future laboratory' (Learning Shops, Spring&Summer 2008). Shops will be different.

3D body scan

Brooks Brothers, a high-end men's clothier, uses the 3D body scan to offer mass-customized suits at their New York City retail store using a 3D body scanner to collect customer measurements. Style, fabrics, and design features are selected from a computer screen in consultation with a trained sales professional, who facilitates the discussion of fit preferences, such as loose or form-fitted clothing. In the future the 3D body scan will be used in many other stores.

Virtual try-on

With the 3D body scan technology it's also possible to try-on clothes virtually. Research results exist about this concept. Also in the eyewear market there are some signals pointing at virtual try-on.

Self-design

Levi's was the first large apparel company to offer mass customization, now under the name 'original spin'. Customers are involved (online) in the design process, choosing from a selection of styles, fabrics, finishes, colors, leg-opening sizes, and inseam lengths. The jeans are custom-made for each customer's specific measurements and fit requirements. Also other smaller internet-based companies offer a variety of custom design, like creating a dress at 'Styleshake'. With the existing 'my label software' it is possible to design a whole dress. This is the future of the customization direction.

Virtual try-on - fashion: <http://www.site.uottawa.ca/~wslee/publication/LavalVirtual01.pdf>

Virtual try-on - eyewear: <http://www.allbusiness.com/retail-trade/home-furniture-furnishings-equipment-stores/4265861-1.html>

Adaptive garment

Adaptive garments receive signals from the body or environment and react on it. Textiles are smart, when it's raining for example a fabric will be waterproof, when it's hot the same fabric will breathe and cool you.

Skin care

Prof. Jinlian Hu from the The Hong Kong Polytechnic University, Hong Kong publiced about textile products for skin care uses. The smart textiles products for skin care would be produced when combining the novel adaptive polymers and traditional textiles. Adaptive polymers can show smart behaviors in response to different external stimuli, such as temperature, light, pH, magnetic field, electrical field and so on. Skin-care products can moisturize, whiten, brighten, or even anti-age, firm the skin and derm. For some given products, the skin-care technology will provide the special care for acne, rosacea, eczema and more. We have created on kind of smart textiles with temperature-controlled release and anti-bacterial activity, which have a great potential in cosmetics and medial fields.

<http://www.nano.org.uk/conferences/textiles2008/abstracts/Hu.htm>

Deliver drug

In 2007, the Schoeller textiles company was working on fabrics that allow clothing to deliver drugs directly to the skin. The garments would be covered with nanocontainers that are refilled with medication in the washing machine during the last stage of the washing programme. The nano-containers are not visible to the naked eye. The invention, called "i-load", was inspired by smoking-cessation patches. Since the drugs are delivered over a large skin area, the dosage can be very low. Schoeller Textil expect that this technology will be extremely successful in the treatment of skin diseases like neurodermatitis.

Adaptive to weather

C_change, the new membrane technology ,also from Schoeller Textiles, reacts to changing temperatures and activities. In addition, it offers moisture vapor permeability at the highest level and is wind- and waterproof. This means that C-change always ensures an optimum body climate.

<http://www.c-change.ch/>

Adaptive colour

Yasuyuki Machida designed a Color Changing Scarf that is already available in stores. The polyvinylidene fibers change color when exposed to heat or cold, including changes in one's body temperature. This version in green changes to yellow and there's a gray one that turns white when it comes into contact with skin.

The chameleon-shawl, was developed by Akira Wakita and colleagues at Keio University in Tokyo, Japan. Interwoven into the scarf material are pixels containing red, blue and green LED's, so adjusting the brightness of each type of diode turns the scarf a different overall shade.

A small sensor embedded in the garment also enables it to identify the colour of the nearest item of clothing. A microcomputer then selects a suitable colour for the scarf itself to adopt.

<http://www.newscientist.com/article.ns?id=dn8440>

FUTURE

Independent garment

Independent garments are independent just like adults, you don't need to take care of them. The garment produces energy for activities, clean themselves, heal themselves and so on.

Self-cleaning

Many antibacterial and self-cleaning coating technologies exist. For example Microban Inc. (New York, NY) offers antibacterial technology that is applicable to polymers and to textiles and in June 2005, scientists at the Naval Research Laboratory's Center for Bio/Molecular Science and Engineering (CBMSE) reported that they had developed a new cost-effective, selfdecontaminating ultrathin materials coating that actively destroys pesticides and related chemical agents on contact. The coating is actually an ultrathin, layered, composite film (500nm) containing enzymes that actively degrade chemical toxins.

Self-healing

French researchers are the proud inventors of a material that self-heals when it is cut in pieces (demonstrated by François Tournilhac). This material is an artifical rubber made of vegetable oil and one of urine's component. When cut, the substance has a strong chemical attraction and the pieces rejoin without the need of glue and they look like they have never been separated.

The material self-repairs thanks to its composition that keeps the molecules together unlike regular rubber which consists of network made of covalent links that if are broken cannot be repaired. The researchers have replaced the covalent connections with a technique similar to hydrogen bonds which are weaker and easy to be remade.

Produce power

Nanotechnology researchers are developing the perfect complement to the wearable electronics developments, a “power shirt” able to generate electricity to power small electronic devices for soldiers in the field, hikers and others whose physical motion could be harnessed and converted to electrical energy.

Pairs of textile fibers covered with zinc oxide nanowires can generate electrical current using the piezoelectric effect. The two fibers scrub together just like two bottle brushes with their bristles touching, and the piezoelectric-semiconductor process converts the mechanical motion into electrical energy

<http://gtresearchnews.gatech.edu/newsrelease/power-shirt.htm>

Embedded software

Normally software is located in hardware, but in future software will be embedded in textile. Like a programmer programs a computer programme now, in future he programs a dress. Embedded software in textiles means that the textile can be programmed, both colour and shape.

Electric colour

The University of Connecticut in Storrs published an article about a color-changing concept. The threads of the garment, created from materials known as electrochromic polymers, change color in response to an electric current. When voltage is applied, the polymer's electrons are raised to a higher energy level. In this state the fibers absorb light of different wavelengths, and the color changes. In this period the colours and graphics are already anchored in the textile.

http://news.nationalgeographic.com/news/2006/04/0411_060411_thread_color.html

Nonwovens

This period is about new ways of producing textiles. It may be even the end of crafts such as weaving and tailoring.

3D printed

The company Freedom Of Creation presents several laser sintered textiles on their website. Laser sintering is a kind of rapid manufacturing technique. Sintering is a method for making objects from powder, by heating the material (below its melting point - solid state sintering) until its particles adhere to each other. Selective laser printing (SLS) can produce parts from a relatively wide range of commercially available powder materials, including polymers (nylon, also glass-filled or with other fillers, and polystyrene), metals (steel, titanium, alloy mixtures, and composites) and green sand.

Furthermore a lot is going on in the rapid manufacturing area, all sorts of products have been created by this technique. Like the world's first fully customized football boot, created by SLS. Question is not if the textiles will be created like this, but when it will be a mature production procedure for textiles.

Growing

BioCouture is a project ,funded by the Arts and Humanities Research Council (AHRC), uniting fashion and biotechnology using biocellulose to (ultimately) grow clothing under the management of Suzanne Lee. Lee premiered her latest work-in-progress at 'Fleshing out', a blouse made out of material derived from bacterial cellulose. In the project, bacteria are mixed with yeast and sweetened tea, a mixture that makes fibers stick to each other in big clumps. These clumps are then dried and put together to form a compact leathery papyrus-like substance. After two weeks of growing the fiber, it is 12mm thick and in a wet state. Then it is dried around a bust and ready to be used. At this stage, the dried fiber has a few problematic characteristics, it does not stretch and it absorbs water, making the current prototypes unsuitable to wear.

The Tissue Culture & Art Project (TC&A) have a project titled Victimless Leather. It's about a Prototype of Stitch-less Jacket Grown in a technoscientific environment, a miniature leather-like jacket grown out of immortalized cell lines (a mix of human and mouse cells) that cultured and formed a living layer of tissue supported by a biodegradable polymer matrix. Although this project is more like a statement, an actualized possibility of wearing 'leather' without killing an animal is offered as a starting point for cultural discussion, it's still an interesting future concept.

Other related projects exist like Biojewellery and the well-known Sugarjewellery by Greetje van Helmond. Biojewellery is a two-year collaborative research project by Tobie Kerridge focused on designing wedding or partnership rings that combine precious metals with bioengineered bone tissue cultured from cells donated by couples.

Fabric in a can

Spray-on Fabric is a patented technology developed by Fabrican which involves the creation of a formulation suspension which is sprayed by use of either a spray gun or an aerosol can. The fabric is formed by the cross-linking of fibres which adhere to create an instant non-woven fabric that can be easily sprayed on to any surface.

3.4 Conclusion

The future of garment shows the technological reason for the ending of ironing. People don't actually want an iron but good looking clothes and technology will be able to meet this need.

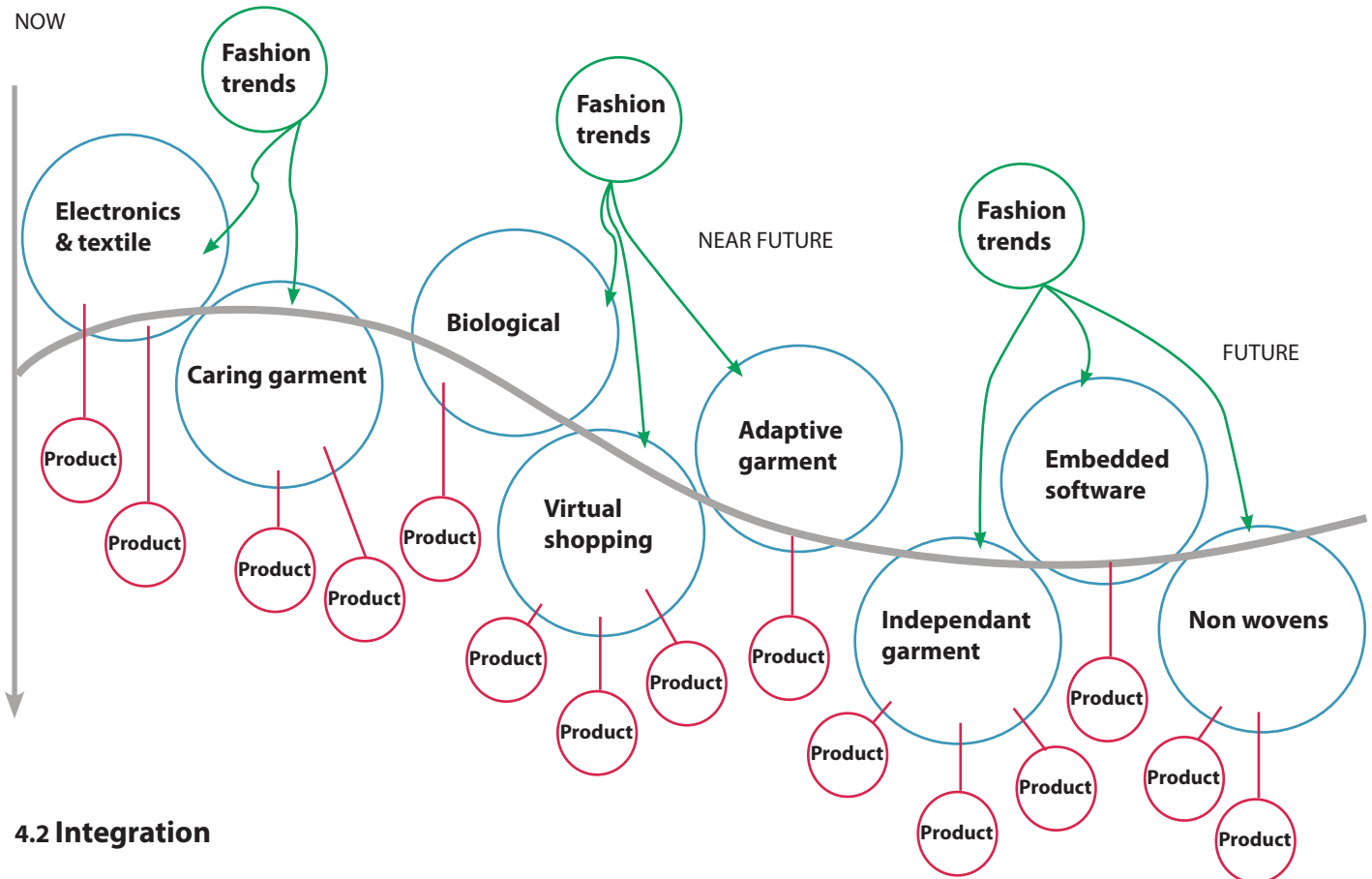
The future of garment also shows that this doesn't mean that there is nothing left to do in this area. A lot of interesting future developments exist to proceed with.

