

OWN STUDY

Figure 45. On top of the Ben Nevis (Seppälä 2009.; Photograph by Laura Seppälä.)

6 OWN STUDY

6.1 The study of outdoor companies from 2007 to 2009

Innovations scientists develop in the laboratory are not always the solutions actually used in the real outdoor business. I studied the environmental steps outdoor companies have taken in their production and everyday practices. I chose 12 companies to ensure a good overview of the sustainable responsible design of the brands publically known. I studied their promotional material and web pages on the internet in December, 2007 to find out if they mentioned any kind of environmental actions. Of course, they may have started to think LCA and SRD issues already, but very many of them were not advertising it at that time. Thus, my perspective is the same as the viewpoint of an environmentally aware, enlightened consumer, searching for information from the Internet. The aim of my study was to find out if outdoor companies were already using environmental values as an element of their marketing strategy in December 2007. I wanted to know what happened between December, 2007 and July, 2009 in public advertising on their web pages.

I studied the actions of Arc'Teryx, Columbia Sportswear Company, Fjällräven, Haglöfs, Houdini, howies, Jack Wolfskin, Millet, The North Face, Patagonia Peak Performance and Sierra Designs, because they were world-known outdoor brands. I knew that Patagonia was a forerunner in sustainability in the outdoor industry and that it won the Eco Brand of the Year award at the Volvo EcoDesign Forum in ISPO in 2008. Other firms have also made ecological choices, but they were not particularly known for their ecological design in 2007 and most of these outdoor brands were not having big marketing campaigns about sustainable responsible design or life cycle assessment in December, 2007. Some of the companies were making statements for nature and included environmental aspects in their policies. It seemed that sustainable design was still fairly new in the outdoor business in 2007. This may be partly because high-tech materials are rarely new innovations and were first founded few decades ago. I repeated the same study in October, 2009 to see if anything has been changed. My hypothesis was that the big EcoDesign Forum in ISPO in January, 2008 might have increased ecological actions and that sustainability would be more apparent in their advertisements. Sustainability was also a key theme of the OutDoor show in summer, 2008 in Friedrichshafen, which might have affected companies' current actions in fall, 2009.



Environmental Statement

Arc'teryx strives to continually become more aware of the impact of our business practices.

Manufacturing Statement

Find out more about how we manufacture our products.

Our Take On Environmental Stewardship

Arc'teryx strives to continually become more aware of and sensitive to the environmental impact of our business practices. We evaluate our processes and continually implement new strategies to improve efficiencies and minimize our footprint.

Our Design Philosophy and the Environment

Arc'teryx designs and constructs products to perform better in the field. We believe that a high quality product is one that is environmentally responsible, durable, and aesthetically appealing. We strive to create products that are not replaced frequently due to inferior materials, poor quality, or fashion trends.

We unite the most technically advanced materials with sophisticated styling, ensuring that our products are not only functional but also aesthetically pleasing. We strive to minimize the total amount of material used over time, and the energy consumed in the production of our products.

Choices

Arc'teryx believes in integrity and respect for the environment. While many of our materials have not yet found acceptable renewable alternatives, we are committed to finding them.

If you are looking for exceptional outdoor gear, we have the premium materials and construction you need. We strive to provide you with the most reliable source of information and support for your outdoor adventures.

Peak Performance



Figure 46. A collage from sustainable responsible actions of Arc'teryx (Seppälä 2009 according to Arc'teryx 2009.)

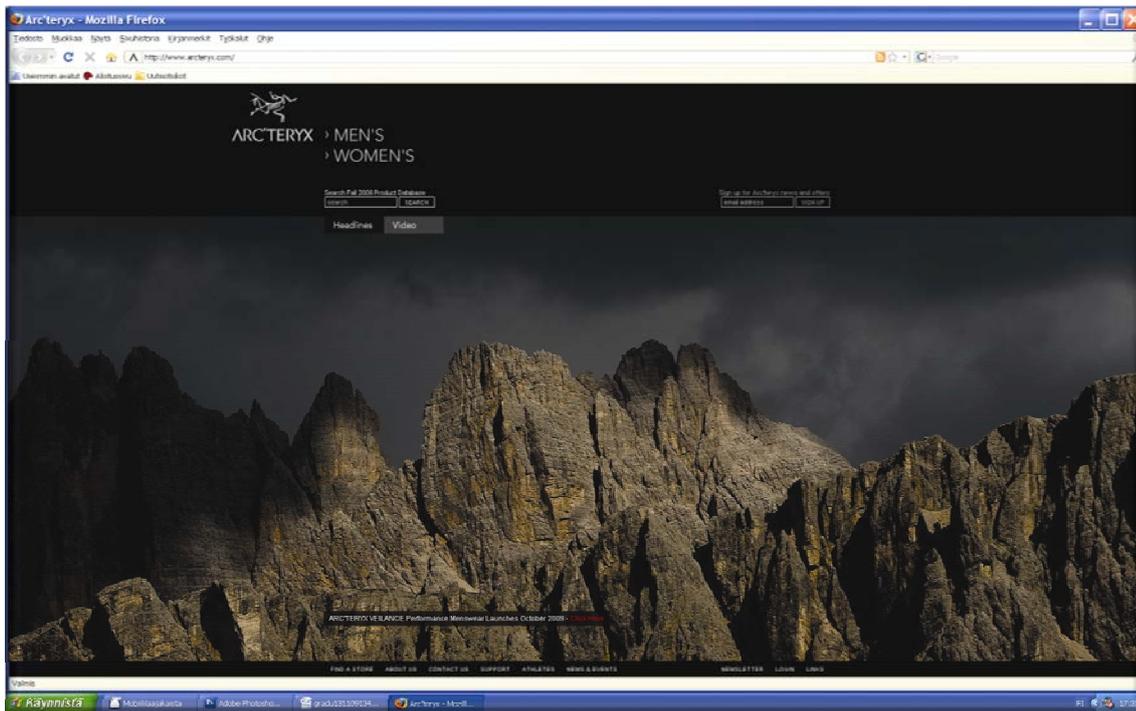


Figure 47. *Arc'teryx home page at 13.11.2009 (Arc'teryx 2009.)*

Arc'teryx is a Canadian company founded in 1991 (Fig. 47.). According to the catalogue of ISPO at Munich, the biggest winter outdoor fair in Europe, Arc'teryx described itself as a manufacturer of the world's finest technical outerwear, rucksacks and harnesses for snow sports, mountaineering, backpacking and hiking.¹⁶⁷ According to their web pages they have won several design prizes. According to my survey of December 2007 they did not mention anything about environmental values, sustainable design or life cycle assessment in their web pages. Nevertheless they buy their fabrics from W.L.Gore and Polartec. Gore-tex® and Polartec® fabrics with registered trademarks.¹⁶⁸

A year and a half later in July, 2009 they had added extensive environmental material to their web pages (Fig. 46.). They claim they are continually becoming more aware of and sensitive to their environmental impact. They evaluate their processes and think about new strategies to improve their efficiency and minimize their ecological footprint. They proclaim that they have become more capable of working towards tangible, positive changes in their environmental practices every year. This is a very important change and it is interesting that they emphasize it.

¹⁶⁷ Official winter ISPO catalogue 2007.

¹⁶⁸ Arc'teryx 2007.

Design and products

Arc'teryx believes that making high quality products is the best way to be environmentally friendly. If a product retains its performance properties and aesthetic appeal for years, there is no need to replace it with a new one. This saves raw material and energy. That is why the aim is at highly functional designs and sophisticated styling, without following seasonally changing fashion trends and avoiding inferior materials and poor quality workmanship.

Materials

I think that their statement about materials is one of the most interesting ones in my whole study. At the Volvo EcoDesign Forum in ISPO in 2008, companies were advised to be open with their customers. They were told to admit that they are at the beginning of a journey, but that they are willing to work for a more sustainable future. Arc'teryx acted exactly like that. They claimed that they were unwilling to compromise on technical performance. They had found no acceptable renewable alternative that would not affect their products' performance or durability. They claimed they are continually evaluating fabrics and when they find one which meets their criteria for quality and performance, they will integrate it into their production. Arc'teryx tells the customer if they are looking for a product that is made with organic or renewable material, Arc'teryx's products may not be the right choice for them. Except for their merino wool products and cotton casual wear, all their products are made from synthetic materials derived from petroleum-based sources.

Whether they are right or not to proclaim this information to their customers, it is a matter of interest. In a way, they are lifting themselves above other brands using renewable or organic materials by saying that these are not good enough for them. Their strategy is interesting. They are trying to convince customers that they are not unimpressed by environmental values and they are working towards sustainability in many different ways, but that they are not using green material card. Quite the contrary, they are saying material choices said to be green in the market, do not last and may actually consume more resources than using virgin materials. Arc'teryx insists that according to their testing, recycled synthetic materials are not as strong as virgin fibers and do not meet their durability standards. According to them, recycled materials wear out more quickly and therefore need to be replaced more often. They think that recycled materials should be used for non-critical products such as plastic bottles, not for outerwear used in severe alpine conditions.

Office, factory and warehouse

Arc'teryx co-operates with an independent auditor called Wisent Environmental Inc, which evaluates their head office, factory and warehouse facilities. Arc'teryx receives detailed evaluation reports from them on their facilities and recommendations about eco-friendly office products. They have also established their own Green Committee to consider how they can reduce their operational impact on the environment. Their printing house called Hemlock Printers Ltd., which prints their commercial material from marketing catalogues to workbooks, is according Arc'teryx, a leader in responsible and sustainable printing practices and has been named Canada's Most Environmentally Progressive Printer three years in succession. Arc'teryx orders only small batches to avoid overages and to reduce the amount of their catalogs to be recycled. I think that this is quite admirable and a challenge to them, because estimating the quantity cannot be easy and the unit price of big orders is normally less expensive than several small orders. They are also moving towards more electronic publishing and communication to reduce their overall paper consumption.

In the office they use post consumer recycled paper and recycle it again, by having recycling bins at every printer and employee's desk. They also recycle everything they can such like metal, glass, plastic and paper in lunchrooms and support greener transportation for their employees. Arc'teryx encourages its employees to use public transport or ride a bicycle to work. Full-time employees can get discounts from transit passes and cyclists can use a bicycle storage room with repair stands and maintenance tools. Arc'teryx also allows its employees to work on flexible schedules to avoid polluting traffic jams or to work entirely from home. According to their web pages they are fortunate to use mostly green energy, because the majority of electricity in British Columbia is non-polluting and from renewable sources.

Arc'teryx does its design, patternmaking and product developing in Vancouver and they have a domestic manufacturing factory with 300 employees. Besides Canada, they produce in USA, China, El Salvador, Italy, the Philippines, Taiwan, Thailand and Bangladesh. They stress that they only accept the highest of standards quality in their manufacturing locations and operate at the highest levels of social responsibility. They only work with contractors who comply with SA8000 standards and have safe and fair working environment. Their own production team maintains a presence at the factories and they also use independent auditors from Bureau Veritas to monitor and report on their suppliers manufacturing facilities.¹⁶⁹

¹⁶⁹ Arc'teryx 2009.

CORPORATE RESPONSIBILITY



At Columbia Sportswear, we are committed to building a company of which we can all be proud - not only of the innovative products we create and the financial results we achieve, but the manner in which we achieve them. Whether it's responsible sourcing, being a good neighbor, or reducing our environmental impact, we believe that being a responsible company is a goal worth pursuing.

We want you to be proud to wear our products, and use our equipment anytime you step into the outdoors. Your feedback is invaluable to the continuous improvement of our responsibility programs. I invite you to participate in making our products better by providing feedback at feedback@columbia.com.