Generally the future of garment is about developments in biotechnology, nanotechnology, rapid manufacturing and software. In the near future electronics and biological developments are interesting.

Chapter 4 Product ideas

4.1 Introduction

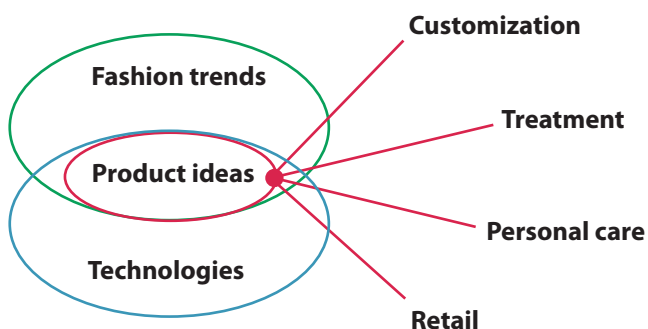
The technology phases in the figure below, composed in Chapter 3, are the starting point for the product ideas. The combination of fashion trends and technology leads to product ideas. Several product ideas will be explained for each phase.



4.2 Integration

The combination of fashion trends and technologies results in a classifying of product ideas. Every new technology group leads to other products.

The fashion trends represent the consumer mind-sets as explained in Chapter 2. The technologies represent new opportunities and new demands.



4.2.1 Product directions

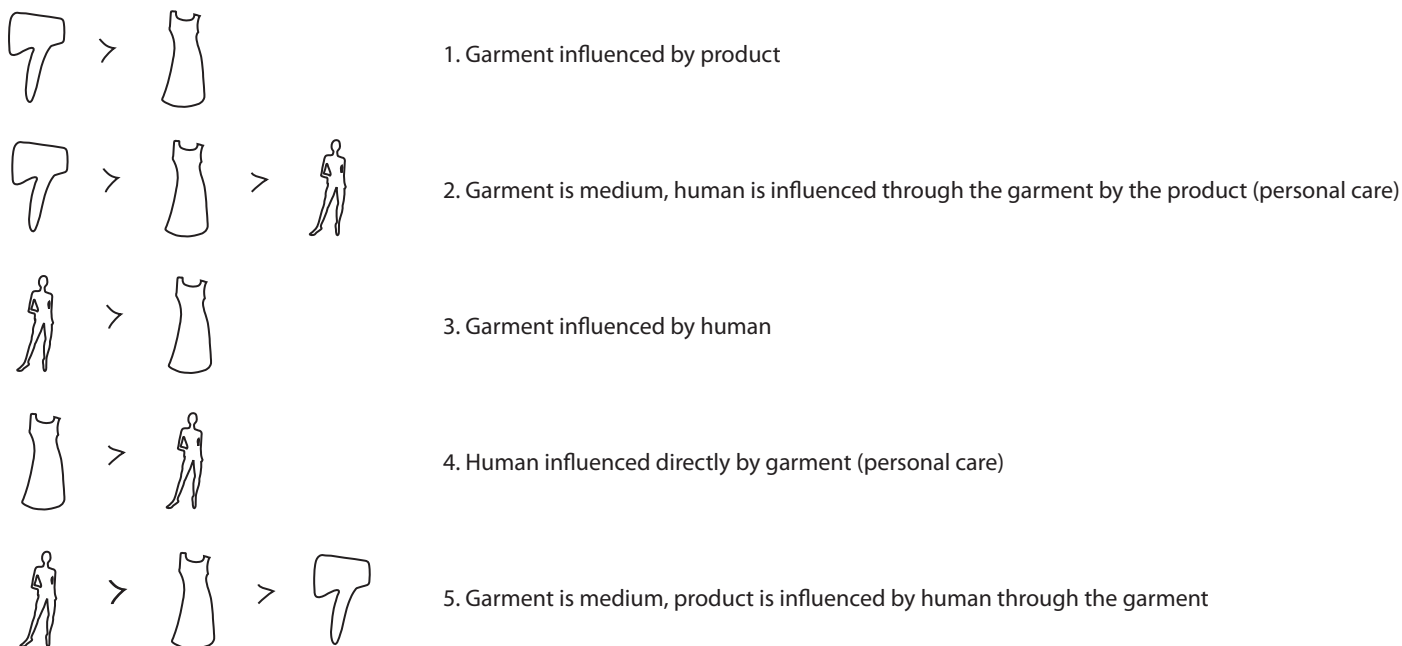
Each group of product ideas can be subdivided in 4 directions, customization, treatment, personal care and retail. These directions are found to be interesting to look at to prepare for new technologies according to garment.

4.2.2 Basic principle

Also the product ideas can be divided in a few groups, because nearly every product idea is based on the same basic principle.

It seems like designing a garment care product is finding a balance between product, garment and human. In every product idea there is some kind of interaction between these elements.

Basic principles:



4.2.3 Business

Another element that involves many ideas is the cooperation with another brand.

The icons below are included to the product explanations to understand the idea more quickly.

Business icons



A. Cooperation with another brand (fashion brand)

4.3 Product ideas

The product ideas are ranged under the technology phases.
Every explained product idea is composed by the categories: fashion trend, technology, direction, principle and business.
Furthermore the direction is important: customization, treatment, personal care and retail.

NOW

4.3.0 No technology

Customization
Fixator spray
3D ironing tools
Garment pen
Garment printer

Treatment
Steam cabin

4.3.1 Electronics & textile

Treatment
Smart closet

4.3.2 Caring garment

Treatment
Steaming bowl

Personal care
Baby monitor
Monitoring garment

NEAR FUTURE

4.3.3 Biological

Treatment
Enzym wash

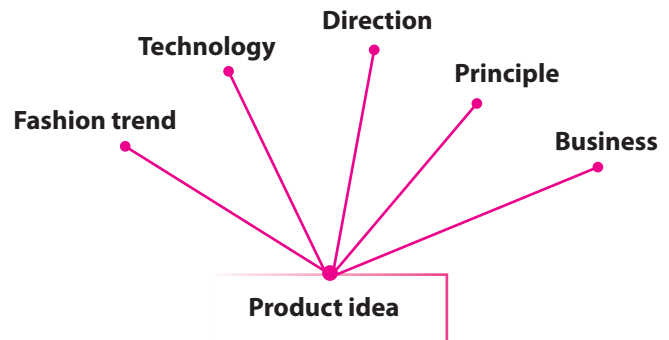
4.3.4 Virtual shopping

Retail
Philips fashion lab I

4.3.5 Adaptive garment

Customization
Free shape fabric
Dynamic garment

Personal care
Drug delivering shirt



FUTURE

4.3.6 Independent garment

Treatment
Garment food

4.3.7 Embedded software

Customization
Download print into shirt
Download shape into shirt

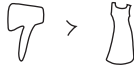
Retail
Philips fashion lab II

4.3.8 Nonwoven

Customization
100% recycle

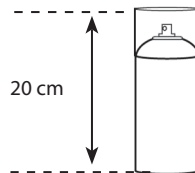
Retail
Philips fashion lab III

4.3.0 No technology

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Fixator spray	<i>Mind-set:</i> freedom yourself	No technology	Customization		-

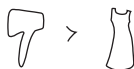


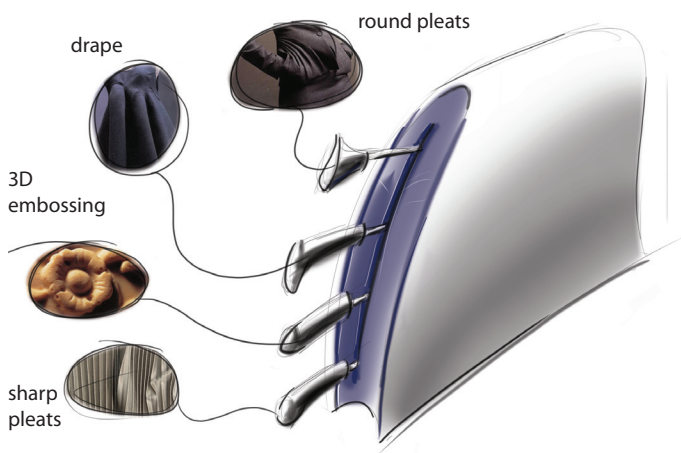
Information



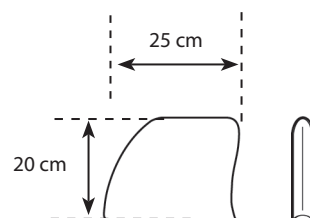
Different types of sprays are possible. The two most important are the relaxing spray and the extreme spray. The first one unwrinkles the garment, the second one has enough power to shape the fabric as you want.

Use: Hold the fabric in a position you like and spray. Now you've fixated your garment. It's possible to unwrinkle the garment this way and make big drapes and volume.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
3D ironing tools	<i>Mind-set:</i> yourself	No technology	Customization		-

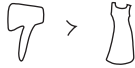


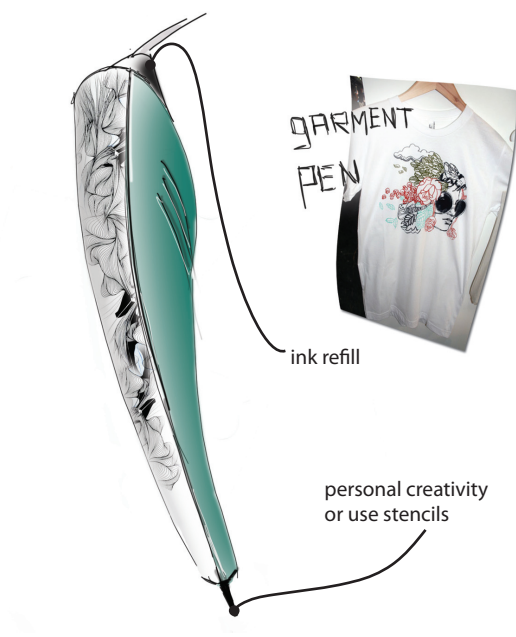
Information



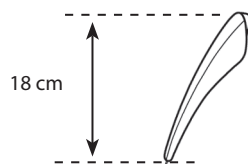
This product idea solves the problem of the difficult women fashion directions. Fashion is not flat, but you don't want to have wrinkles either. This product is suitable to make wrinkles and to treat wrinkle finishes.

The tools are heated by the holder. You can make 3D embossings, small pleats, round drapes and so on.


Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Garment pen	<i>Mind-set:</i> yourself	No technology	Customization		-



Information

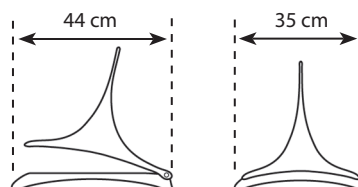


The garment pen can be used to make your own graphic on a shirt or other textile. This garment pen should make more durable graphics than a textile pencil or transfer paper.

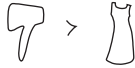
Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Garment printer	<i>Mind-set:</i> yourself	No technology	Customization		-



Information

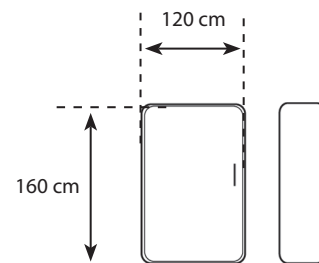


The garment printer can be used to print your own graphic or an existing graphic on a shirt or other textile. This printer should make more durable graphics than a textile pencil or transfer paper.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Steam cabin	<i>Mind-set:</i> freedom	No technology	Treatment		-



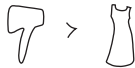
Information

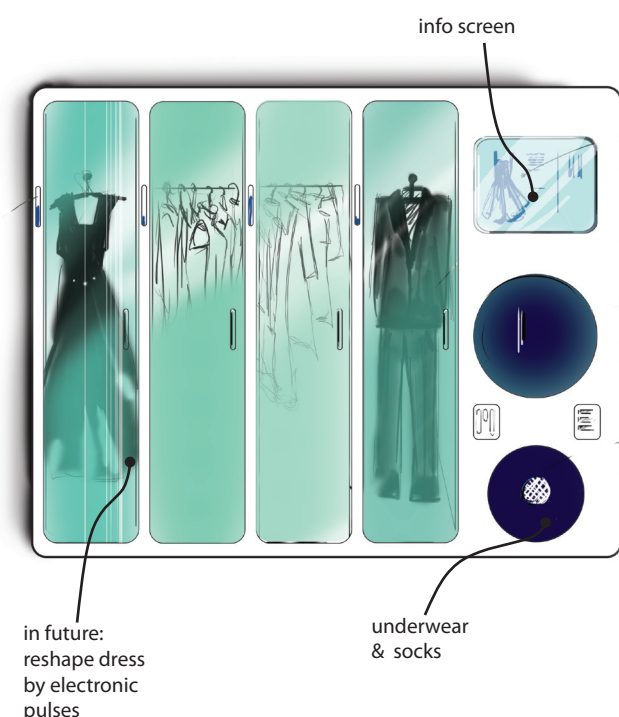


This product will be used by people who have a lot of delicate and difficult fashion pieces first. On the longer term more people will use the steam cabin, because fabrics become more and more easy to care.

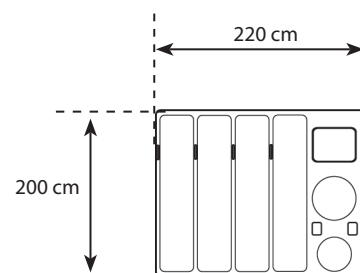
The steam cabin is a product idea that is already possible and is a good solution for recent problems. This product can be launched on the market right now.

4.3.1 Electronics & textile

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Smart closet	<i>Mind-set:</i> freedom	Smart tag Wearables Monitoring garment Electrically heated	Treatment		-



Information




This closet is able to read 'smart tags' and treats the clothes on the bases of the smart tag. This is a safe way, especially for garments with electronics.

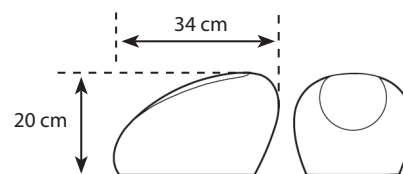
The conditions and shapes of the garments in the cabins are monitored by the closet. The different spaces can be controlled separately. Some garments need more care than others and the woman likes a different perfume than the man. The cabins can be controlled trough the 'Info screen' and control your personal settings. Personal settings could be used to change the kind of odour.

In future this idea can be expanded for other treatment problems.

4.3.2 Caring garment

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Steaming bowl	<i>Mind-set:</i> freedom	Cosmetics to wear	Treatment		

Information




This is a combination of skin care and garment care. Because in skin care the steam treatment is successful, this could be a nice combination. This table model has a more comfortable size than the known steamers have. Furthermore steaming is a good solution for delicate and difficult garments.

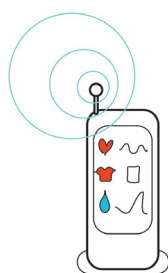
To steam a garment the fabric must be stretched. The shape of this bowl supports to stretch the garment on the edges.

The steam that comes from the bowl can contain several herbals, like vitamins or aloe vera, but also several odours. The garment will absorb the herbals from the steam.

Eventually an extra function could be to steam the body directly.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Baby monitor	<i>Mind-set:</i> freedom	Wearables Monitoring garment (Electrically heated)	Personal care		Philips Avent

Information




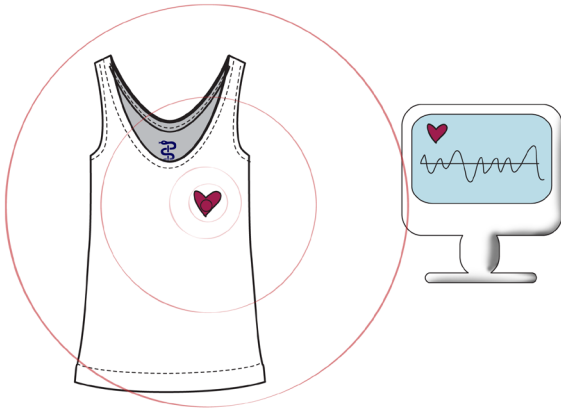
Baby's need a lot of care and attention. This suit will help to understand the baby and will give health-signals on time. This suit makes the parent or babysitter less concerned and less insecure.

Especially for parents of a child with a disease this suit could be very helpful. For some children it can be useful to registers the insulin level.

This baby suit can have several functions. For example the suit can monitor and control the temperature, register the heartbeat or give a wet alarm. The suit has a wireless connection with the babyphone.

Eventually this idea can be combined with electrically heated garment.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Monitoring garment	<i>Mind-set:</i> freedom	Monitoring garment	Personal care		people-friendly environments



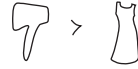
Information

To be monitored is not a nice feeling. The view of all the strings could be scary. Also the fact that you are chained on the monitor along with the feeling of the stickers on your body is very uncomfortable.

This shirt benefits the comfort of both patients and clinical staff. Just put on the shirt and it monitors your health. The shirt has a wireless connection with the computer. Furthermore this product is very comfortable for elderly people who want to live at home and to do virtual consultations.

This product idea fits in the Philips healthcare section. Philips provides the complete technique.

4.3.3 Biological

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Enzym wash	<i>Mind-set:</i> harmony	Waterless washing Like nature	Treatment		-


Information

The future is about waterless washing. Existing product concepts use plastic fibres or negative ions. The trend is to look at natural processes to find a solution.

This concept is about washing with enzymes made by animals, plants or insects and co-enzymes like vitamins or ions.

It is ment to be a slow process, like leaving the garment to soak. You leave the garment in the 'machine' while the enzymes do their job.

4.3.4 Virtual shopping

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Philips fashion lab part I	<i>Mind-set:</i> personal	3D body scan Virtual try-on Self-design	Customization Retail		 Prada

Information

Shopping will change. On one hand virtual shopping is upcoming, on the other hand shopping itself becomes smarter and more like test-labs.



Providing new technology in a shop is way for Philips to show what they can offer and let people use the technology before the technology becomes mature and affordable. A 3D body scanner is not the first thing to have at home. Also a garment graphic printer and a 3D printer may be too expensive. The services provided in the lab fit the technical level of a certain period.

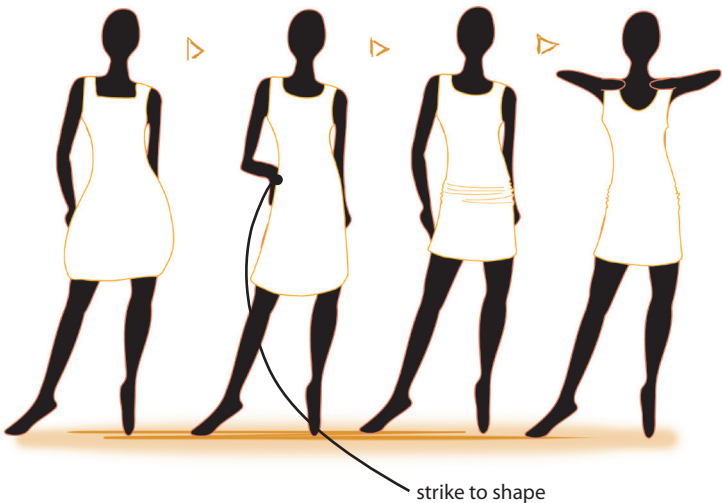
Part I of the Philips fashion lab provides a 3D body scanner, design programmes for customers and garment printers. An additional service is the virtual try-on which can be used at home after a 3D body scan is made.

The fashion aspect of the lab can be provided by a fashion brand. Prada would be the first to think of because of their advanced shops in New York.



4.3.5 Adaptive garment

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Free shape fabric	<i>Mind-set:</i> personal freedom	Shape memory Adaptive principle	Customization		 Prada



Information

With this fabric it's possible to have several looks in one day or look different every day. Your schedule can include both a business meeting and a party without going home.

This fabric can be stretched or shaped by the hand. It's possible to just strike out the wrinkle, but also to change the shape. You can both wrinkle the fabric and stretch it.

Philips provides the shaping technique in the garment that's why Philips has to cooperate with a fashion brand.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Free colour fabric	<i>Mind-set:</i> personal freedom	Adaptive colour	Customization		 Prada





Information

With this fabric it's possible to have several dresses in one piece. The fabric can be transformed into a colour that suits to the rest of the clothes. When you are in the mood for prints the print can be called up.

The appearing colours and prints are defined by the designer. The only thing you can do is to strike the dress at specific places and the colour will change or the print will change.

The colour could also react on your emotions.

Philips provides the technique in the shirt and has to collaborate with a fashion brand.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Drug delivering shirt	<i>Mind-set:</i> freedom	Drug delivering garment	Personal care		 Nike Björn Borg





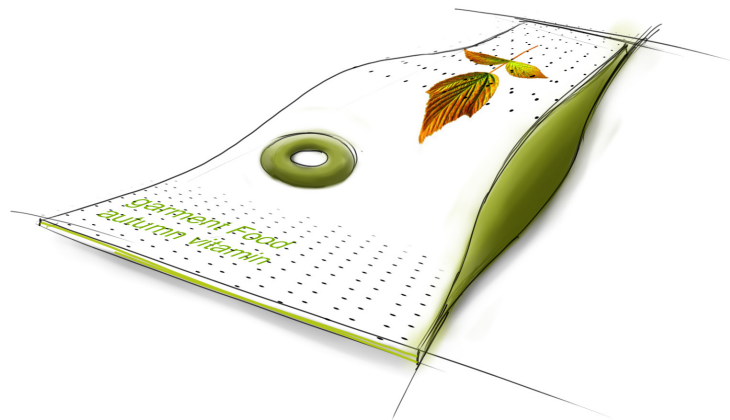
Information

A shirt which can monitor your health condition and treat you without you doing anything. Isn't that a great solution for people who are diabetic? Also athletics will take advantage of this solution.

This will be possible through a Philips technique and collaboration with sporty underwear brands for example.

4.3.6 Independent garment

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Garment food	<i>Mind-set:</i> freedom	Self-cleaning Self-healing	Treatment		 AH





Information

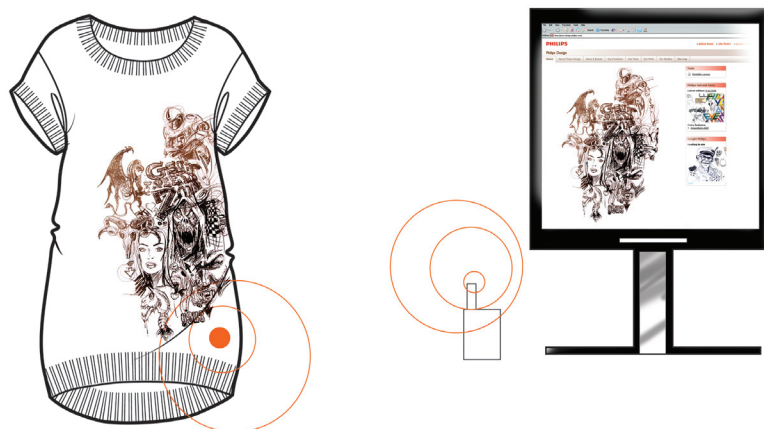
This product idea is based on the assumption that garments will be a kind of 'living' in future, as is reported in Chapter 3.2: self-cleaning, self-healing and growing.

This garment food will feed the microorganisms in the coating or the fabric. Different sorts of food will be available. Some will aim at the insulin delivering garments, some will feed the self-cleaning microorganisms.

This product will be available in supermarkets and pharmacists.

4.3.7 Embedded software

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Download print into shirt	<i>Mind-set:</i> personal freedom	Electronic colour	Customization		 Vero Moda





Information

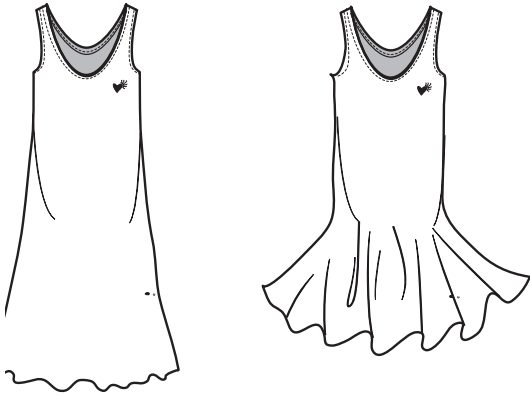
Programming the status of the fiber means that you can change the print on the shirt every day. This is the solution for the pollutive characteristic of fashion. In stead of buying a new shirt every season, it is possible having a new shirt every day without throwing the old one away.

You can buy a print on the internet or make one yourself. The shirt has a wireless connection with the transmitter. The transmitter sends the information from the computer to the dress.