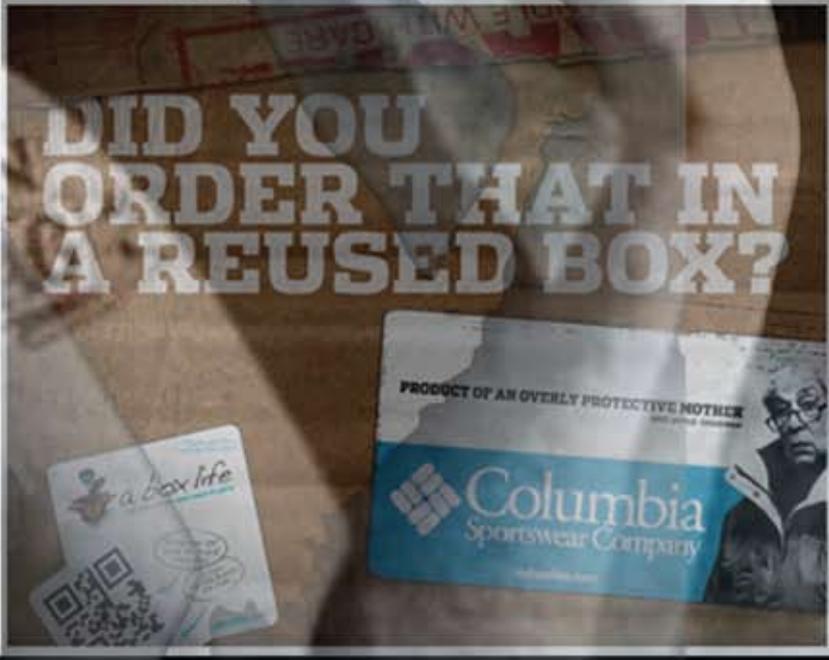
-Tim Boyle, President, CEO, and Director

HERPROJECT (HEALTH ENABLES RESILIENCE)

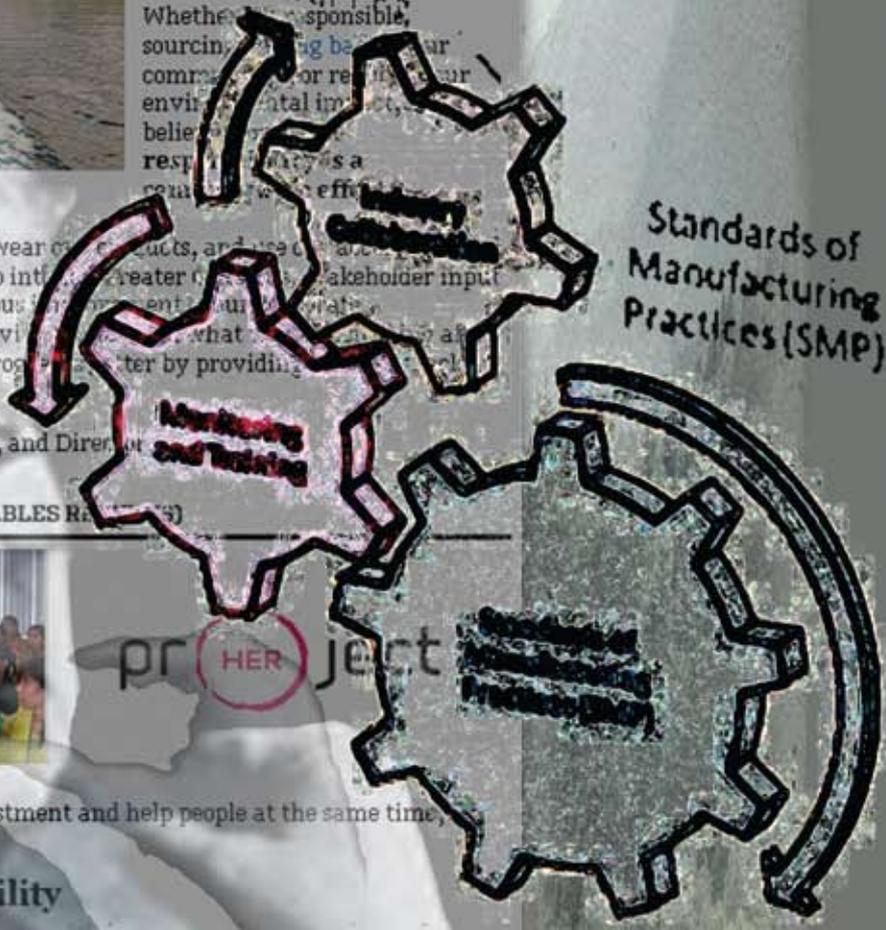


If you could triple your investment and help people at the same time, would you do it?

Social Responsibility



Standards of
Manufacturing
Practices (SMP)



INSIDE OUT
OUR PASSIONS,
PRODUCTS
& PEOPLE

Monitoring
and Training

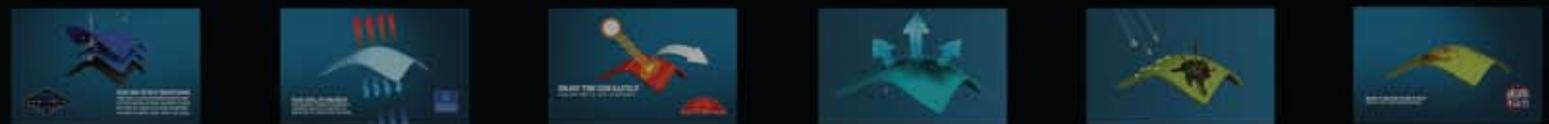


Figure 48. A collage from sustainable responsible actions of Columbia Sportswear Company (Seppälä 2009 according to Columbia Sportswear Company 2009.)

Columbia Sportswear Company

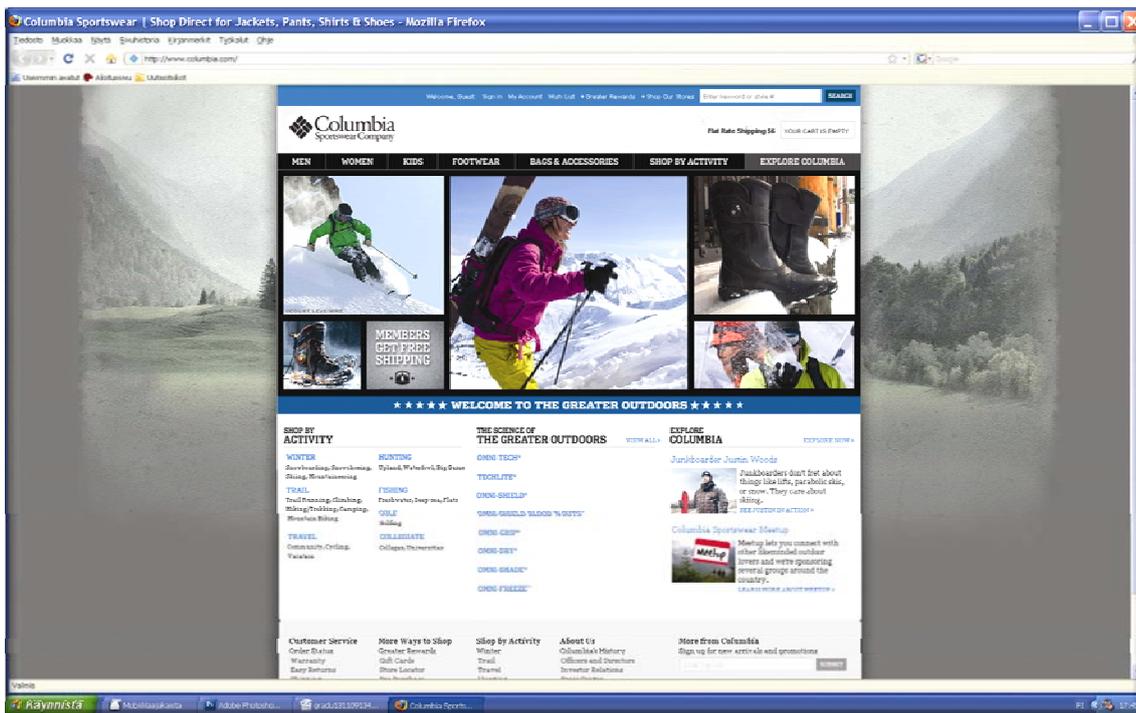


Figure 49. Columbia Sportswear Company home page at 13.11.2009 (Columbia Sportswear Company 2009.)

Columbia Sportswear Company was founded in 1938 in the United States (Fig. 49.). Their product line includes outerwear, sportswear, rugged footwear and accessories. From Columbia's web pages in December, 2007 I found the company's statement about human assistance, conservationism, the environment, the arts and education. Columbia Sportswear recognizes its responsibility. It is a member of the Conservation Alliance, a group of the specialty outdoor business that is source of grass roots conservation and environmental funding. Their employees can volunteer for causes like SMART (Start Making a Reader Today), the American Hiking Society, and the American Heart Association.

Columbia Sportswear has a Rethreads program, which provides garments that are returned or slightly flawed, but still wearable, to people in need throughout the United States. I could not find information on how big a percentage of returned garments they are giving away, but I think the idea is useful. Companies get back faulty garments which are of second quality, have color problems or do not fulfill their test requirements, but are still totally wearable. Making those garments has required raw material, energy resources, labor, dyes and finishes. It would be environmentally unsound to bury them in a landfill when they can be given to people in need.

Office, factory and warehouse

According to the Columbia Sportswear web page (Fig. 48.) their offices recycle tens of thousands of pounds of paper and cardboard, as well as glass, plastic, aluminum and tin. They avoid excessive packaging and use recycled paper and soy-based inks. They educate their employees to principles of reducing, reusing and recycling and of environmental awareness by encouraging them to car-pool and use mass transit. They offer their employees subsidized bus passes, guarantee parking for car-poolers and offer bike racks and showers in the office for cyclists.

Design and materials

According to Columbia Sportswear Company's web pages they did not have any kind of program for sustainable design or ecological material choices. Although they took environmental issues concerning offices and packaging into consideration they did not mention sustainable design values in actual products. They have their own brand for waterproof technologies Omni-Tech™ and Omni-Dry™ for wicking fabrics. Their other material trademarks are also their own.¹⁷⁰

In my new survey in July 2009 I could find no any new information about ecological design or materials, but they mention their UV protection fabric. According to them, Omni-Shade™ clothing is recommended by the Skin Cancer Foundation, because of its effective protection against the sun's harmful effects on the skin. Their own web page also says that they are now one of the world's largest providers of breathable waterproof outdoor products and known as a product innovator.¹⁷¹

¹⁷⁰ Columbia Sportswear Company 2007.

¹⁷¹ Columbia Sportswear Company 2009.



Products

Activities

Materials

Fjällräven Classic



Welcome.

To a world of functional equipment for more - and more comfortable - journeys in the outdoors.



Fjällräven

History

Quality Time

Quality Time home

Code of Conduct

Product policy

Environmental policy

Animal policy



Quality time is a long time!



Environmental Policy

Nature is where Quality Time is found!

We believe that nature is fantastic and we hope to inspire more people to get out there. The reason is simple, this is where we like to spend our spare time and we are also among a small group of lucky people who also spend much of our working hours there. That is why we are doing our best to integrate environmental care in every aspect of our business. This includes developing durable materials, but also choosing materials that have less of an impact on the environment, such as eco-cotton or bamboo.



Animal Policy

Quality time goes for Animals too

At Fjällräven, we have always done our best to ensure that animals are treated fairly. We were among the first companies to require labeling the animal products carried on our stores in order to prevent byproducts. As soon as that treatment became known, we were one of the few who pulled all of our animal products from the market. We have also requested that fur from our products after having developed our own Arctic Fur, a substitute for that shares many of the positive characteristics of fur.

Recent Swedish TV stories and German newspaper articles have raised a concern about the way of "live plucking" and "live harvesting" of down and feathers from geese and ducks. We were also featured in one of the stories. First of all, we like to make live plucking. It is simply not accepted by us. Through our history we have only collected and purchased down from the food industry, not plucked from live geese. In China there are several live types of down from birds that have become food and in China more expensive than down from birds that have become food. Our producers have followed our instructions and guarantee that our products only contain down from geese that had become food, not plucked from live birds. Our own records on spot confirm this.



Down from

However, we believe consumers should be aware of our animal products after contacting questions from Swedish Television about the use of down plucked from live birds. This is our judgment from fur skin. However, once again it is confirmed that our products do not contain this type of down. In order to ensure that our policies are followed and that our products only contain the type of down we accept we are now investigating our down producers to only use down regular to get an even better control. We are also taking an active role in ensuring that no live plucked down should exist. The first step has been to take part in an international down meeting in China in March 2009. Using creators, we also are working to ensure that no live plucked down exists. We are also working to ensure that no live plucked down exists.



Click here and find more about Fjällräven's...



Materials & Function

Figure 50. A collage from sustainable responsible actions of Fjällräven (Seppälä 2009 according to Fjällräven 2009)

Fjällräven

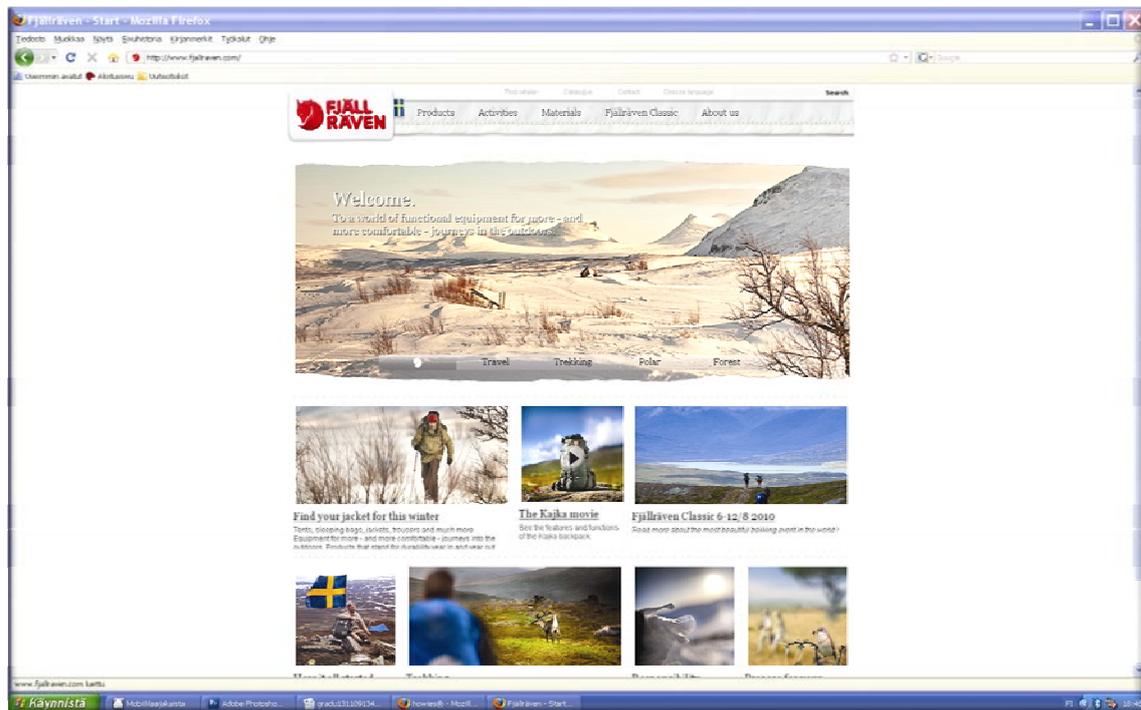


Figure 51. *Fjällräven home page at 13.11.2009 (Fjällräven 2009.)*

The Swedish company called Fjällräven manufactures clothes and hardware for outdoors, trekking and traveling (Fig. 51.). Fjällräven was founded in 1950 and moved its production to Asia soon after the start of production. According to their web pages they were using approximately 40 suppliers. In 2007, according to a web search of December, 2007 they were bringing environmental aspects into their corporate responsibility statement. Concern about the environment is increasing globally and Fjällräven expects its suppliers to act responsibly in this respect. Their suppliers must comply with all applicable environmental laws and regulations which the supplier's country has legislated. According to Fjällräven their chemical restrictions do not allow the use of solvents or other hazardous chemicals in the production of their garments. All their suppliers must sign the Fjällräven Guideline Commitment and confirm that prohibited chemical substances are not used in production. In 2007, they did not mention anything about sustainable design, ecological renewable materials or life cycle assessment. They have registered their own trademark for a waterproof fabric called Hydratic®, but they were also using Polartec® fleeces and Cordura® from Dupont.¹⁷²

A year and half later in July, 2009 in my second survey, I found that Fjällräven had a sustainable section in their web pages and had launched a new motto, Quality Time (Fig. 50.).