It will be possible to change both graphic and total print or colour of the shirt.

Philips provides the technique in the shirt. Eventually the transmitter and the website with the prints can be Philips.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Download shape	<i>Mind-set:</i> personal freedom	Based on electronic colour	Customization		 Vero Moda




Information

Programming the status of the fiber could mean that you also can change the shape of a dress. This is another solution for the pollutive characteristic of fashion. In stead of buying a new shirt every season, it is possible having a new shirt every day without throwing the old one away.

You can buy a shape on the internet or make one yourself. The garment has a wireless connection with the transmittor. The transmittor sends the information from the computer to the dress.

Philips provides the technique in the shirt. Eventually the transmittor and the website with the prints can be Philips.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Philips fashion lab part II	<i>Mind-set:</i> personal	3D body scan Self-design Download shape & colour	Customization Retail		



Information



If in this period clothes can be fully programmed, buying new garment is unnecessary to have a new look. In this case you still have to buy some pieces, but not that much.

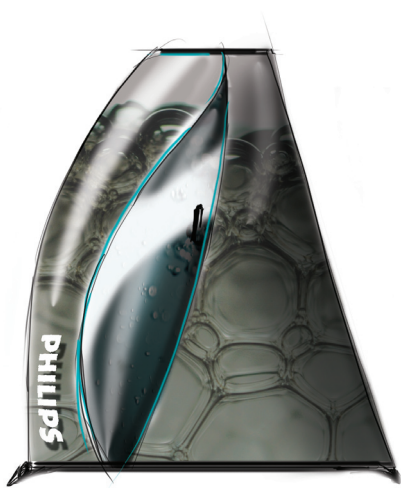
The Philips fashion lab will provide a series of incubators for garments. Design software and fashion-software of brands will be provided to get a new shape.

Furthermore the garment food will be available.

Old facilities like the 3D body scanner will still be there.

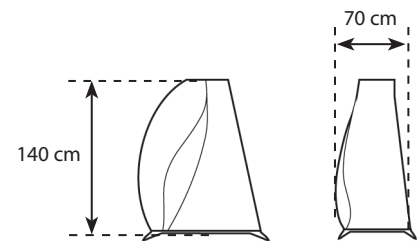
4.3.8 Nonwoven

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
100% recycle	<i>Mind-set:</i> harmony	Nonwoven 3D print	Customization		 digital fashion




Information

This product is based on the idea that in future garments consist of fibres or powder. These fibres could be bought in a shop in stead of garment.



This machine can print a shirt directly from digital information. You can buy the digital information from the Nike site for example and customize it before you print it. Creative persons can even design and print their own shirt.. When you are fed up with the shirt the machine can break down your shirt to fibres again.

This product is the solution for the problem of fashion, namely that it's different every season. Therefore fashion is very harmful to the environment.

Title:	Fashion trend:	Technology:	Direction:	Principle:	Business:
Philips fashion lab part III	<i>Mind-set:</i> personal	3D body scan Self-design 100% recycle machine	Customization Retail		



Information

In this period clothes consist of fibers. This fibres can be bought in the shop.

The 100% recycle machine will be available in the Philips fashion lab. Old facilities like the 3D body scanner will still be used to make the garment fit perfectly.

It will be a sensation to come to the Philips fashion lab and see your personal garments being printed. Customers will be able to tune the settings of the fabric, the graphics and the shape.

4.4 Conclusion

The combination of fashion trends and technology leads to several product ideas. These product ideas illustrate the future of garment related products. By observing the product ideas a general vision can be created about the four product directions. Customization and retail seem to have a connection in future, so these became one category called prosumption.

Treatment

The basic principle of garment care product ideas demonstrates that the ideas for NOW need a product to influence human or garment. In FUTURE only the garment and the human will influence each other. This means we approach a dematerialisation process.

Personal care

Personal care concepts show that healthcare will become a lot more comfortable and will free people from health related obligations. Garment will be able to care for people everywhere they go. Healthcare will be more dynamic.

Prosumption

Shopping enters into an exciting period. New technologies like internet and smart tags will provide a more virtual and personal way of shopping. Customers will be able to design their own fashion and wear unique and perfectly fitting fashion.

Furthermore developments like rapid manufacturing and customization will also change the fabrication process. The future of fabrication could even include at home garment printing.

It seems like fashionbrands and customers will work together in future. This process already goes by the name of prosumption (D. Tapscott, 1995).

5.1 Conclusion

Giving a clear view on the conclusion is difficult in this research. This is caused by the fact that this research actually includes three different kind of investigations. The first one is about the link between fashion trends and ironing. The second one is about the future of garment and technologies. The third one is about what these previous two mean for garment care products and other related products.

Visual trends

Fashion trends show that the traditional way of ironing is vanishing. Decoration, drapes and pleats are hard to iron. Furthermore delicate fabrics, vitamine finishes and metallic finishes could be easily damaged by an iron or washing machine.

Fashion trends ask for polite garment treatments, customization and personal care concepts. This means the iron is a fashion victim.

Mind-set

The fashion trends also show three mind-set directions, freedom, yourself and harmony. Comfortable and protective garment and easy to care fabrics are emerging on catwalks and in the streets. People fight back the mass production and consumer society by wearing heartwarming, imperfect and unique clothes. Customers concern about the earth's wellbeing and the exploitative fashion industry. Therefore fashionbrands are working on sustainable and fair solutions.

Customers no longer care about products, but about services and visions.

Garment future

The three mind-set directions are the guides for the future garment investigation. The future of garment shows the technological reason for the ending of ironing. People don't actually want an iron but good looking clothes and technology will be able to meet this need. The future of garment also shows that this doesn't mean that there is nothing left to do in this area for 'garment care'. A lot of interesting future developments exist to proceed with. These future developments can be classified in eight future periods:

NOW

1. Electronics & textile
2. Caring garment

NEAR FUTURE

3. Biological
4. Virtual shopping
5. Adaptive garment

FUTURE

6. Independent garment
7. Embedded software
8. Nonwovens

Generally the future of garment is about developments in biotechnology, nanotechnology, rapid manufacturing and software. In the near future electronics and biological developments are interesting.

Product ideas

The product ideas are the result of a combination of the fashion trends and mind-set trends with future technologies. The ideas can be classified in 4 directions: treatment, personal care, prosumption.

Treatment

The basic principle of garment care product ideas demonstrates that the ideas for NOW need a product to influence human or garment. In FUTURE only the garment and the human will influence each other. This means we find ourselves in a dematerialisation process.

Personal care

Personal care concepts show that healthcare will become a lot more comfortable and will free people from health related obligations.

Prosumption

The shopping experience will change. Customers will be able to design their own fashion and wear unique and perfectly fitting fashion. Furthermore developments like rapid manufacturing and programmable colour will change the fabrication process. The future of fabrication could even include garment printing at home.

There is every indication that fashionbrands and customers will work together somehow in future.

5.2 Recommendations

If the iron is a fashion victim, what about Philips? Philips obviously won't be a fashion victim, the future of garment and the product ideas show a lot of interesting possibilities.

Philips can choose between three interesting directions to continue with, namely garment treatment, personal care and the prosumption direction (or choose all).

'Treatment' and 'prosumption' are good directions if Philips wants to stay in fashion and garment care. If you look at ironing separately, the direction of self-shaping garment is the most interesting direction for future.

Personal care is an interesting direction because of Philips' experience in wearables, healthcare and human-friendly environments.

Some other brands investigated related product ideas. Information about these products can be found in the Appendix. This could help to make the right decision.

A lot of questions are remaining. Shopping for example is only reviewed shortly. The whole (fashion-) shopping future is actually a free-standing investigation. Furthermore all product ideas need closer technical examinations and elaborations.

The best way to finish this recommendation is with a quote from Alan Kay: 'The best way to predict the future is to invent it'.

"The best way to predict the future is to invent it."

Alan Kay

Chapter 6 Sources of information

6.1 Paper

Fashion trends

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Consumer attitudes

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6.2 Internet

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6.3 Interview

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Scott McLachlan, 2008, Innovation and future, June 20th

Sofia Andreasson & Sandy Spaan, insight in roadmapping, 2008, July 2nd

Pete Matthews, 2008, Future of shopping, July 6th

etc.

Chapter 7 Appendix

- A On the market
- B Interviews

A On the market

To determine the right direction for product development it's important to have more insight into the market. Following information could be found about several product idea's.

Steam cabin

A product in the delicate, steaming direction is the 'Eco Egg' which delicately handles even your most fragile, lacey underthings. But there's no spin-dry, so you have to hand-wring your clothes.

The 'AquaSteam' is a product developed by Whirlpool. Whirlpool claims this washing machine is able to refresh the garment, to remove stains and treat fabrics like cotton and synthetics because of the natural power of steam. Another steamwasher is noticed at LG.

Whirlpool also shows a steam travel steam cabin called 'Prêt-à-porter'. This steam system removes stains and wrinkles with the power of steam.



Auqua steam



LG limited edition



Prêt-a'-porter



Eco Egg

Smart closet

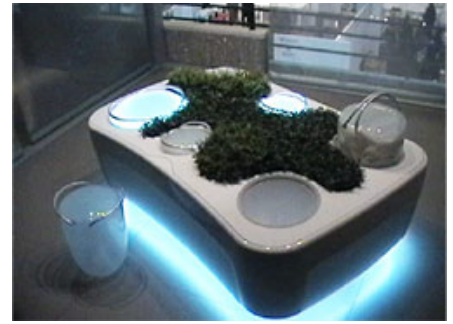
The 'Laundry wall' is a concept published by Whirlpool in 2006. This wall provides a refresher unit, marked bins to ensure you won't mix up your laundry and normal storage. The 'Smart closet' is a much more advanced concept but involves the same principle.



laundry wall

Enzym wash

The Whirlpool competition in 2003 'Project F: fabric care futures' shows a few winning concepts agreeing the 'Bacteria wash' idea. The OM concept for example is about a waterless approach to washing including nano machines programmed to behave like enzymes. The Biologic is a series of wash pods that clean slowly and cyclically. At the end of the cycle, special plants purify the water, so that it may be re-used.



Biologic

Steaming bowl

If we see this direction as a product that integrates clothing and body care a concept in this direction is the 'Body box' from the above mentioned 2003 Whirlpool competition 'Project F'. This idea includes chromotherapy lighting/ shower and steam cabin for both human and clothes. Other related products are the normal garment steamers and the face steamer.



Body box



face steamer



garment steamer

Monitoring and drug delivering shirt

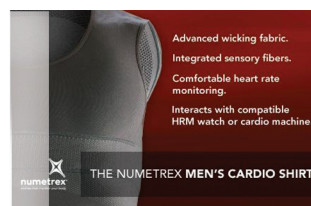
In 2003 Philips researchers demonstrated a technology device that allows online monitoring of body signals when integrated in garments, such as the women's bra or belts. Furthermore a lot of concepts and products can be found in the health-wearable section like monitoring watches, temperature controls, step trackers, smartshirts for sporters, home diagnosis, monitors allowing doctors to continually monitor high-risk patients and so on. There's a lot going on in this area, especially in athletics like the NuMetrex and Vitaljacket cardio shirt and the monitor sports bra and elderly living at home like the Tadiran Spectralink portable wireless monitoring device for chronically ill patients and the elderly. Sensewear enables automated monitoring of calories burned, dietary intake, duration of physical activity and sleep behaviour.



NuMetrex monitor sports bra



Tadiran Spectralink



NuMetrex cardio shirt



Sensewear

Baby monitor garment

Product ideas concerning the baby monitor garment are mainly found in the Philips data-bank. For example the 2004 concept called 'Baby temperature patch'. A patch with a smart chip can be placed on the baby's chest that monitors the temperature. The patch is connected to a wireless device. Obviously the baby monitor garment has the same objective, but has the chip integrated in baby garment.

Other Philips ideas are the monitor mat that measures weight and growth and compares this against the ideal for your baby's age and other health monitoring devices.

The research at the Ghent University concerns smart textiles and focuses on the development of textile sensors for medical purpose. These sensors will be used for monitoring heart rate and respiration on children in a hospital environment.



Ghent University

Free shape garment

A related concept for example is the 'Mystique dress' of CuteCircuit.



B Interviews

Abstracts and non-confidential information

Stefan Andreesen, 2008, information about shaman project, May 15th

The Shaman project is a Philips project about new ironing directions.

Sylvain Rottier, 2008, consumer insights steamer, steamer workshop, May 27th

In China is de 'steamer' al heel gebruikelijk. Er wordt vaker 1 kreukel verwijderd dan het strijken van een heel stuk.