¹⁷² Fjällräven 2007.

That means several different things. By that motto they want to say that they want their users to have quality time in nature and they want their employees in the factories to work in safe, fair, strictly legal and humane conditions. Quality Time is also their motto when they develop more environmentally friendly fabrics and when they work with their partners to improve the environment and support biodiversity. Fjällräven also lets their customers know that they are a growing company and must therefore assume possibility for their actions in their home town and other parts of the world.¹⁷³

Products and design

Fjällräven states in their Quality Time Policy that their products should be durable, functional and safe to use, because durable products, which are handed down through generations, are among the most environmentally friendly ones. They have two classics, the Greenland jacket of 1968 and the Kånken backpack of 1978, which prove that their products withstand the test of time. They ensure that they think about functionality and durability in all of their products and product parts like buttons and zippers. Their staff and professional test groups test them outdoors to see if they need to change anything and encourage inspiration for new products.¹⁷⁴

Materials

The company is proud not to develop or choose materials because of trend or design. The meaning remains somewhat unclear to me. I find that statement is strange, because the material should fit the design. Or they may just mean the design of the material, because functionality comes first. Choosing the right combination of materials for the activity intended is a good principle, likewise rigorous testing of the material before choosing it. According to them, environmental thinking requires durable material, but also material choices which have less of an impact on the environment. Durable, long lasting material allows a garment to be reused, which saves nature from new material production, chemicals and the burden of extra transporting.

In addition to the environment, animals should also be affected only minimally. They concentrate their down purchase to only one supplier to ensure that the down is not live picked. Down can be either from dead birds used for the food industry or live picked. They would like to stop the practice of live picked down and to that end, took part in an international down meeting in China in March, 2009.

¹⁷³ Fjällräven 2009.

¹⁷⁴ Fjällräven 2009.

They have adopted Teijin's Eco Circle system, which means that they collect their Eco Circle labeled products and recycle them into new ones. They ensure that energy consumption is reduced by 84 % and CO₂ emission is cut by 77 % compared to new polyester fabric production from petroleum. Contrary to the Arc'Teryx information, Fjällräven ensures that the quality of recycled products remains as good as before but it remains unclear if transportation of recycled items is counted in their statistics. I address this problem in more detail in the chapter on Teijin's closed loop polyester recycling.¹⁷⁵

Office, factory and warehouse

Fjällräven has a Code of Conduct, which all of their suppliers need to follow to guarantee their employees fair and safe work conditions without discrimination. It includes legal requirements, a ban on child labor, and safety as well as factory and housing conditions. They have a quality assurance department and they use the inspection services of SGS. SGS makes sure that Fjällräven's Code of Conduct is followed. They believe that a close and long-lasting relationship also encourages their suppliers to follow their Code of Conduct and ensures quality. Their product developers often visit their factories and discuss working conditions and more environmentally friendly production.¹⁷⁶

¹⁷⁵ Fjällräven 2009.

¹⁷⁶ Fjällräven 2009.

• Haglöfs environmental program has three focus areas: Materials, transports and packaging.



HAGLÖFS

OUTSTANDING
OUTDOOR EQUIPMENT



Haglöfs business is closely linked to the environment. Our commitment to protecting it is deep and genuine. Our environmental work is purposeful, with concrete and strong actions, both immediate and long-term.

"WE ARE RUNNING
OUT OF PLANET"



HAGLÖFS' AND SUSTAINABILITY

Nobody today can ignore the threats to the environment. Nobody can turn a blind eye to the consequences of climate change and pollution that we are seeing around us, or those predicted by scientists and experts.

The examples are many and thought-provoking. The percentage of carbon dioxide in the air is the highest in 250,000 years. Over the past fifty years, biological diversity has decreased more than ever before. Borneo's orangutans are threatened with extinction and between 50 to 100% of the world's existing polar bears risk to become extinct in 100 years. Glaciers are shrinking. One of the largest is in the Himalayas and it is estimated that two-thirds of it will have melted by the year 2050. Hence, 300 million Chinese will be unable to irrigate their fields.

Rivers in Africa are drying up. A billion people in the world today live with a constant shortage of clean water. Ground acidification and nitrogen fallout lead to forest decline in Europe. Chemical pollutants are spreading worldwide.

No corner of our planet is unaffected. Among the Inuit in Greenland they have measured one of the highest contents of harmful substances from electronic waste in the world.

Haglöfs business is closely linked to the environment. Our commitment to protecting it is deep and genuine. Our environmental work is purposeful, with concrete and strong actions, both immediate and long-term.

• Haglöfs environmental program has three focus areas: Materials, transports and packaging.

• All of Haglöfs material suppliers are carefully selected and have signed a Terms of Agreement, containing meticulously specified environmental requirements to be used in the products.

• Haglöfs seeks to cooperate with suppliers who have their own environmental policy.

• Haglöfs works to reduce its own carbon footprint by using a large amount of renewable energy in its production and operations. From the production of raw materials, through the use of electricity, heat and steam, to the production and distribution of products.

• We analyse all discharges generated by our operations, including transport of personnel and material. The aim is to reduce carbon dioxide emissions, and we are drafting a list of concrete actions with measurable goals.

• Haglöfs has begun a gradual transition to using only recycled materials in packaging and hang tags.

• The offices in Kalnhäll and Avesta recycle all office waste. Similar processes are being introduced at the other Haglöfs offices around the world.

• Haglöfs long-term product development objective is to use material with naturally integrated functional properties.

• We are increasing the use of recycled, environmentally-friendly materials in our products. As of next year, several Haglöfs products will be made from 100% recycled material.

• Through Haglöfs membership in EOG (Association for Conservation), the company is working to protect and preserve the world's natural resources via sponsorship of concrete, local projects.

Director of Sustainability at Haglöfs is
Lennart Sjöström
lennart.sjostrom@haglofs.se
Phone: +46 8 33 91 371
Phone: +46 468 7 000



IT IS TIME FOR ACTION

Figure 52. A collage from sustainable responsible actions of Haglöfs (Seppälä 2009 according to Haglöfs 2009.)

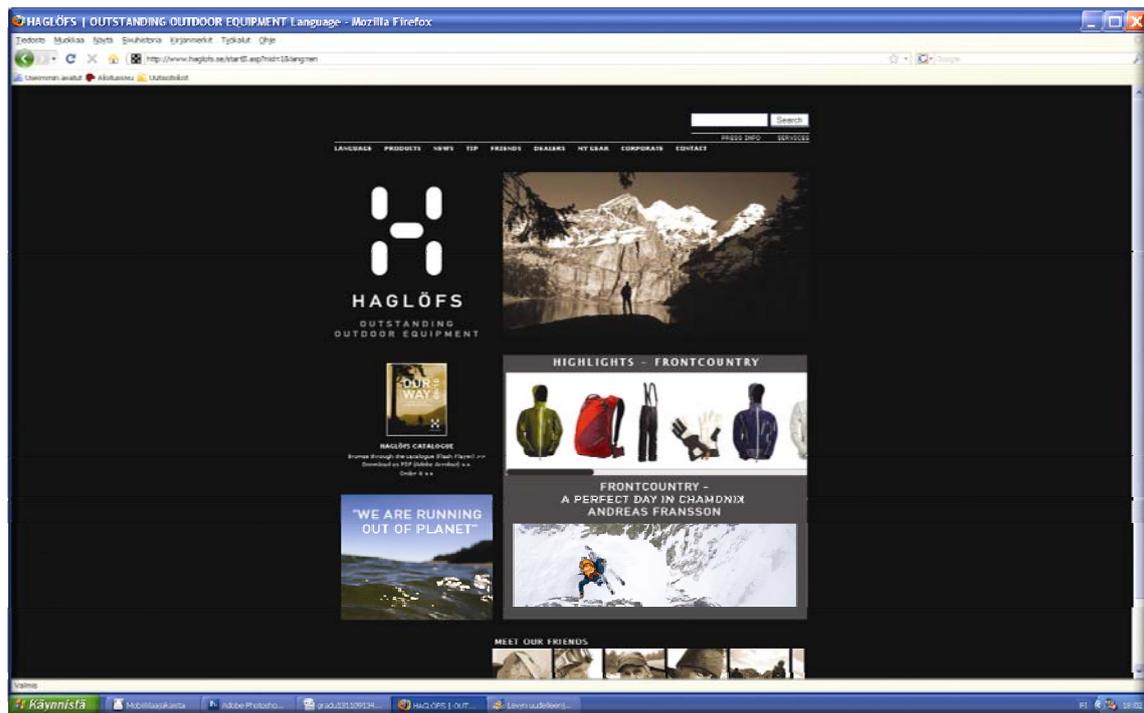


Figure 53. *Haglöfs home page at 13.11.2009 (Haglöfs 2009.)*

Haglöfs story begins in 1914, when Victor Haglöf sold his first backpacks. Now they produce over a million products each year. Haglöfs manufactures backpacks, sleeping bags, clothing and shoes (Fig. 53.). Haglöfs production takes place in Estonia, Poland, Romania, China and Vietnam. According to their Annual Report, 2006, they strive to make all their working conditions healthy, safe and ensure that all production should be done with the least possible impact on the environment. In December, 2007 they already had a responsibility policy on their web page. According to this policy they support the idea that all economic development is long-term and integrated with social and environmentally friendly aspects. They require their suppliers to sign their policy before starting co-operation¹⁷⁷ In December, 2007 they mentioned nothing about their product's environmental aspects. They use Dryskin® fabric in their base layers and Flexible® and Windstopper® in their soft shells. For waterproof items they buy Gore-tex® from W. L. Gore.

In July, 2009 they had more on environmental aspects strongly worded on their web page (Fig. 52.). They note that Haglöfs business is closely linked to the environment and their commitment to protecting the environment is deep and genuine. They feel that their environmental work is purposeful and they take concrete and strong actions immediately and long-term if the environment is in danger. Haglöfs actually overviews the seriousness of

¹⁷⁷ Haglöfs 2007.

climate change on their web page. They have put it very clearly: “*We need to take care of our surroundings because we are running out of planet.*” Climate change concerns more and more people and they state on their web page that we should all think seriously how to deal with it. They admit their limited ability to influence things, because they are a small company in the global perspective. They convince their customers that they are willing to do their part, because their personnel, owners and above all their customers have an express interest in Haglöf’s impact on the natural world.

I do not doubt their sincerity about changing things, but I assume they have also realized environmental indifference on their part may cost the loss of customers and profit. They have no single frame approach. Instead, they have taken a number of steps to do their part for the environment. They have appointed a person to be their Director of Sustainability and they have divided Haglöf’s environmental efforts and environmental program into three focus areas: materials, transports and packaging. They sponsor concrete local projects by their membership of the Association for Conservation, which is a way for them to protect and preserve the world’s natural resources.

Products and design

Haglöfs’ opinion is that their equipment and clothing should be of the highest quality and not be influenced by the whims of fashion so their customers can use it longer without frequent replacement.

Materials

High quality and eco-friendly manufacturing have the smallest environmental footprint possible. In general, Haglöfs is keen to solve environmental problems within textile production. Haglöfs has joined a voluntary initiative bluesign®, because they believe that bluesign® can persuade fabric manufacturers, for example, to improve their eco-performance. According to their web page, some 15 per cent of all Haglöfs products had some form of eco-profile in 2009 and they are increasing the use of recycled, environmentally friendly materials in their products. In 2010, they plan to make several products from 100% recycled material.

Haglöfs selects their material suppliers carefully and requires them to sign their Terms of Agreement, which contains meticulously specified instructions about chemicals that are not allowed in the products. Haglöfs also wants their material suppliers to have their own environmental policy. I think one interesting fact about their sustainable approach in long

term product development is their will to use material with naturally integrated functional properties.

Down is important insulation material and the outdoor industry uses a lot of it. Haglöfs gets down from two suppliers and strictly forbids plucking from living birds. Haglöfs has assurances from both of its suppliers, by requiring the signing of their Code of Conduct, that they are not using down plucked from living birds. Haglöfs is rear outdoor company by telling their garment producer's name. Very many companies do not tell their producers. Tseng Ltd buys down from a French company called Pyrenex and from the Ukraine and it is processed by Tsubasa in Japan. They give their assurance that they do not purchase down from China or Hungary. According to their web page the French company Pyrenex is both ISO 14001 and ISO 9002 certified and has made documented environmental investments.¹⁷⁸

Production, office, factory, warehouse, logistics and travel

Haglöfs does not own the factories where its products are made, but they ensure that they inspect their manufacturers carefully. They demand that everybody who is working with their products should be treated with respect. Their Code of Conduct includes directions about a healthy and safe work environment and animal protection. The Code of Conduct includes labor legislation which forbids using child labor. Selecting a new manufacturer is a long process, because they want to ensure quality levels and environmental considerations. They do not choose new suppliers without visiting the plant and checking the supplier's environmental policies.

Haglöfs wants to select the most eco-friendly logistics alternative possible and wants their transport companies to care about the environment. They try to avoid air freight in favor of rail transport. Employees in the offices in Kallhäll and Avesta recycle all their office waste and they have recommended it to their other offices. Haglöfs analyses all discharges generated by their operations, including transport of personnel and material. They draft a list of concrete actions with measurable goals to reduce carbon dioxide emissions. They are planning to change entirely to recycled materials in packaging and hang tags. Employees are encouraged to choose their transport based on ecological awareness¹⁷⁹

¹⁷⁸ Haglöfs 2009.

¹⁷⁹ Haglöfs 2009.

Houdini Sportswear

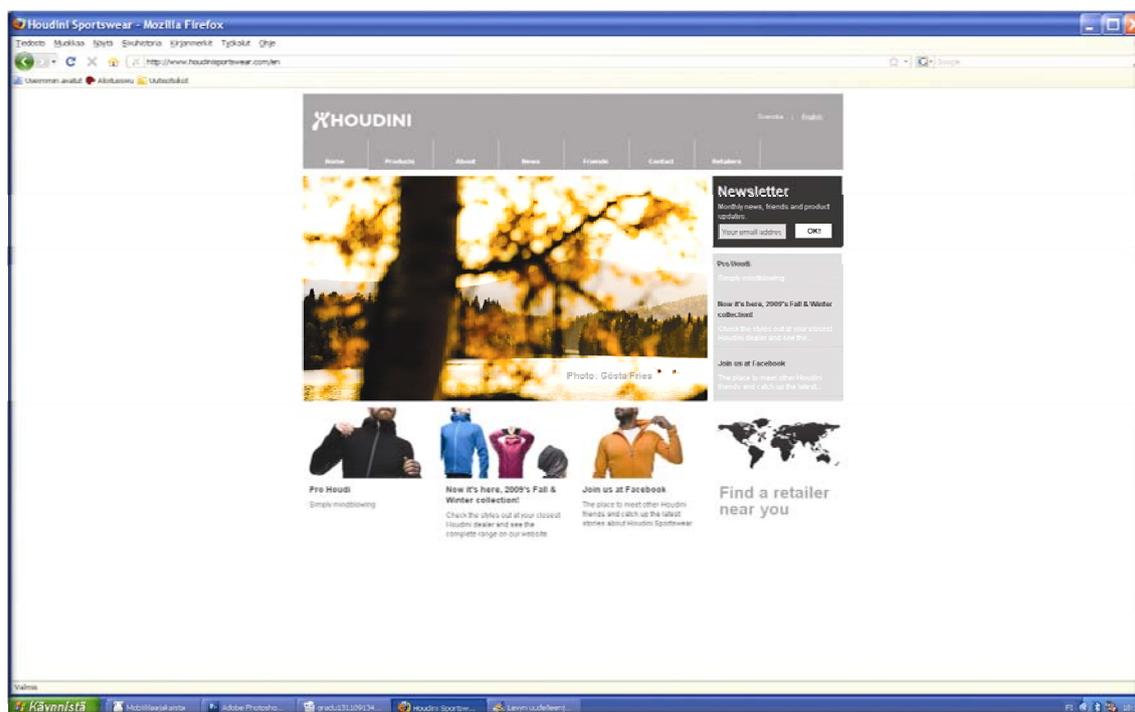


Figure 55. *Houdini home page at 13.11.2009 (Houdini Sportswear 2009.)*

Houdini Sportswear is a Swedish outdoor company (Fig. 55.). Sports and the outdoors are a common passion for employees at Houdini. Their focus on product development is connected to the time they have spent outside. They began developing garments in accordance with their own specific needs and desires and those of their friends. Their friends spread the word about their clothes and the Houdini trademark was born.

I found environmental commitment on their webpage in December, 2007. They promise to minimize their environmental impact and evolve into a sustainable business. Transitions to sustainable alternatives in materials, production, and transports are to be made as soon as they are technologically feasible without compromising product performance or quality. By moving to recycled polyester in their base layers, they say they will cut CO₂ emissions and energy consumption dramatically.¹⁸⁰ Teijin's recycling closed-loop recycling system will enable customers to recycle worn out Houdini garments, reducing environmental impact even further. Old Houdini clothes should never be thrown away. A customer can send them to Houdini or leave them in the recycle-box at their retailers and they will be recycled into brand new, environmentally friendly sportswear. According to their webpage, Houdini Sportswear was the first European partner of the Japanese company, Teijin's recycling system Eco

¹⁸⁰ Houdini Sportswear 2007.

Circle™. Teijin is a global leader in the recycling of polyester and has developed a process that reduces CO₂ emissions by 77 % and energy consumption by 84%.¹⁸¹ Polyester garments can be recycled an endless number of times without any reduction in quality. Each worn polyester garment returned to the firm for recycling is an environmental gain. If a customer is unsure if the product can be recycled, they can send or return the garment to Houdini and the company will recycle or dispose of it in an environmentally sound way. In July, 2009 they launched a slogan slogan: Houdini - not just saving your butt - saving the world (Fig. 54.).¹⁸²

Design

Their goal is that their customers feel sufficiently well dressed. Houdini products are built for uncompromising performance, versatility and reliability. They have adapted their design philosophy from the Bauhaus movement: form follows function and less is more. They only accept details that bring performance to a higher level and seams that are absolutely necessary in their products. They provide garments with freedom of movement for rock climbing and their clothing has a superior warmth-to-weight ratio and takes minimal packing space. They have made sure that the sleeves of their garments are long enough for cycling and their shorts have built-in moisture transport. Houdini offers a complete layering system from underwear and base layers to insulating layers, outerwear and accessories and they call it Core Comfort. They have the highest demands, not only in performance, but also in style and therefore each product has been designed and tested by the team and friends of Houdini.

Materials

According to Houdini's web page Houdini was the first in the world to develop performance underwear in fleece. During a climbing trip in New Zealand at the end of the 1980s, they discovered the revolutionary material of that era, stretch fleece, which was superior to everything they had ever used in terms of comfort, warmth-to-weight ratio and drying time. Now they mostly use recyclable polyester such as Teijin's Eco Circle® Softshell and Polartec's Premium Polartec® Power Stretch®.¹⁸³

¹⁸¹ The figures were provided for the Japanese domestic market, but serve as an indication of the environmental benefits.

¹⁸² Houdini Sportswear 2009.

¹⁸³ Houdini Sportswear 2009.

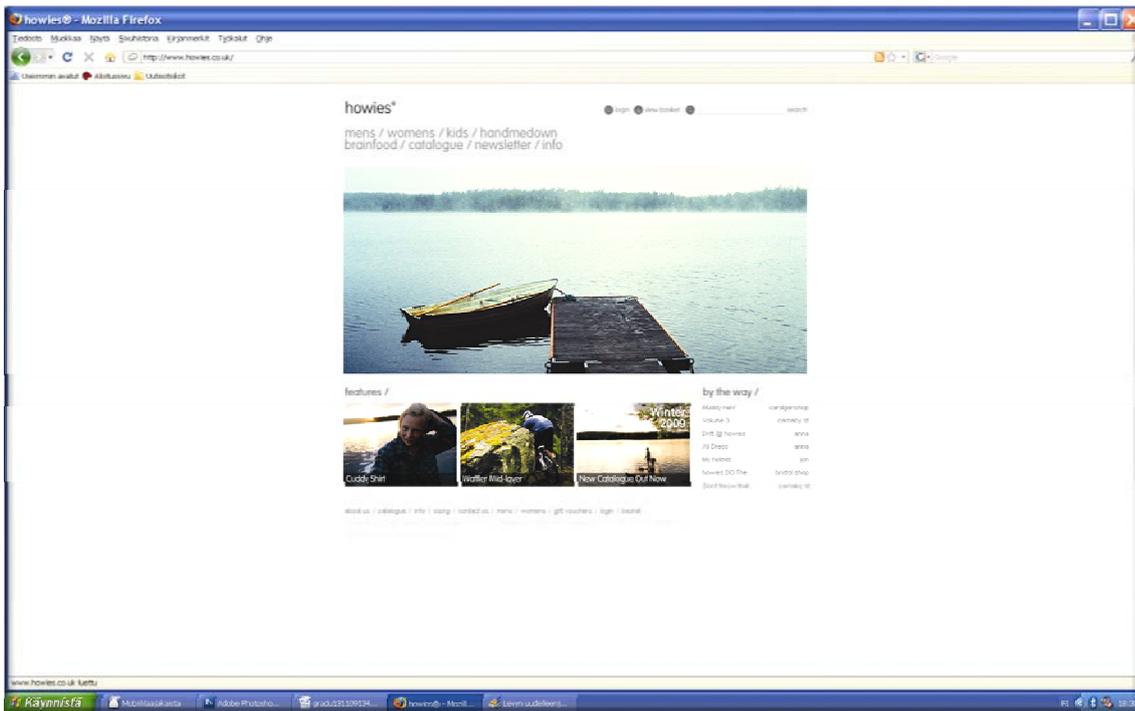


Figure 57. *howies home page at 13.11.2009 (howies Ltd. 2009.)*

howies Ltd. was founded in 1995 by Dave Heatt and his wife, Clare (Fig. 57.). They started on their living room floor by designing four t-shirts and launched them in a biking magazine. Later they started to do functional outdoor clothing and found that production in the UK was not working out. Production quality was poor and the factories were closing down. They moved their production to Hong Kong. Dave Heatt regretted that they could not evaluate their factories like they wanted. In 2007, they made a co-operation deal with Timberland to handle their financial situation and to get an environmental audit for their products.¹⁸⁴

“Why are we in business? For us it is not as simple to make a profit. Like any company we require a profit to stay in business. But it is not the reason we are in business. The thing that has not changed from day one is the desire to make people think about the world we live in. This is, and always will be, why we are in business.”¹⁸⁵

I included howies in my study for a slightly different reason than the others. They do not exactly specialize in mountaineering gear manufacturing, but they have been a forerunner of sustainable design in outdoor clothing. The other thing which makes them different from most of the companies is that they are very open about their company and its history on their web

¹⁸⁴ howies Ltd. 2009.

¹⁸⁵ howies Ltd. 2009.

pages. It is very rare that company wants to show less than a shiny surface, although transparency is becoming more important in the outdoor clothing business because of growing demand for credibility. howies' owner and founder, Dave Hieatt, describes their financial problems and the stumbling blocks on their history web pages. howies has won numerous international design awards and it was listed in 2005 as one of the UK's top ethical brands.

David Hieatt felt in 2005 that the time was right to introduce sustainable responsible design (SRD) practice to the industry, and believed customers would respond to companies using sustainable practices. He cited two main reasons for this. The first is that among consumers, industry and government awareness of environmental issues and corporate social responsibility has increased. Secondly sustainable responsible design can no longer be viewed as a fringe issue from a modern business perspective. David Hieatt thought businesses are not designing for tomorrow and he felt the next decade would see a huge growth in SRD. He also felt other companies needed to see sustainable, responsible designing deriving benefits so they would take some action. Many people told him that howies could not build a business around SRD. It has taken howies 10 years to reach its current position. In 2005, Hieatt believed that the company had developed a good business model for sustainable, responsible design and was in a position to show others how to do the same.¹⁸⁶

In July 2009, howies realized that everything they do has some downsides and there is no perfect clothing company (Fig. 56.). They want to be honest with themselves and with their customers about this, and they want to find ways to reduce the impact that the downsides produce. Where they are now is not where they want to be. But that will always be the case. They think that as a company, they should always focus on what they could do better and on finding lower impact ways of dyeing their cotton t-shirts. They cannot prove their products are fair trade because they are not convinced there is a trusted set of guidelines to follow. So they will make no such claim until they can be sure.¹⁸⁷

“We live in times of limited resources but unlimited desire to consume them. The answer though is real simple: to consume less as a consumer; to make a better designed product as a manufacturer. Going forward we will have to take more responsibility for our consumption. The manufacturer and the consumer will both have to share that responsibility.”¹⁸⁸

¹⁸⁶ O'Connor & Cox 2005, 74.

¹⁸⁷ howies Ltd. 2009.

¹⁸⁸ howies Ltd. 2009.