De doelgroep van de 'steamer' is te verdelen in 'high envolved' en 'low envolved'. De eerste categorie richt zich met name op de details, de tweede groep stappen achteruit om het resultaat te checken. Deze groep is meer gericht op gadgets.

Synthetische stoffen zijn gemakkelijker te ontkreuen.

Peclers Paris, 2008, Fashioning the future, Trend meeting, June 4th

Fashion is not just fashion. Fashion represents aspirations, culture, myths and desires. Fashion is a lifestyle.

Peclers Paris way of working

- 1) Trend consulting
- 2) From trends to concepts - most important - translation
- 3) Product development

Trends

- * immaterial protection
- * therapy aroma
- * dressing wamer - thermostat low
- * comic life - digital into real life (virtual)
- * costume/toy feeling

3D + technology = functional. Kinetic textiles and 3D are upcoming.

Green thinking is a fashion attitude.

- * Fablab, green lab
- * Recycled luxury
- * Learn from nature

Future

Future is about social cultural research. Society becomes more complex.

- * Hedonism - taking good care of yourself
- * Nature
- * Imaginary
- * Technology - hidden technology

- * Graphics are important, handwriting is upcoming.
- * Natural protection
- * Herbal elixir
- * Liquide wood
- * Slow food
- * Craftmanship - reinventing
- * Less is more - content before looks
- * Show the process
- * Mineral
- * Flexibel/modular

Scott McLachlan, 2008, Innovation and future, June 20th

Think about what we have to do about the material changes. It's more about changes inmaterial than changes in fashion. How do we treat this fabrics?

But then: Maby there's a creative direction possible next to the personal care direction. Maby treating the garment is not necessary anymore.

Philips should be ahead of all fashionbrands and already have a technology to provide when they ask for it. It will happen anyway so why don't we already come up with a technique? Or provide a technique for fashion designers. Maby this fabric should not wrinkle AND do something else.

Women fashion is very difficult, a lot is happening. Maby we should provide little tags on the garment to customize.

Sofia Andreasson & Sandy Spaan, insight in roadmapping, 2008, July 2nd

Information about new roadmapping format.

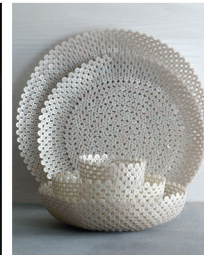
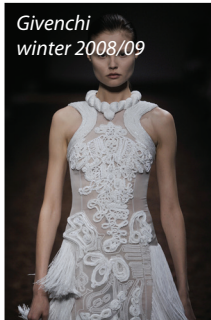
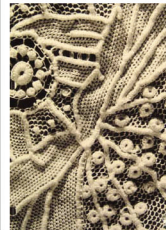
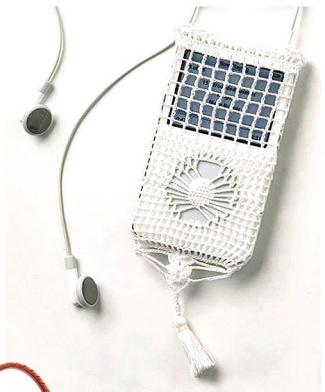
Pete Matthews, 2008, Future of shopping, July 6th

Focus on what it means when we strike through the iron. What does that mean for home, buying clothes, retail and marketing?

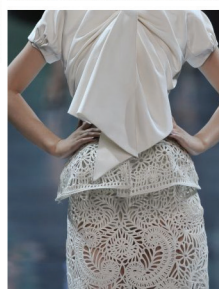
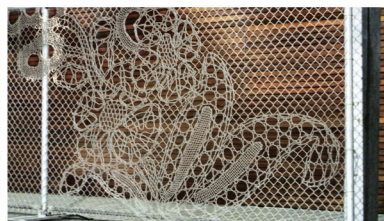
Information about future shopping concepts of Philips. These concepts mainly focus on the smart tag.

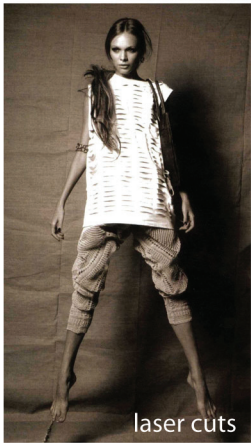
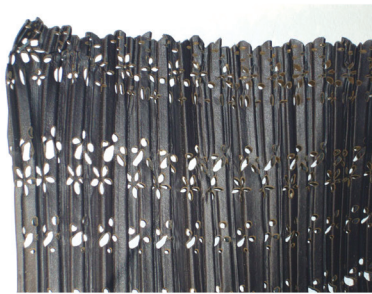
Fashion appendix

Alexander McQueen
winter 2008/09



Elie Saab
winter 2008/09





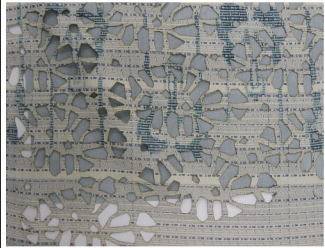
laser cuts



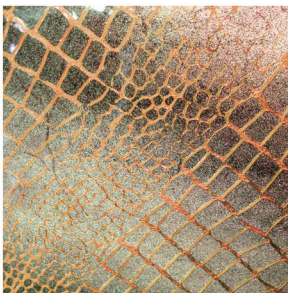
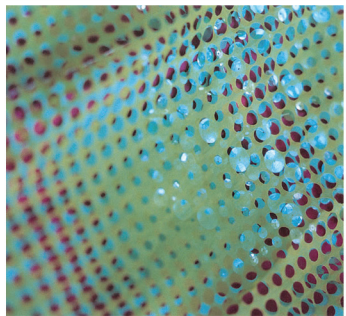
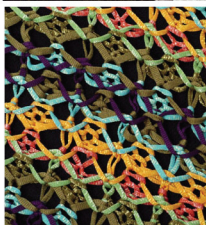
ModeBiennale Arnhem
2007



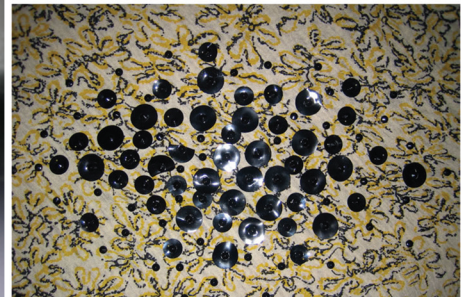
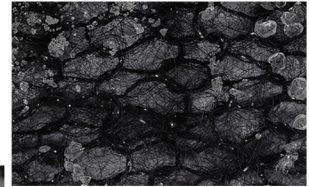
net



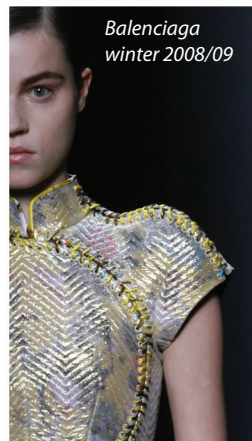
Modefabriek Rai
2007



Comme des Garçons
winter 2008/09



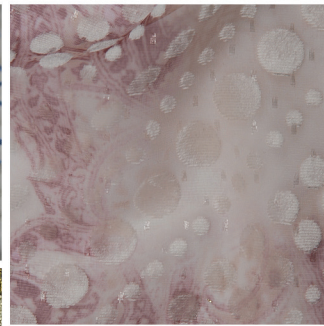
Facetted & exposed seams



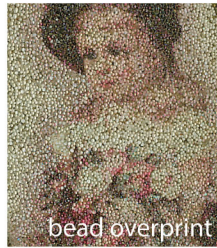
3D & surfaces



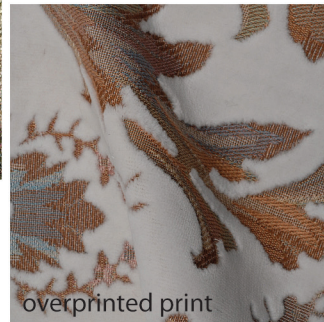
Aquascutum
winter 2008/09



flock print



bead overprint

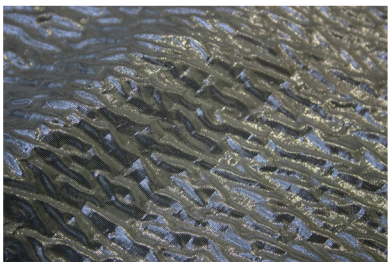


overprinted print



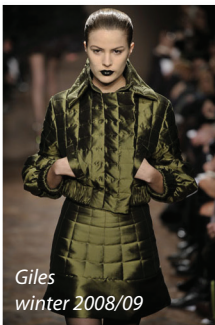
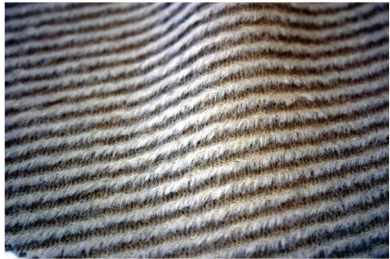
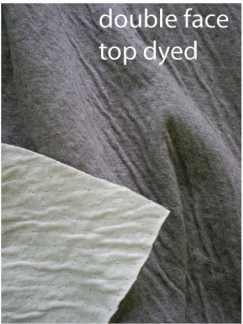
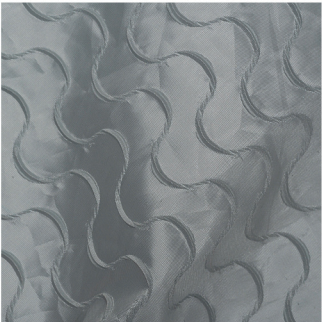
Missoni
winter 2008/09

Christopher Kane
winter 2008/09



Giambattista Valli
winter 2008/09



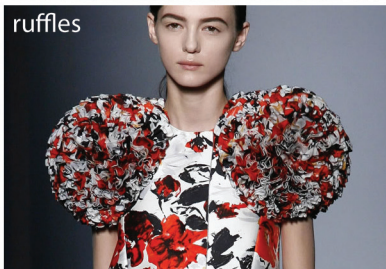




ModeBienale Arnhem
2007



Balenciaga
winter 2008/09



ruffles



Chanel
winter 2008/09



Bottega Veneta
winter 2008/09



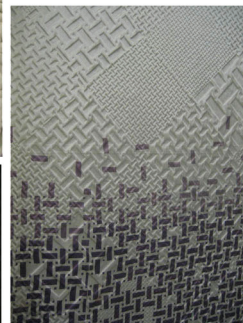
ModeBienale
2007

Emanuel Ungaro
winter 2008/09



flexible polymer moulding

heat-embossed



Victor & Rolf
winter 2008/09

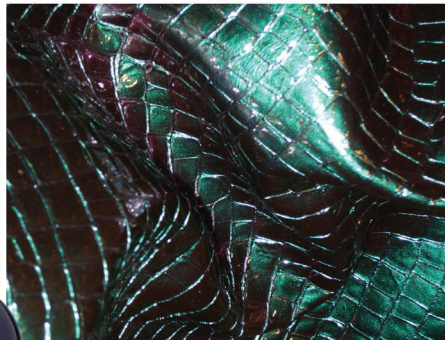
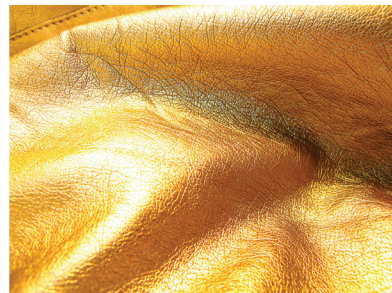




Louis Vuitton
winter 2008/09



rubbered surface

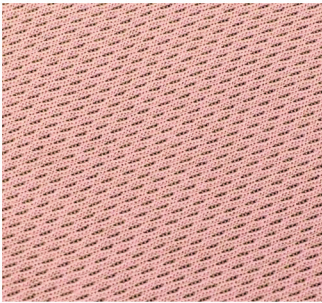


molten metal leather



Trussardi
winter 2008/09





coconut



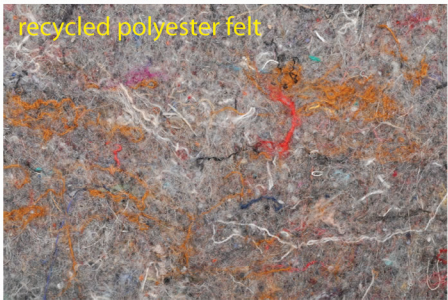
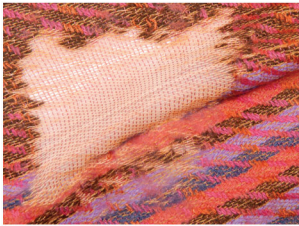
Jean Paul Gaultier
winter 2008/09



Hussein Chalayan
winter 2008/09



Hermes
winter 2008/09





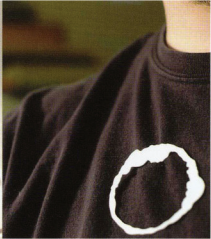
folk



DKNY
winter 2008/09



Ashis
winter 2008/09



leaving traces



Victor & Rolf
winter 2008/09



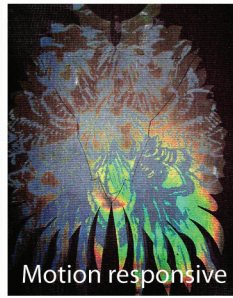
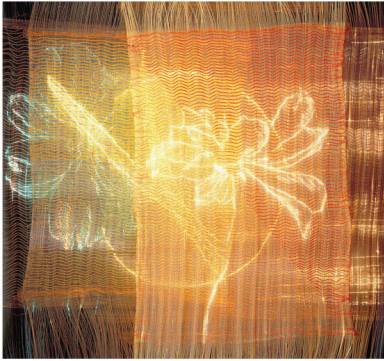
Giles
winter 2008/09



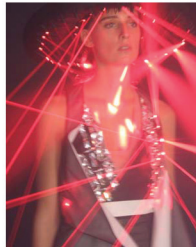
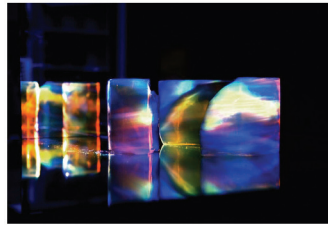
anti massproduction



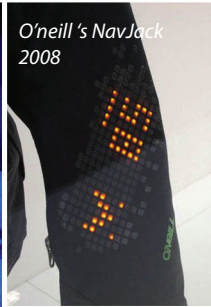
print reacting on fluid



Motion responsive



UV responsive



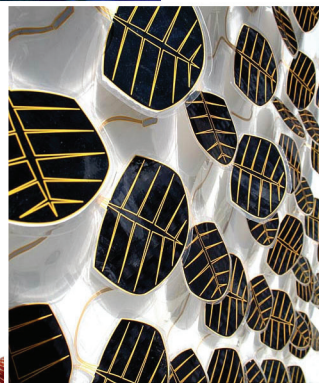
O'Neill's NavJack 2008



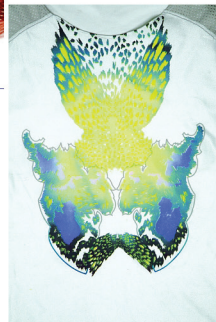
Hussein Chalayan



solar bag



Power Plastic®



Keri Wallace

protective membranes spray



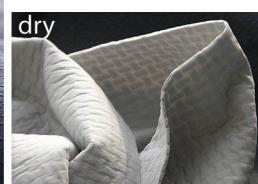
breathable neoprene



self-healing



ion-mask



dry



water protection

ion-mask



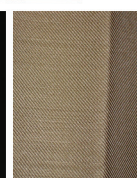
self-cleaning



water-repellent
UV-preventing



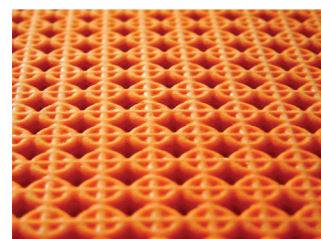
IonX



aroma therapy finishes



Aloe Vera
vitamin E



water-repellent
wind-repellent



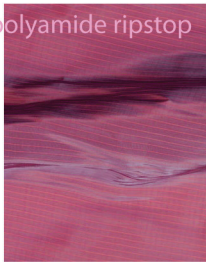
Berghaus Extrem Attrition
autumn/winter 2008/09



Alexander McQueen
winter 2008/09



metal & polyamide ripstop



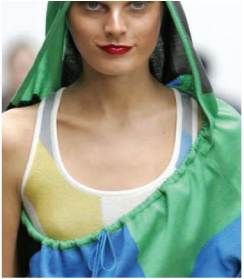
nylon



tyvek



lycra





Erin Fetherson
winter 2008/09



Versace
winter 2008/09



Preen
winter 2008/09

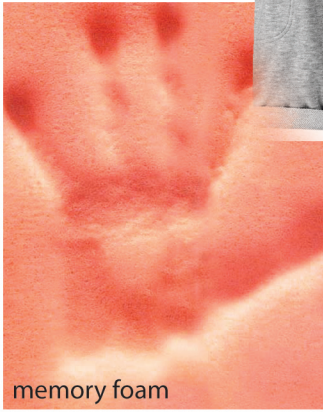


Alexander McQueen
winter 2008/09





super stretch



memory foam



Yves Saint Laurent
winter 2008/09



fieratex

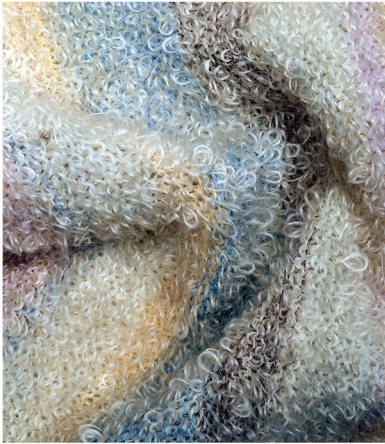


Miu Miu
winter 2008/09



Emanuel Engaro
winter 2008/09



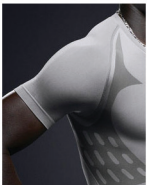




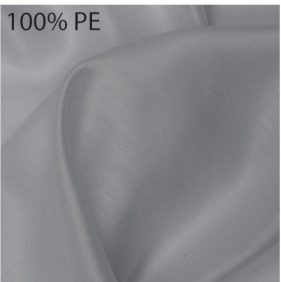
Alexander
winter 2008/09



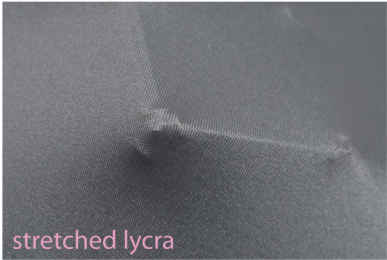
lightweight wool



lightweight nylon



100% PE

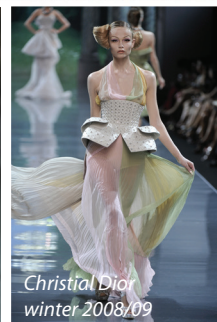


stretched lycra



Stella McCartney super
lightweight





Doo.Ri
winter 2008/09

Valentino couture
winter 2008/09



Renske Herder
2008

Universiteit Twente
Industrieel Ontwerpen

visuele bijlage
bachelor opdracht

Ik zie ik zie.....

Eerdere concepten

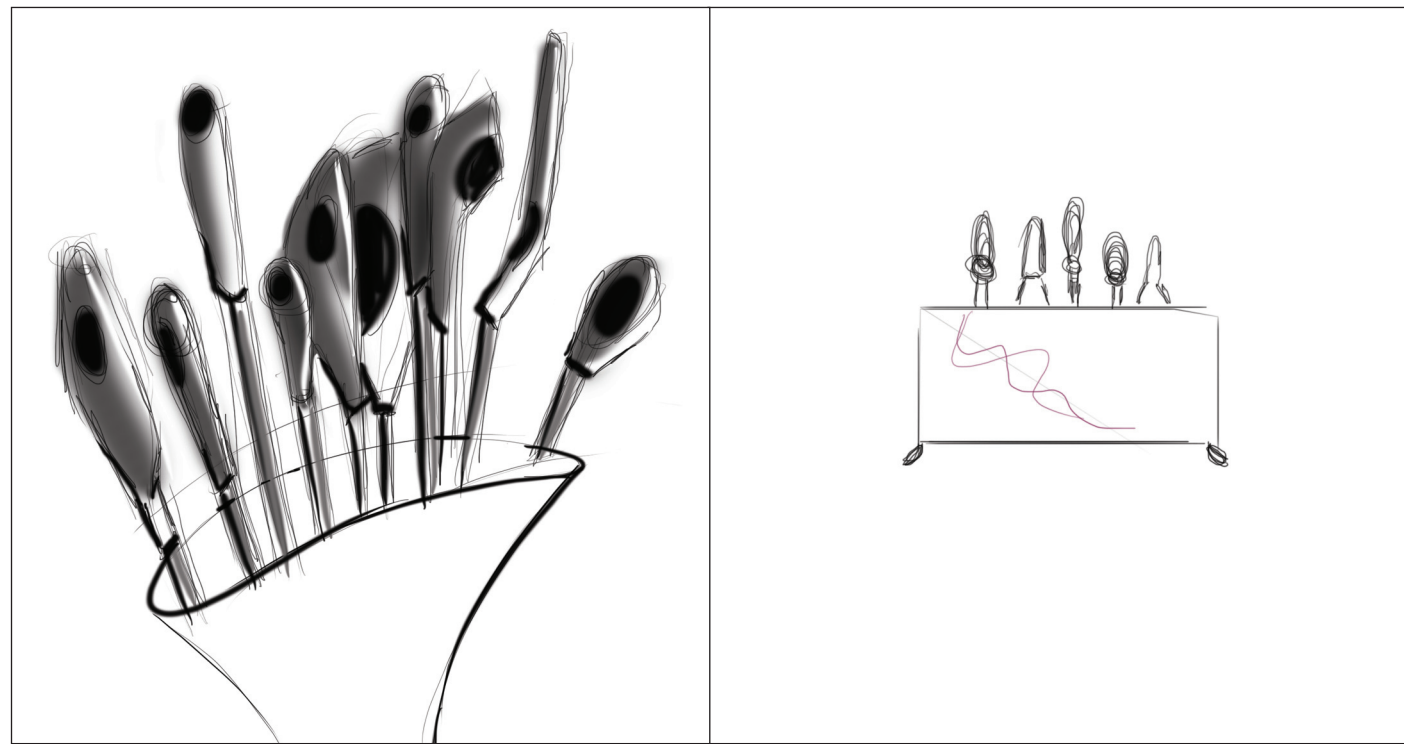
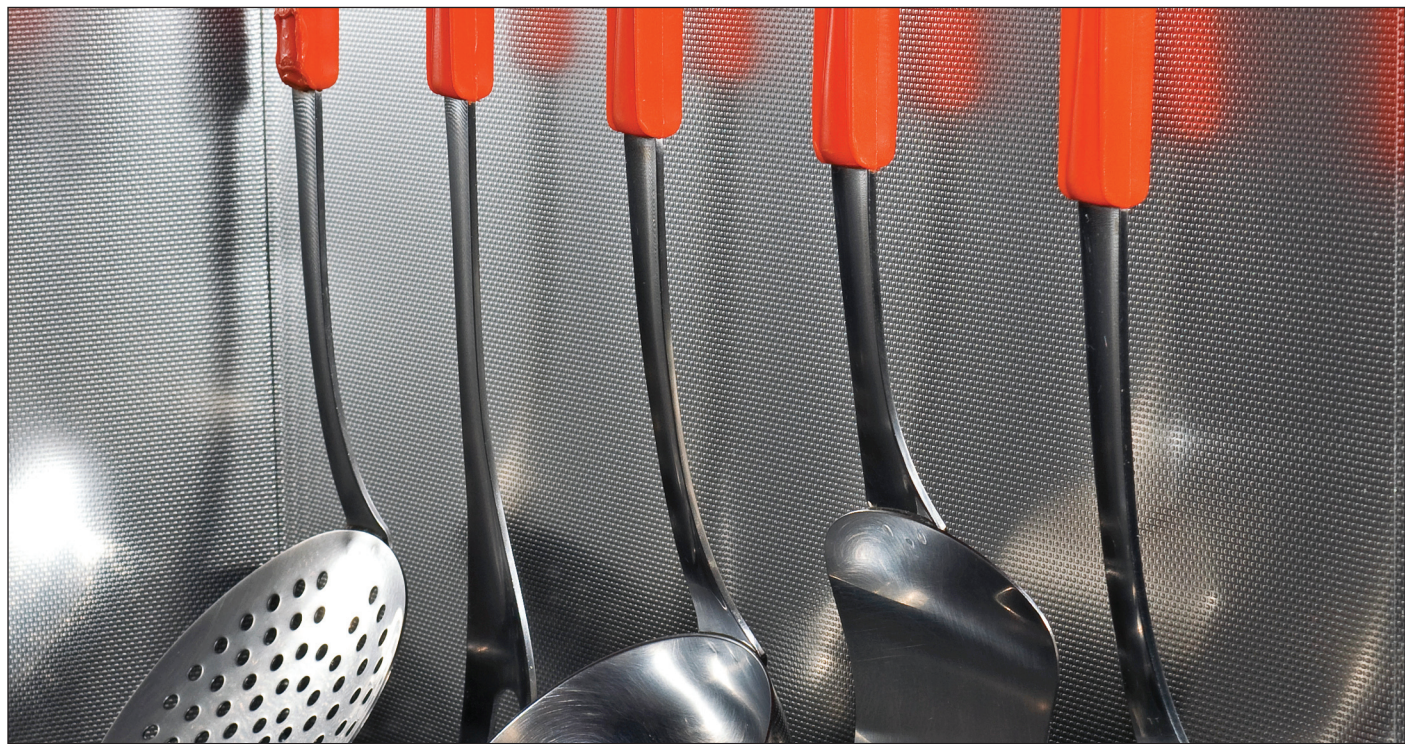
Spa