They openly consider sustainability issues on their web pages. Those matters are not easy to solve. How can the air quality in a factory be measured? Which chemicals are good? Which chemicals are bad? How much overtime is allowed? How much holiday time should be given? But they want to find the answers and to ensure their factories follow their common sense guidelines running their business in a low as impact way as they can. They also request feedback from their customers for ideas on how they can do it better. They pledge to give 1% of their turnover or 10% of pre-tax profits to grass-root environmental and social projects. They consider thus a small amount but hope that when their company grows they can give more. Their strategy is to grow slowly to get stronger as a company. They are also trying to get the balance right between work and play. They say on their web pages that whenever a real nice day comes along, it would be a shame to waste it and they go outdoors.

Design

A higher quality product will invariably last longer. It will continue to serve as it was designed to for a longer time before it finally needs replacing. Thus, over its lifespan it will have consumed less valuable resources than an inferior product that would have been replaced many times. howies understands that a product that keeps working for longer uses fewer resources in the long run. The key ingredients to this are quality and good design. They want also to pay attention to small details such as stitches, buttons and zippers, which are normally the weakest points.

Materials

howies uses organic Ventile in their jacket. It is tightly woven cotton which means it expands when it meets water. It is selected from the finest, long staple fibers only found in the top 2% of the world's cotton crop. The dense weave expands when it comes into contact with water. When it expands it prevents water getting through. It acts like a performance fabric when it comes in contact with water, yet it has all the feel of natural cotton.¹⁸⁹ They also use organic tweed that has been created by Ardalanish Tweed Weavers on the Isle of Mull. The sheep are allowed to roam freely on the island. The wool is colored with woad. Woad is herb which produces an indigo color and it is natural alternative to the chemicals dyes. howies' jeans are made by mixing organic hemp with organic cotton. Hemp is twice as strong as cotton and it does not require conventional pesticides or herbicides like cotton does. Hemp does not deplete the nutrients in the soil and it uses less water than cotton.¹⁹⁰

¹⁸⁹ howies Ltd. 2009.

¹⁹⁰ howies Ltd. 2009.

Whatever latitude I'm walking at and whatever I experience there, it's the same conclusion in the end: the knowledge of the incredible variety of nature that needs to be protected. Each day outdoors makes me realise that I have to preserve this nature. This affects all of us and happens every day. At Jack Wolfskin we will bend over backwards to ensure that our products are as safe and attractive as possible and to keep making the good dream a reality.

- WHAT'S THE PROJECT REBOUND?
- PROJECT DEVELOPMENT
 - BACK TO UGANDA 2009
 - ONE YEAR "PROJECT REBOUND"
 - PROJECT DEVELOPMENT 2009
 - LANDMAP
- IMAGES & FILMS
 - FILMS & INTERVIEWS
 - TRAILER: THE LONGEST WAR
 - BILDERGALERIE
 - LATEST NEWS
 - UGANDA - TRAVEL DIARY

PROJECT REBOUND THE PROJECT



ONE YEAR "PROJECT REBOUND"

Wolfskin first appealed for help for Rebound, the relief project which had just launched. Rebound is a comprehensive re-socialising project for the living conditions of former child soldiers in Uganda.

On 4 July 2009, the third international youth camp run by the

"Ice Climate Education" project in Húsavík in Iceland came to an end.

BACK TO UGANDA
A journey full of hope. "House of Peace" has been opened. Dormitories have been built. Schools equipped with the necessary materials and administrators.
» CHECK OUT NOW

On the other hand, our respect goes to the unbelievable beauty and variety of nature. Nationally and internationally valid environmental regulations must be observed and it is necessary to minimise potentially negative influences. For this reason, we contractually obligate our business associates to recognise and implement the standards we have set. Only in this way can there be trust-based cooperation which not only satisfies our demands but also the expectations of our customers in purchasing a Jack Wolfskin product.

ENGAGEMENTS



ECOLOGICAL ENGAGEMENT
» MORE

+ Ventilation
Unterarmreflexion

SOCIAL ENGAGEMENT
» MORE

Hüftgürtel
Taschen setzen höher an



trekking:

Figure 58. A collage from sustainable responsible actions of Jack Wolfskin (Seppälä 2009 according to Jack Wolfskin 2009.)

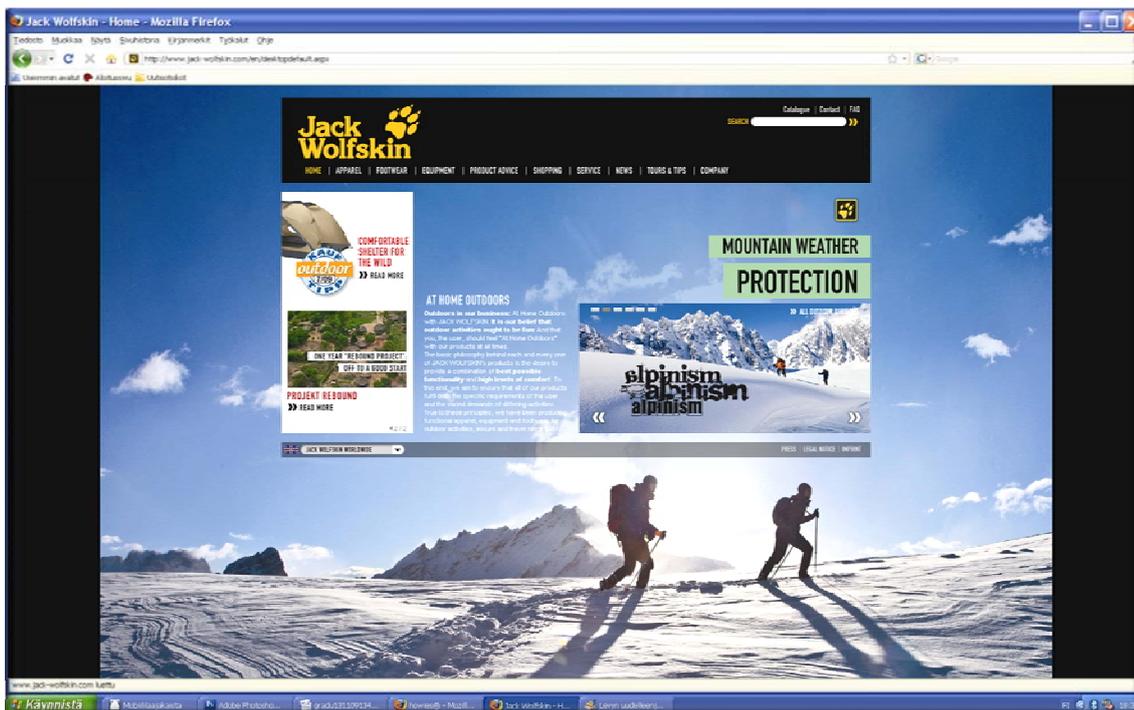


Figure 59. Jack Wolfskin home page at 13.11.2009 (Jack Wolfskin 2009.)

The German company Jack Wolfskin was founded in 1981 (Fig. 59.). It produces functional apparel, equipment and footwear for outdoor activities. I could not find any information regarding their environmental policies on their web page. They buy their wind and waterproof fabrics from W. L. Gore and Cordura® from Dupont.¹⁹¹

In July, 2009 I still could not find any statement about environmental design or values, instead I found an example of their commitment to social responsibility. For one year they have been involved in the Rebound Project to improve the living conditions of former child soldiers in Uganda. They have been helping to secure the basic financing for the Project. Their mission is to publicize the project as well as the local situation and to appeal to as many people as possible for donations.

Design

In design and manufacturing aspects they are as ambitious as other companies. According to their web page they desire to provide best the possible functionality and high levels of comfort in all of their products.¹⁹²

¹⁹¹ Jack Wolfskin 2007.

¹⁹² Jack Wolfskin 2009.

The Jack Wolfskin has been also involved organizing and sponsoring the Ice Climate Education (the I.C.E. youth camp) project lead by the expedition leader Arved Fuchs, who wants to make today's younger generation aware of the importance of protecting our climate. The youth camp was held in summer, 2009 in Iceland because climatic change and its effects are happening faster and in a more dramatic way in the Arctic than anywhere else in the world. Fuchs was accompanied by scientists, who held talks with the participants on the problems of global warming as well as took readings, recorded and analyzed the results and talked about them. The aim of this youth camp is that the participants will return after the camp to their schools and encourage further projects on the topics of global warming.¹⁹⁵

Things are happening fast. After I have finished my study in December 2009 Jack Wolfskin has added ecological and social engagements on their web pages in January 2010. Unfortunately I could not include it in my study, but I included some of it to the collage (Fig. 58.)

¹⁹⁵ Jack Wolfskin 2009.

RECYCLE & SAVE



Parce que la raison d'exister de Millet est de vous offrir le meilleur de 50 ans à l'histoire de la montagne et des grandes expéditions, nous avons notre devoir de s'engager pour la préservation de notre terrain de jeu privilégié. La montagne, symbole de liberté et pureté, où se mêlent parfois joies et déceptions, mais qui est toujours le lieu de notre passion.

Plus qu'un engagement, le développement durable est aujourd'hui un véritable défi pour Millet qui s'exprime à travers différentes actions.

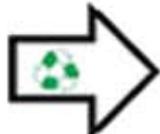
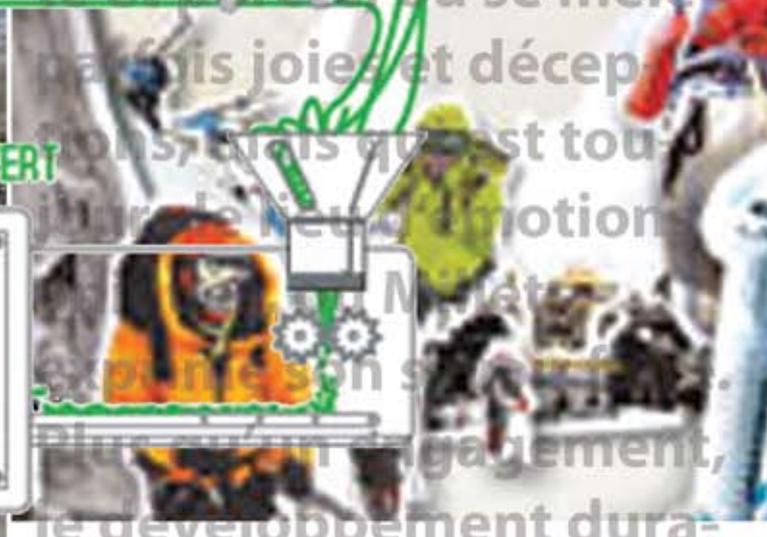
① CLIMB

MILLET ENVIRONNEMENTAL CONTRIBUTION

② COLLECT

③ CONVERT

④ RECYCLE INTO PRODUCTS USED BY MILLET



RECYCLE & SAVE

Figure 60. A collage from sustainable responsible actions of Millet (Seppälä 2009 according to Millet 2009).

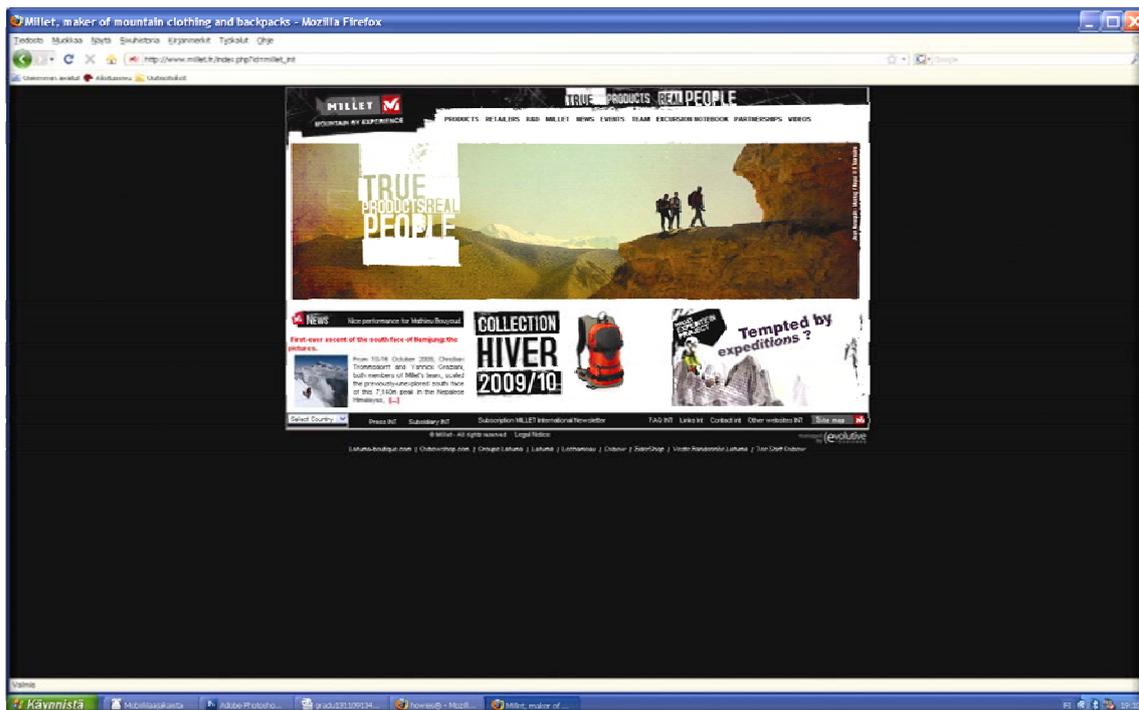


Figure 61. Millet home page at 13.11.2009 (Millet 2009.)