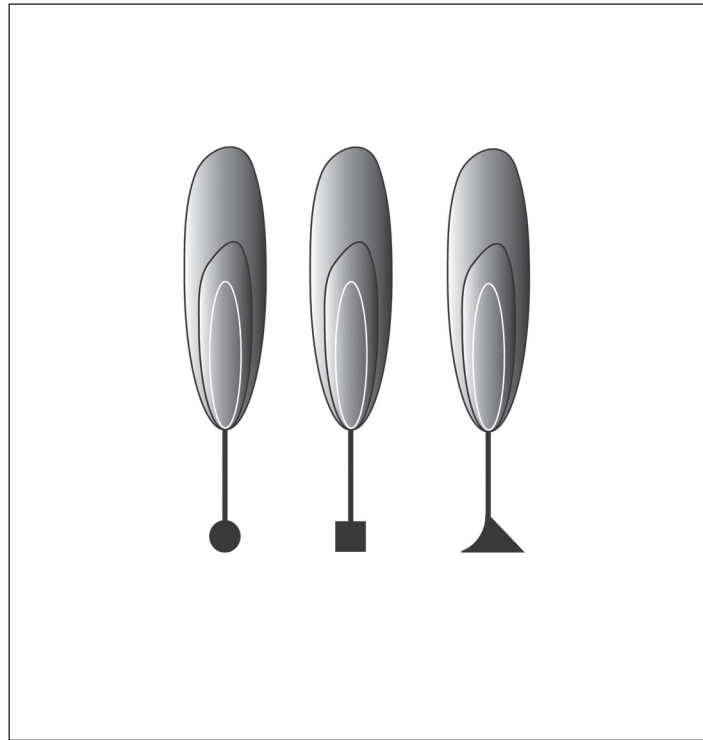
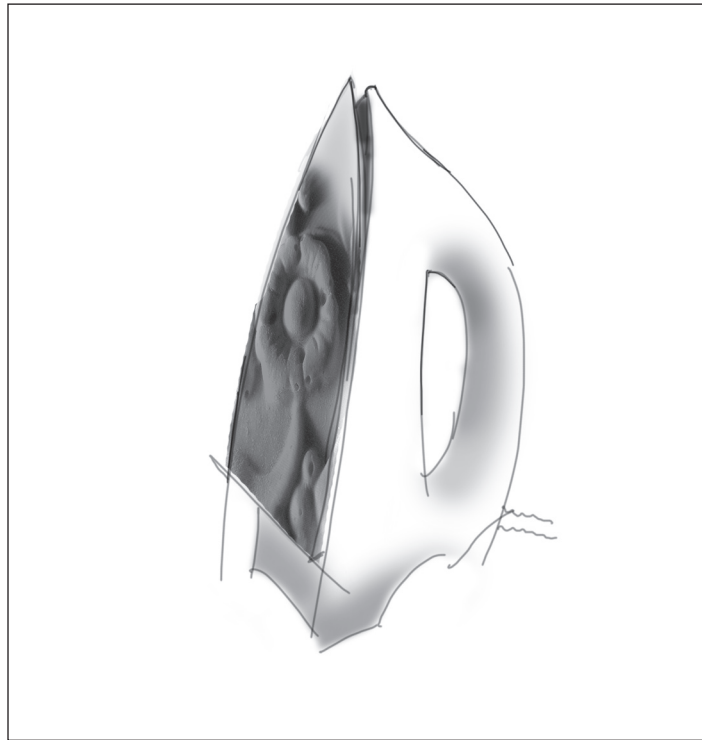


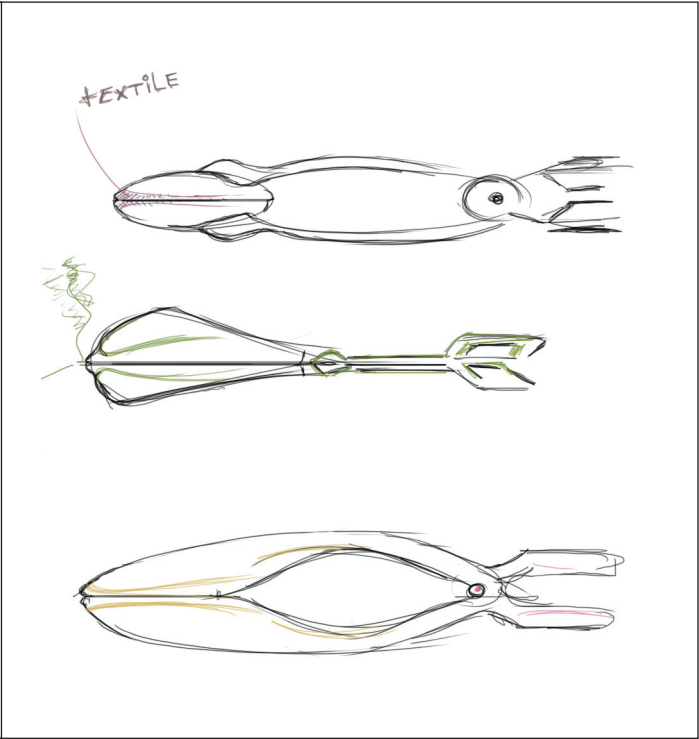
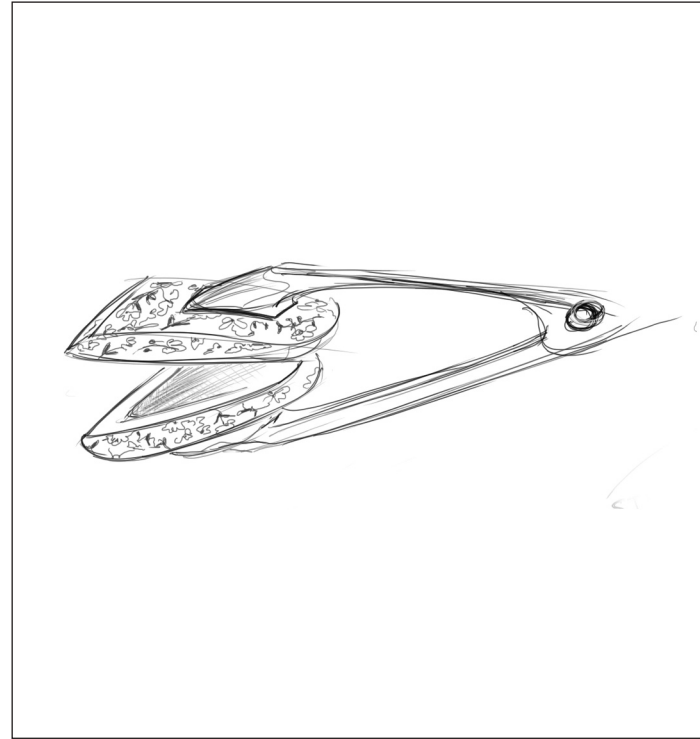


Eerdere concepten

Het vormen van kleren







Mind-set richting

Hartverwarmend



uv paint



dark
day



sunny
day

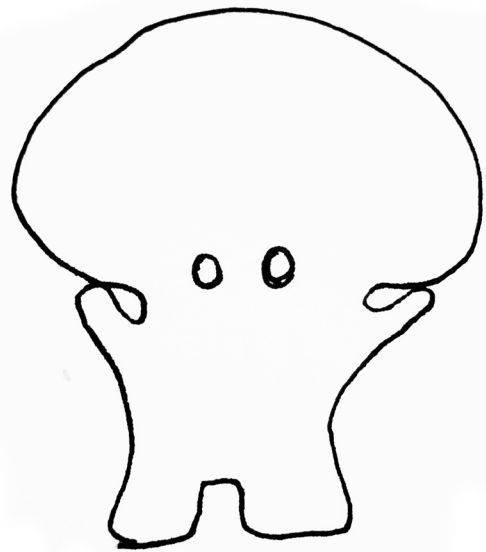


rainy



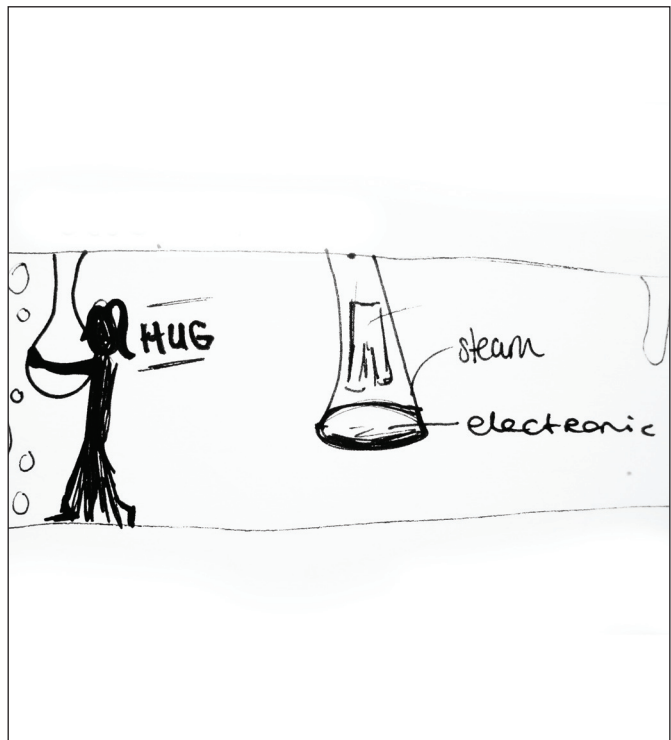
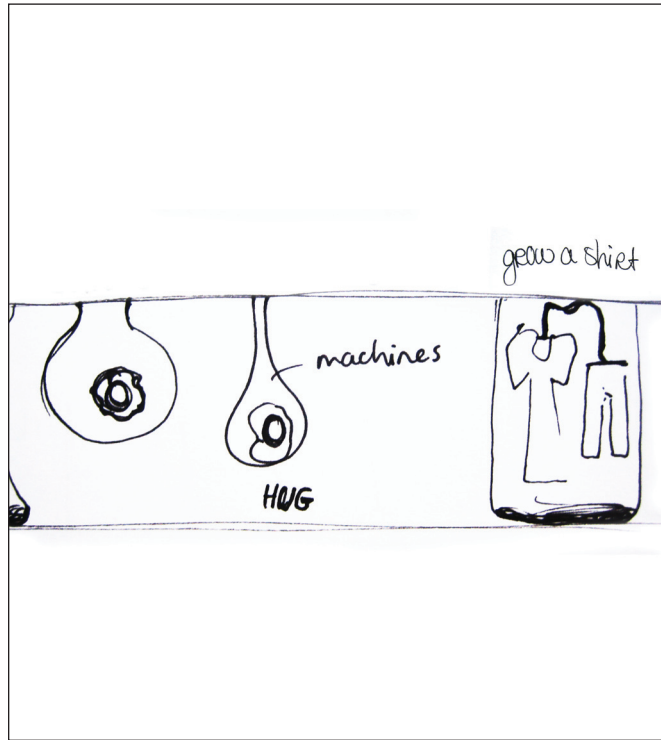
hot