The French Mr. and Mrs. Millet, parents of the Millet brothers, founded a backpack company in 1921 (Fig. 61).. Millet has a long history with world famous alpinists and it is one of the most famous brands in the climbing industry. In 2005, they launched The “Save & Recycle” program to recycle climbing ropes. In 2006, they extended the “Save & Recycle” program across Europe. They co-operated with Polartec® Fabric Company. The Polartec made a clear environmental statement on Millet’s web page about their means of exerting influence. They said they cannot solve world hunger, but they can decrease their ecological footprint.¹⁹⁴ Millet makes a clear statement about environmental issues through climbing rope recycling and the Polartec statement. They also use Gore-tex®, Woolmark® and Power Dry® fabrics.

In July, 2009 Millet had two different approaches to the environment (Fig. 60.). Their project to collect ropes continues and they are taking part in cleaning up mountains. They also use Cocona® fabrics.¹⁹⁵ They have the Recycle-Save Concept to recycle climbing ropes. The concept of the operation aims at simplicity. Customers can save money by handing in the ropes while doing a good deed for the environment. They take ropes into their recycling center and re-use them to limit the use of fossil raw materials. Millet assumes responsibility

¹⁹⁴ Millet 2007.

¹⁹⁵ Millet 2009.

for the end-of-life of ropes sold on the market. Millet's aim is to alleviate three current problems, namely exhaustion of fossil and non-renewable reserves, waste production & associated pollution and energy shortage.¹⁹⁶ Millet gives two reasons for asking their customers to give their ropes for recycling, to avoid burdening landfills and to save on raw materials. Millet also makes an appeal to their customers that they should recycle their ropes because they are climbers and close to nature. If their customers take part in a collective environmental campaign, they can save 20 Euros. According to Millet's web pages they have recycled 150 000 meters rope from year 2005 to 2008.

¹⁹⁶ Millet 2009.



Sustainability

“Never stop dreaming and attempting what is considered impossible...”

Our Sustainability Journey

Sustainability and conservation form the core of The North Face pledge to advance the well-being of the planet, its citizens, and those who enjoy exploring it. May 2008

As we continue to develop authentic and technically innovative products for the outdoor athlete, The North Face will also aggressively and responsibly continue to integrate environmental, economic, philanthropic, and social initiatives into our business practices.

The North Face embraces this responsibility and opportunity to contribute as an industry leader to solutions and creation of best practices.

Sustainability

Sustainability and conservation form the core of The North Face pledge to advance the well-being of the planet and its citizens - especially those who enjoy exploring our world!



Figure 62. A collage from sustainable responsible actions of The North Face (Seppälä 2009 according to The North Face 2009.)

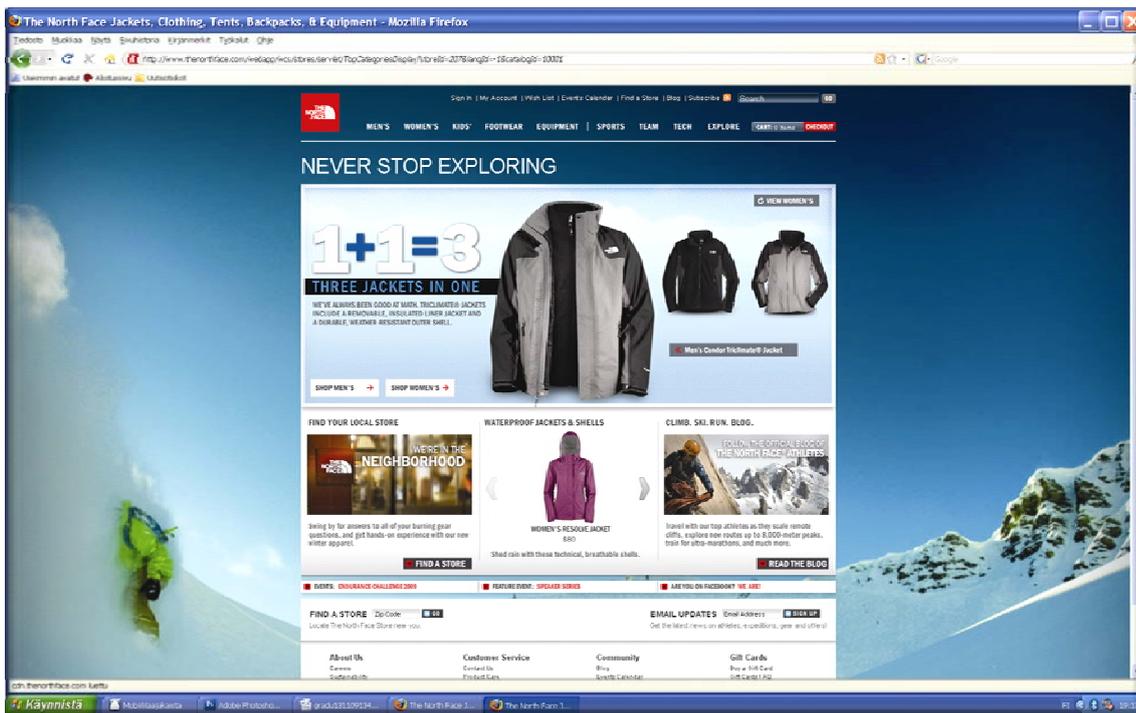


Figure 63. *The North Face home page at 13.11.2009 (The North Face 2009.)*

The North Face is named for the most unforgiving face of a mountain (Fig. 63.). In 1966 two hiking enthusiasts resolved to follow their passions and founded a small mountaineering retail store in San Francisco's North Beach neighborhood. The little shop became known as a retailer of high-performance climbing and backpacking equipment. Two years later The North Face moved and began designing and manufacturing its own brand of technical mountaineering apparel and equipment. At the beginning of the 21st century, The North Face supplies an extensive line of performance apparel, equipment, and footwear.¹⁹⁷ The North Face is a brand of VF Corporation. VF Corporation's predecessor was founded in 1899 in the United States. In 2000 VF Corporation acquired The North Face. According to VF Corporations Code of Business Conduct they follow environmental laws, being sensitive to environmental health and safety:

*“The Company shall maintain a safe and healthy work environment and manage its business in ways that are sensitive to the environment. The Company will comply with all environmental, health and safety laws and will internally establish and comply with its own strict standards established on behalf of the well-being of our associates and the communities in which the Company operates.”*¹⁹⁸

¹⁹⁷ The North Face 2009.

¹⁹⁸ The North Face 2007.

In December 2007, I could not find anything on The North Face's own web page mentioning about environmental policies. They use HyVent™ fabric for waterproof items and Polartec® for fleeces.¹⁹⁹

In July, 2009 I found a sustainability statement in the web pages of The North Face (Fig. 62.). Their Sustainability Journey was written in May, 2008. Sustainability and conservation form the core of The North Face pledge to advance the well-being of the planet, its citizens, and those who enjoy exploring it. The North Face promises to aggressively and responsibly continue to integrate environmental, economic, philanthropic, and social initiatives into their business practices. The North Face embraces this responsibility and opportunity to contribute as an industry leader to solutions and the creation of best practices. They have identified four focal areas. Those four areas include reducing their greenhouse gas emissions, designing innovative sustainable products, eliminating waste in their operations and inspiring employees, customers and communities.

Design

The North Face promises to deliver innovative gear for snow sports. They offer a garment feature guide to their customers on their web page. I think the idea is good. They can prove to pro-amateurs that their clothing is the best possible alternative and the less informed consumer can use their list to check what qualities there should be.

Materials

They developed a new aluminium anodizing process that eliminates the need for toxic chemicals such as nitric acid and phosphoric acid. By eliminating these two environmental pollutants, tent pole production becomes cleaner and more sustainable.²⁰⁰

Among clothing materials The North Face mentions carbon from bamboo²⁰¹ and Polartec® Eco-Engineering™ Recycled Technology.

The new Denali Jacket, Men's El Cap Peak 1/4 Zip, and Women's El Cap Temple 1/4 Zip are constructed with recycled material as part of The North Face® commitment to

¹⁹⁹ The North Face 2007.

²⁰⁰ The North Face 2009.

²⁰¹ The North Face 2009.

sustainability. The Denali solid fleece fabric is derived from 87 percent recycled content, and the Denali heather fleece fabric will be constructed from 65 percent recycled material. The specified El Caps are derived from 100 percent recycled content. These materials are made from 90 percent post-industrial waste and 10 percent post-consumer waste, stopping the flow of materials to the landfill and creating valuable materials from waste.²⁰²

Office, factory and warehouse

The North Face's office in Canada is LEED-CI certified office. New light sensors reduce electricity consumption by 54%. Smart choices for fixtures reduce water usage by 41% versus standard building codes. Filtered water stations take advantage of existing water infrastructure effectively eliminating the use of single serving water bottles.

The North Face's North American operations energy use is offset with 100% wind energy through the Bonneville Environmental Foundation's Green-e Climate Certified Renewable Energy Credits. They off-set their employee activities through the Conservation Fund's Go-Zero forest restoration program which encourages land conservation and increased health of the forests. In a partnership with the EPA Climate Leaders Program, they are committed to benchmarking and reducing their overall carbon footprint.

Other environmental charitable purposes

The North Face was a founding partner of the Conservation Alliance 20 years ago to ensure the protection and conservation of threatened wild habitat and recreation values. The North Face employees have worked with local organizations to clean up beaches and community parks, restore native wetlands, plant trees, and remove invasive species.²⁰³

²⁰² The North Face 2009.

²⁰³ The North Face 2009.



We acknowledge that the wild world we love best is disappearing.



Environmentalism: The Footprint Chronicles®

- The Footprint Chronicles
- Freedom to Roam
- What We Do
 - Grants Program
 - World Trout Initiative
 - 1% for the Planet
 - Common Threads
 - Garment Recycling
 - Conservacion Patagonica
 - Enviro Internship
 - Conservation Alliance
 - FSC Certification
 - LEED Certified
 - Organic Exchange
 - Our Buildings
 - The Firehouse
 - Tools Conference
 - Solar Panels
 - Voice Your Choice

products and working with processes that harm to the environment. We evaluate raw in innovative technologies, rigorously polic use a portion of our sales to support group a real difference. We acknowledge that the

That is why those of us who work here share a strong commitment to protecting undomesticated lands and waters. We believe in using business to inspire solutions to the environmental crisis.



1% For The Planet®
An alliance of businesses committed to

Common Threads
Garment Recycling

[Find out more](#)

LEED Certified

When we needed to expand our Patagonia distribution center in Reno, Nevada we looked to the Leadership in Energy and Environmental Design, or LEED, certification standards as our guide to building a green building that balances environmental responsibility, resource efficiency and the comfort and well-being of our workforce.

[Learn more & watch the video](#)



Figure 64. A collage from sustainable responsible actions of Patagonia (Seppälä 2009 according to Patagonia 2009.)

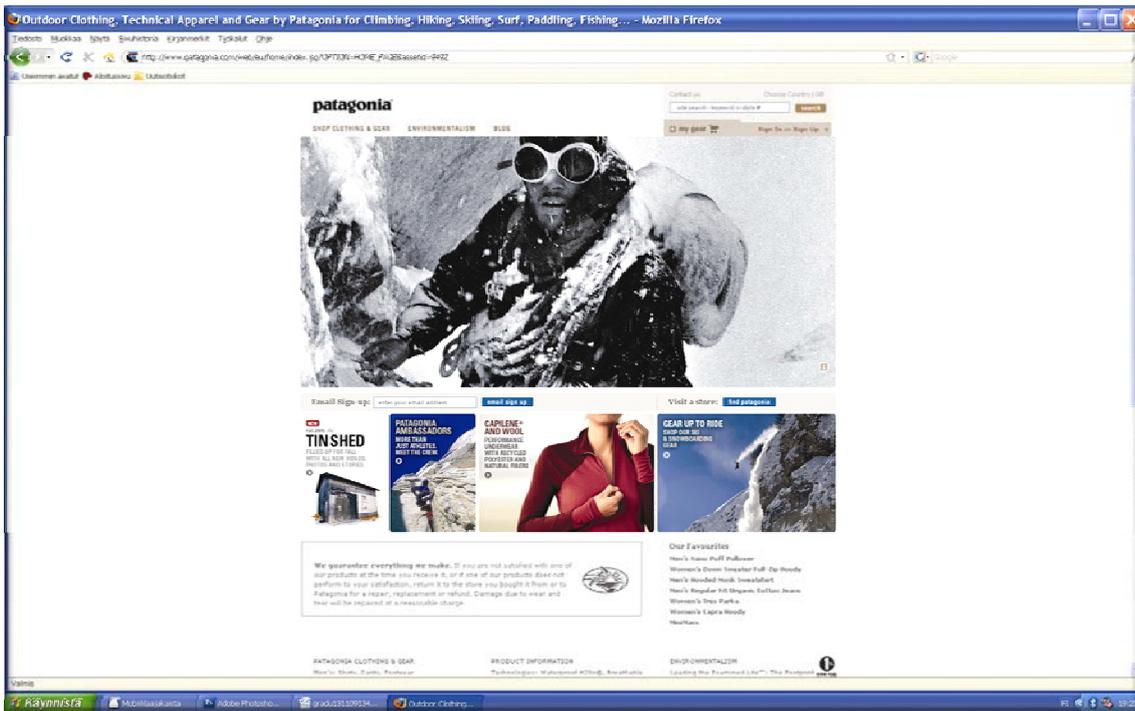


Figure 65. Patagonia home page at 13.11.2009 (Patagonia 2009.)