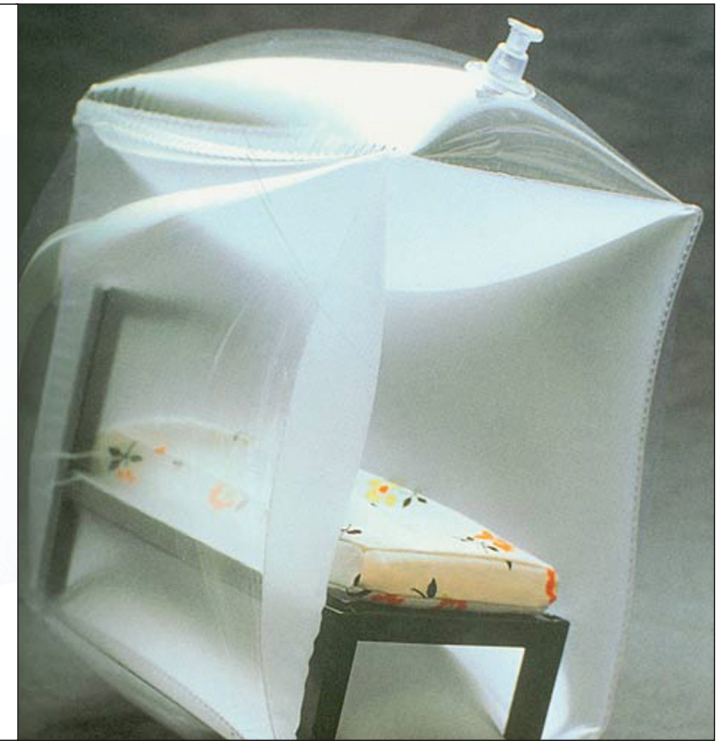
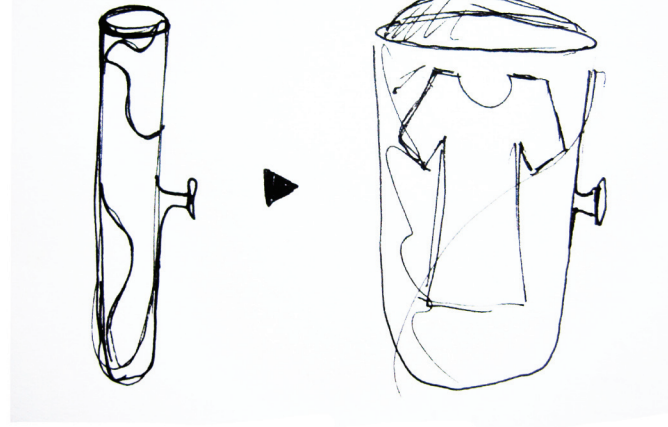


Visie

Toekomst



opbergen



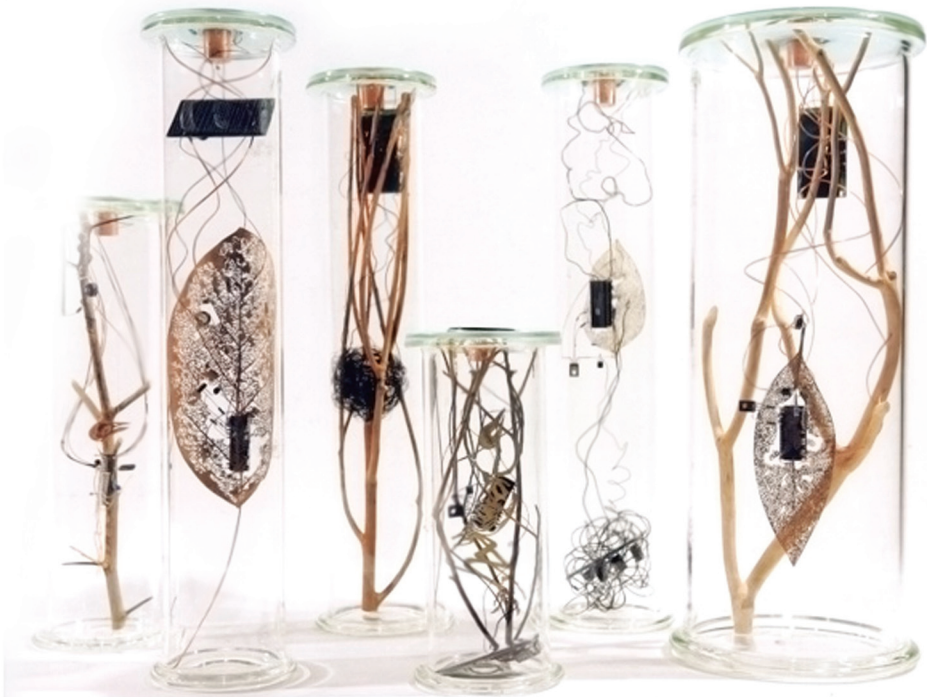
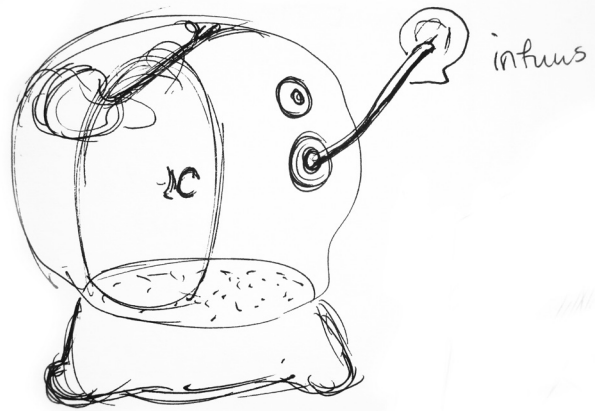
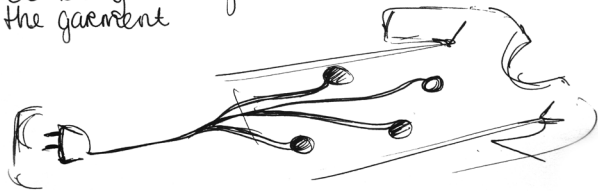
poeder
in

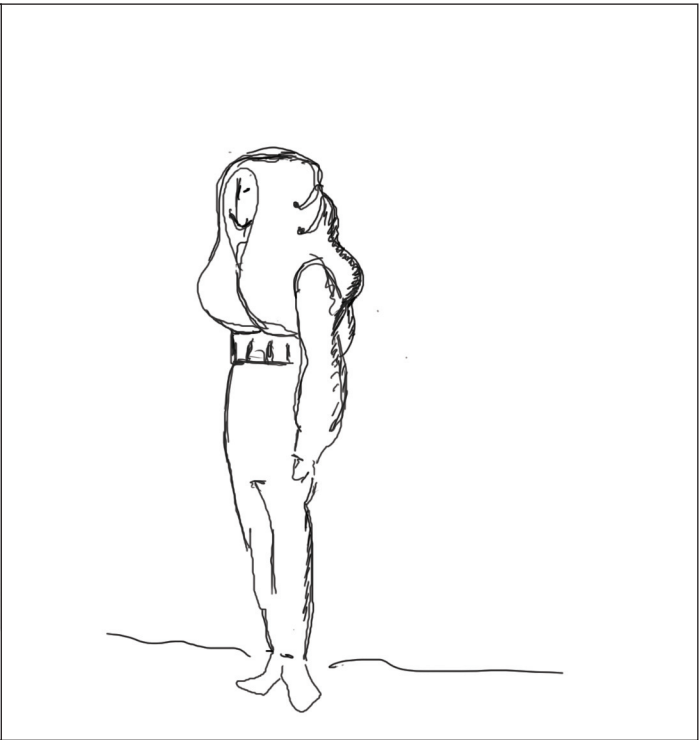


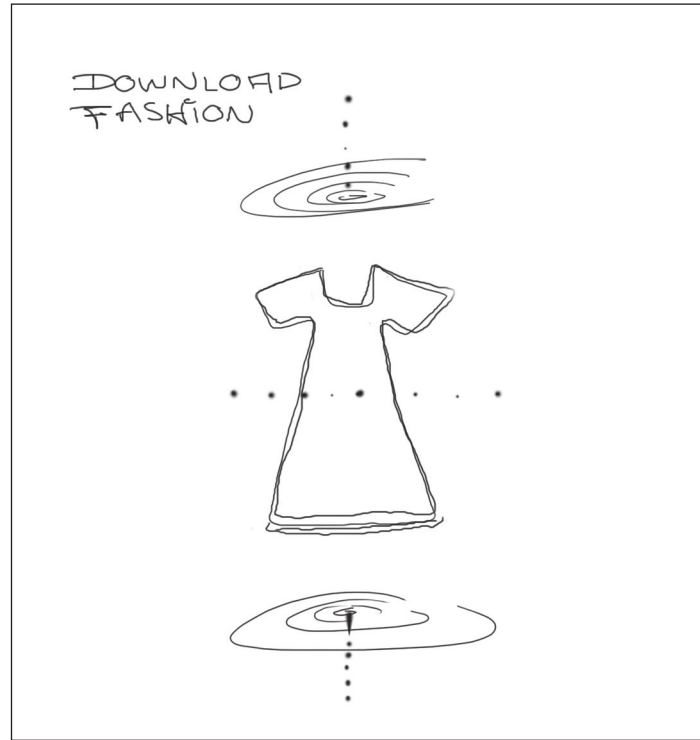
jurk wit

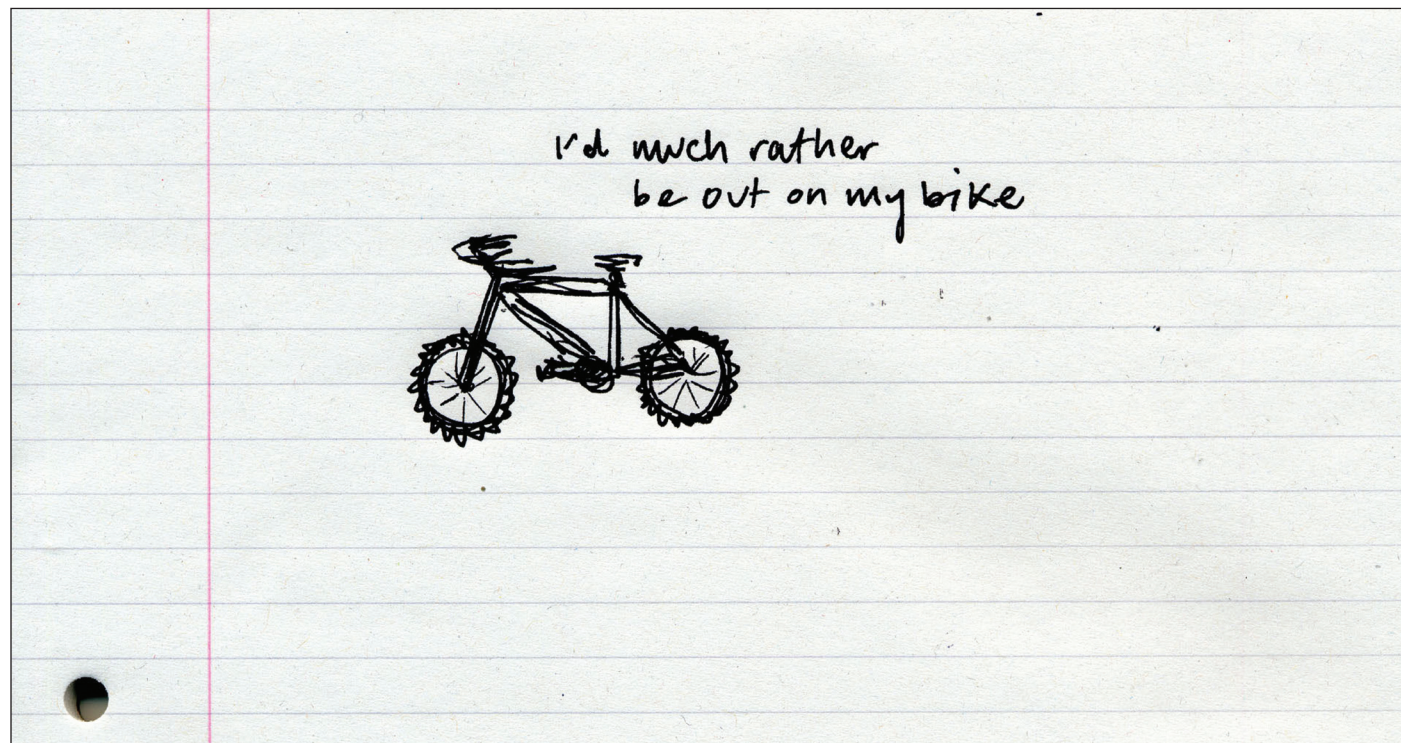


electricity through
the garment









.....wat jij niet ziet

Geïnspireerd door Bart Hess, Ernesto Neto and grijs.blogspot.com