My opinion is that Patagonia earned its Eco Brand of the Year award at the Volvo EcoDesign Forum in ISPO in 2008. It is definitely a leader and forerunner of eco design and sustainable, responsible manufacturing in outdoor garment industry (Fig. 65.). They also give the impression that they are sincere. It is obvious that the staff of Patagonia shares a strong commitment to protecting the environment and is outdoor sport enthusiasts. They think that business can be used to inspire solutions to the environmental crisis. “There is no business to be done on a dead planet.”

Their aim is to build products and to work so that the smallest amount of harm is caused to the environment. They evaluate raw materials, invest in innovative technologies, police their waste and use a portion of sales to support groups working to make a real difference. The founder of Patagonia, Yvon Chouinard, is an environmentalist who has been involved in many environmental projects and has been guiding Patagonia in a more sustainable direction. Yvon Chouinard’s interest in nature began from his hobbies climbing and surfing. At first he and his friend made and developed hardware for climbing. By 1970, Chouinard Equipment had become the largest supplier of climbing hardware in the USA Later in the 1970’s they changed their company’s name to Patagonia and started to sell clothes (Fig. 64.).²⁰⁴

²⁰⁴ Patagonia 2009.

Design

They say that during the past thirty years they have made many mistakes, but they have never lost their way for very long. For Patagonia, quality is not only how well a product performs and holds up, but also how it is made. They realize that their efforts are far from perfect, but they are trying and making headway. I think that they changed the outdoor clothing industry permanently when their director of environmental analysis, Jill Dumain, delivered her lecture at the EcoDesign Conference in 2008. The extraordinary thing with Patagonia is that they want to share their knowledge about environmental issues. I think that other companies have possibly followed their model.

They also guarantee everything they make. If a customer is not satisfied with their product, he can return it for repair, replacement or refund. They also repair damage at a reasonable charge if it occurs while the customer is actively using their product. They have also engaged in functional product development, for example body-mapped and variable-knit Capilene® base layers whose construction wicks moisture more efficiently and allows more freedom of movement for the wearer. In spring 2005, they introduced new seaming methods for both soft and hard shells that reduce bulk, improve drape and, more significantly, improve performance in wet weather.

Materials

At a time when the entire mountaineering community relied on traditional, moisture-absorbing layers of cotton, wool, and down, Patagonia looked elsewhere for inspiration and protection. They adapted the synthetic pile sweater from fishermen, which would make an ideal mountain layer because it would insulate well without absorbing moisture, but it pilled easily, was difficult to get thoroughly clean and melted in commercial dryers. They worked hard from the start to improve their quality and overcome the problems.

It does no good to wear a quick-drying insulation layer over cotton underwear which absorbs body moisture and then freezes. In 1980, they introduced insulating long underwear made of polypropylene, a synthetic fiber that has a very low specific gravity and absorbs no water. According to Patagonia's web pages they became the first company to present the concept of layering to the outdoor community through articles in their catalog. This approach involves wearing an inner layer against the skin for moisture transport, a middle layer of pile for insulation, and then an outer shell layer for wind and moisture protection.²⁰⁵

²⁰⁵ Patagonia 2009.

Patagonia is currently using environmentally friendlier fibers such as recycled polyester, organic cotton, hemp, chlorine-free wool and Tencel® lyocell. When they commissioned an environmental impact assessment of four major fibers from an independent research company, they expected to learn that oil-based polyester and nylon were big energy consumers and sources of pollution. They were partly right, but cotton was worse. They learned that 25% of all toxic pesticides used in agriculture were used in the cultivation of cotton and the resulting pollution of soil and water was terrible. The evidence of damage to the health of fieldworkers is considerable, but it is difficult to prove. Farmers have grown cotton organically without pesticides for thousands of years. Only after World War II did the chemicals originally developed as nerve gases become available for commercial use to eliminate the need for weeding fields by hand.

Patagonia made a decision in 1994 to change their cotton sportswear to 100% organic by 1996, but they found that there simply was not enough organic cotton commercially available. They had to work hard to get enough farmers, ginners and spinners involved to make Patagonia's very small quantities in an organic way. They wanted to have a certificate that all the fiber could be traced back to the bale. Now they are using more hemp in some products in combination with recycled polyester.

Early environmental ethics

Patagonia was still a fairly small company in the 1970's when they started to devote time and money to the increasingly apparent environmental crisis. They saw creeping pollution and deforestation, the slow, then not so slow, disappearance of fish and wildlife and they began to study global warming, the cutting and burning of tropical forests, the rapid loss of groundwater and topsoil, acid rain, the ruin of rivers and creeks from silting-over dams.²⁰⁶

In 1986, they committed to donate 10% of their profits each year to these groups. They have kept to that commitment. In 1988, they initiated the first national environmental campaign on behalf of an alternative master plan to deurbanize the Yosemite Valley. Each year since, they have undertaken a major education campaign on an environmental issue. They took an early position against globalization of trade when it meant compromise of environmental and labor standards. Every eighteen months they have been holding a "Tools for Activists" conference to teach marketing and publicity skills to some of the environmental groups with whom they are working.

²⁰⁶ Patagonia 2009.

Office, manufacturing facilities

Patagonia acknowledges its own role as a corporate polluter. To rectify this they have been using recycled-content paper for their catalogs since the mid-eighties. Their distribution center in Reno, opened in 1996, achieved a 60% reduction in energy use through solar-tracking skylights and radiant heating. They used recycled content for everything from rebar to carpet, to the partitions between urinals and retrofitted lighting systems in existing stores, and build-outs for new stores became increasingly environmentally friendly. They assessed the dyes they used and eliminated colors from the line that required the use of toxic metals and sulfides. Most importantly, since the early nineties, they have made environmental responsibility a key element of everyone's job.

The Footprint Chronicles®

Patagonia has developed their own life cycle assessment program called The Footprint Chronicles. It examines Patagonia's life and habits as a company. The idea is to increase transparency of their own actions and affect other companies to follow their sustainable practices. They show a video series on their web pages about social and environmental responsibility and product quality. They encourage their customers to join the conversation by commenting directly on their The Cleanest Line® blog. They have also begun to measure water consumption as well as energy consumption, waste, carbon emissions and distance traveled for chronicled products. They have "Product Footprint" data on their webpage for a large portion of their products to help the purchasing decision.

Common Threads Garment Recycling

In 2005, Patagonia launched their Common Threads Garment Recycling Program. Customers could return their worn out Capilene® Performance Baselayers for recycling. They have since been able to expand the list of recyclable garments to include worn out Patagonia® fleece, Polartec® fleece clothing from any brand, Patagonia cotton T-shirts and some additional polyester and nylon-6 products that come with a Common Threads tag. The Common Threads Garment Recycling Program works with Teijin EcoCircle™ system. Polyester garments are recycled by Teijin, but I could not find what they do with cotton garments.²⁰⁷

²⁰⁷ Patagonia 2009.

OUR VALUES, VISION AND MISSION

The Peak Performance brand name is based on our values... the best... for all activities within the company, from garment design...

Our Values

Every single activity - whether on a grand scale or as...

to live up to these values;

- * For real
- * Long lasting
- * We believe in and trust people
- * Team Peak Performance
- * Building for the future
- * Renewal

Our Vision

To create a world class global brand name, founded on the spirit of the passion and our values"

Our Mission

"To develop, manufacture and sell products that are world class in terms of quality, function and design under the Peak Performance brand name, based on and guided by our values and our vision."

ENVIRONMENT, ETHICS AND CSR

There is an old Peak Performance motto that reads, "Man and nature in perfect harmony". And although this may be an unachievable goal, it does say something about our ambitions and our relationship with our delicate environment.

In concrete terms, what we do here at Peak Performance to minimize our environmental impact as much as possible is documented in an extensive environmental program that covers everything from materials requirements and packaging to transport and proactively eco-friendly measures. Fundamentally, our vision is otherwise to work with long-term quality - products that last, both physically and ethically.

Harmony is another key word when it comes to the people in Peak Performance's world. And by that, we mean colleagues, customers, retailers, suppliers and everyone else with whom we deal. We want everyone who comes into contact with us - whether on a large scale or a small one - to feel that it is a meeting of equals, that we show them the respect we would like to receive in return. Our Corporate Social Responsibility program and our Code of Conduct are also carefully documented, in cooperation with our owners, IC Companys.

Read more at IC Companys



Figure 66. A collage from sustainable responsible actions of Peak Performance (Seppälä 2009 according to PeakPerformance2009.)

Peak Performance

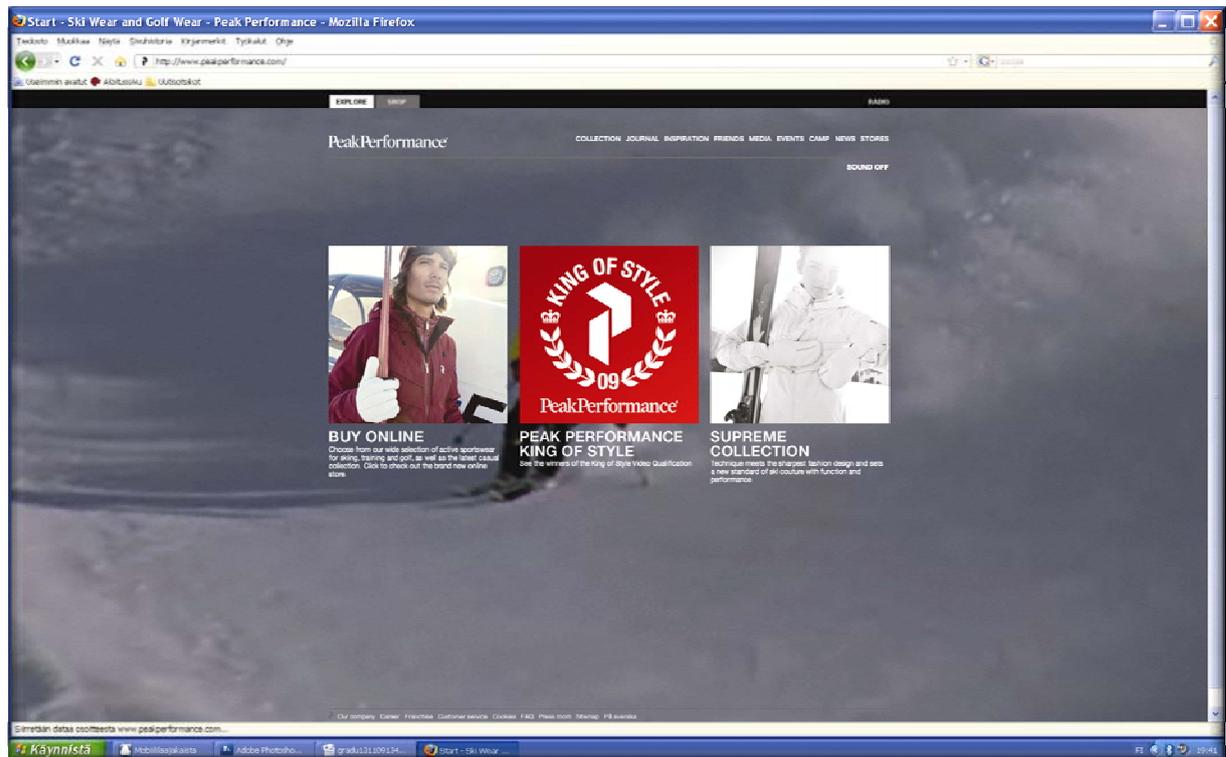


Figure 67. Peak Performance home page at 13.11.2009 (Peak Performance 2009.)

Peak Performance was established in 1986 in Åre, Sweden (Fig. 67.). At this time it is owned by a Danish company called IC Companys. IC Companys mention environmental responsibility on their web page:

“Since August 2007 is a member of UN Global Compact which is an international common frame of reference for all CSR activities encompassing more than 2400 companies worldwide. UN Global Compact is a voluntary and flexible initiative founded by Kofi Annan in order to involve private companies in tackling some of the major social and environmental challenges. The core is ten principles based on internationally agreed conventions and treaties on human rights, labor standards, environmental protection and anti-corruption. Our membership is a commitment to continuous improvement and shows our desire to participate in solving the unintended consequences of globalization.”²⁰⁸

Peak Performance purchases its fabrics from different fabric suppliers and states this for the customers on their web pages. I find it handy from the customer’s point of view that they explain material features, because the new technology and materials are confusing. They say

²⁰⁸ IC Companys 2007.

there are so large a number of new technical expressions and brand names that is hard to navigate for even those involved in the business.

In July, 2009 I found an environment, ethics and a CSR page on their web pages (Fig. 66.). Unfortunately they do not really explain any concrete actions of the company. Their old motto is “Man and nature in perfect harmony”. They admit this is unachievable goal, but think that it says something about their ambitions and their relationship with the environment.

Peak Performance tries to minimize their environmental impact as much as possible. They have documented this in their extensive environmental program that covers everything from materials requirements and packaging to transport and proactively eco-friendly measures, but they do not mention any concrete action such as ecostandard, ecolabel, recycled or otherwise green materials. It would have been interesting, if they attached their environmental program on their web pages.

Regarding social sustainability, they mention they want to make all their stakeholders, such as colleagues, customers, retailers, suppliers and everyone else with whom they deal, feel that it is a meeting of equals. They want to show them the respect that they would like to receive in return. Their Corporate Social Responsibility Program and their Code of Conduct are also carefully documented, in cooperation with their owners.²⁰⁹

The Peak Performance’s mission is to develop, manufacture, and sell products that are world class in terms of quality, function, and design based on and guided by their values and their vision.²¹⁰ They want to design and sell long-term quality products that last, both physically and across changes in fashions and trends. They want to fill a lot of requirements, both rational and emotional and produce products that they, as passionate sports and nature lovers, wanted to use themselves. The Peak Performance has active and casual lines and they are also fundamentally interlinked.²¹¹

²⁰⁹ Peak Performance 2009.

²¹⁰ Peak Performance 2009.

²¹¹ Peak Performance 2009.



THE SCIENCE OF MEASURING AND REDUCING OUR ENVIRONMENTAL FOOTPRINT

SEEK ADVENTURE



SIERRA DESIGNS OFFSETS 100% OF OUR ENERGY USAGE. Click here to calculate your carbon footprint.



TO US, IT'S ABOUT LIVING AND WORKING IN WAYS THAT DON'T JEOPARDIZE THE FUTURE OF OUR SOCIAL, ECONOMIC AND NATURAL RESOURCES.



THE SIERRA DESIGNS GREEN EFFECT MISSION IS TO PRACTICE AND PROMOTE A HARMONIOUS RELATIONSHIP BETWEEN OUR BUSINESS WORLD AND THE OUTDOOR WORLD.

MEN'S APPAREL // SEE ALL

WOMEN'S APPAREL // SEE ALL

THE SCIENCE OF MEASURING AND REDUCING OUR ENVIRONMENTAL FOOTPRINT

SLEEPING BAGS // SEE ALL



Figure 68. A collage from sustainable responsible actions of Sierra Designs (Seppälä 2009 according to Sierra Designs 2009.)

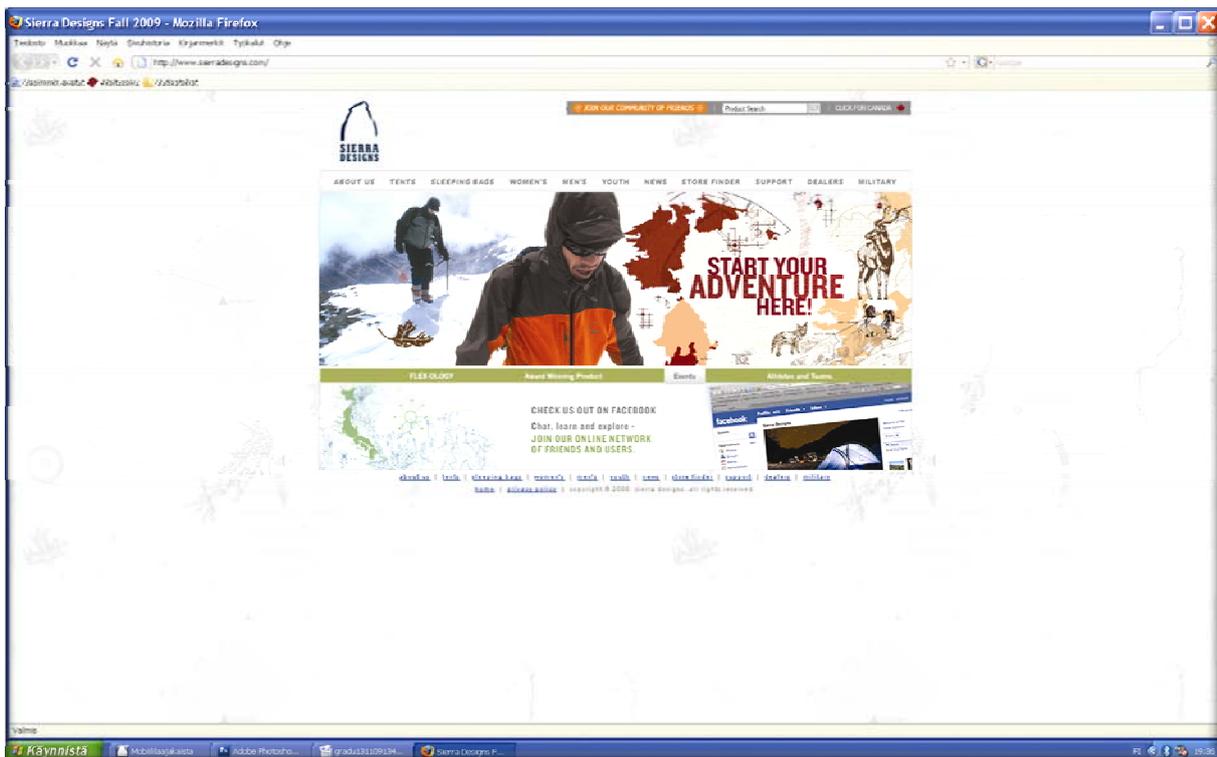


Figure 69. *Sierra Designs home page at 13.11.2009 (Sierra Designs 2009.)*

In 1965, George Marks and Bob Swanson started Sierra Designs (Fig. 69.). They wanted to be pioneers in the outdoor equipment and apparel business and spread the joy of the wilderness experience. Today they want to follow ethical, sustainable and competitive business practices that reflect their commitment to the environment and community.²¹² They have considered all the aspects of sustainability. They are dedicated to their employees, retailers, consumers, and environment. They intend to design quality, reliable products that perform well and are innovative.

Sierra Designs also wants to protect the environment, from which they make their living, and remain ethical and responsible in all their business endeavors (Fig. 68.). They also want to support specialty, outdoor retail and maintain their market leadership while enabling a creative culture where employees can thrive. They wish to inspire people to get outside and have fun. Sierra Designs was one of the few companies with a clear environmental statement on their web pages in December, 2007. It had already launched its Green Effect Program illustrating their commitment to the environment and the community with the use of sustainable practices, partnerships and product innovations.

²¹² Sierra Designs 2009.

“To us, it's about living and working in ways that do not jeopardize the future of our social, economic and natural resources. With our Green Effect Program, we illustrate our commitment towards environmental stewardship and its role in helping to significantly limit the amount of negative environmental impact.”²¹³

The Sierra Designs Green Effect mission is to practice and promote a harmonious relationship between the business world and the outdoor world. They have five steps to follow to be more sustainable. They want to build environmentally friendly products whenever possible and support environmental programs and organizations. They aim to develop programs that promote sustainable outdoor recreation. They want to enhance community involvement through their employees, representatives, retailers and consumers and reduce their costs and waste.

Design

They want to design good products, because they have acknowledged that better products make the outdoor experience so much more enjoyable. Their vision is to have at least one Sierra Designs product in the hands of every outdoor enthusiast. They want their customers to live out their personal dreams of being outdoors. They aim to make reliable and innovative products where form follows function. Their mission is to use their experience, mountain lifestyle and sustainability knowledge to create authentic products that fuel passion for the outdoor journey, because they think that their business is a way to deliver experiences.

Materials

Sierra Designs have established an in-house "Green Team" to consider how to make their actions more environmentally friendly. Additionally, the company has implemented environmentally friendly materials in everything from its 70 percent green tradeshow booth to its sustainable products incorporating such materials as Cocona™, recycled Polyester, Bemis® PVC-free tape and solvent free membranes. They use Polartec recycled fleece made from recycled pop and water bottles in their thermal layer garments and recycled polyester in their down jacket.²¹⁴

²¹³ Sierra Designs 2007.

²¹⁴ Sierra Designs 2009.

They also use solvent-free membranes in their hard shell jackets and pants as well as Bemis PVC-free tape. That way they protect air and water from polyvinyl chloride. They have named two of their garments Eco gear. 2.5-layer Drizone™ Green fabric is composed of solvent-free membranes to reduce the amount of Volatile Organic Compounds in the water the supply.

In addition to its green materials, products, and service practices, Sierra Designs has also cooperated with several organizations dedicated to protecting human health and the environment. Such partners include: 3 Phases Energy Services, Green Steps, Outdoor Retailer, Green-e, Conservation Alliance, American Mountain Guides Association, Cocona and Polartec.

Office, factory and warehouse

All of their office and warehouse power comes from wind energy certificates. They use recycled paper for printing and minimize packaging. Employees of Sierra Designs recycle glass, paper, plastic, magazines in their offices. Moreover, 70% of their tradeshow booth is built with green materials. Most recently, Sierra Designs joined with Native Energy in the fight against climate change and both reduced CO₂ emissions and helped build sustainable economies for communities in need.

Sierra Designs wants to offer its employees a creative work environment that fosters personal growth and individuality. According to them their products are made in technically good factories under good working conditions. In every factory they regularly hold unannounced, independent, third party audits to ensure compliance with ethical labor standards. Their program for monitoring the manufacturing of their domestically produced products has been cited for excellence by the U.S. Department of Labor.²¹⁷

²¹⁷ Sierra Designs 2009.



Figure 70. *The study of end-users. (Photograph by Seppälä 2008.)*

6.2 The study of end-users

Functional concepts and high-tech solutions are often developed for other fields and later translated into the world of leisure and sport. Many innovations are made for military, space, research or exploring purposes and later adapted for the mass markets. New innovations in other fields like technology or medicine can also be brought to garments. New developments allow the textile industry broaden its own market.²¹⁶ There is increasing interest in sports. This grows with an increasing interest in well-being and good health, increased leisure time and growth of indoor and outdoor sports facilities. Performance fabrics and functional clothing have more and more demands when active group of consumers grows.²¹⁷

The consumer segmentation

The terms consumer segment and target audience have been used in a general way to mean that certain people are more likely than others to adopt an innovation at a particular time. For marketers a target audience is that slice of the population most likely to be attracted to the tangible and intangible attributes of a product, company image, or service. Traditionally a target audience would be defined as consumer segments²¹⁸, which attempts to discriminate between types of consumers based on a set of variables. The variables can be demographic such as age, sex, income and ethnicity, psychographic such as lifestyles, personality and preferences or combination. Apparel executives have used consumer segmentation to position styles, products, brands and retail formats in the market place, but that kind of segmentation is getting more difficult to make, because today's consumer may use a different criteria each time they make a decision. The consumer segmentation can be also used for designing purposes.²¹⁹

²¹⁶ Buirski 2005, 19-20.

²¹⁷ Shishoo 2005, 1

²¹⁸ Brannon 2005, 69.

²¹⁹ Brannon 2005, 284-285.

Lifestyles of Health and Sustainability (LOHAS)

The outdoor goods sector continues to be strong despite the global recession. Well-being is increasingly valued, and for many people, an active outdoor life is an effective, simple and economical way to feel good during these times. The development in outdoor and sportswear has been rapid and sporting goods are being customized to small target groups. Consumers wish to find garments specially designed for their needs. The group of informed consumers is also increasing. Consumers do not want wellbeing only for themselves. They also care about sustainability and environmental and social values. Lifestyle of Health and Sustainability (LOHAS) is a market segment focused on health and fitness, the environment, personal development, sustainable living, and social justice. These consumers are the future of progressive social, environmental and economic change. LOHAS consumers, sometimes referred to as lohasians, are interested in living in a sustainable and healthy way concerning all life sectors. Outdoor enthusiasts are often LOHAS consumers, because they are interested in nature and the environment generally through their outdoor hobby.

Lead users

Lead user is a term coined by Eric von Hippel in 1986. His definition for lead user is:

“Lead users face needs that will be general in a marketplace, but they face them months or years before the bulk of that marketplace encounters them. Lead users are positioned to benefit significantly by obtaining a solution to those needs. In other words: Lead users are users of a product that currently experience needs still unknown to the public and who also benefit greatly if they obtain a solution to these needs.”

Lead users have two specific types of characteristics:

“They are at the leading edge of important market trends and they have a strong incentive to find solutions for the novel needs they encounter at the leading edge.”

Due to these characteristics, research by numerous scholars has repeatedly shown that lead users often have to develop the new products and services they need for themselves and they become user-innovators. Products that lead users develop often become the basis for important commercial products when lead user needs become mainstream needs. Lead users are important for innovation management. The creativeness and innovativeness of lead users

makes them an unusually rich source of new product ideas and concepts for companies striving for innovative offerings. The so-called "Lead User Method" is a technique that facilitates the identification and integration of lead users. It was found that projects based on this method resulted in eight times higher projected sales than projects with traditional methods. The Internet allows user-to-user interaction at lower transaction cost, a development that adds a special momentum to the import of the lead user phenomenon.²²⁰

Studies of end-user needs may be conducted by garment manufacturers or independent research groups. New designs and functional developments have to be tested in action before real production for customers. Test people are often enthusiastic about their own sport or about the professionals who will use the clothes later on, as it is in the work garment situation. Test users use the equipment and garments in real situations and give feedback about the products. This feedback will be used when final products are developed. Interest in detail depends on final use.

Most times garment developers, such as product managers and designers, are interested in the general functionality of the garment including protection, comfort and durability. It is important to know if the garment adequately protects wrists, elbows, knees, ankles and the head. Depending on end-use, waterproof, windproof, ventilation and breathability aspects are important. Fit and movement availability are also important factors when making highly functional work and sport garments. Practical, working details, like zippers, buttons, cords and pockets make the final impression of a functional product. Complicated washing and care directions may also be a reason not to buy a final product. The highly functional product cannot have color immigration or shrinkage problems. End users can write a narrative about their experiences, answer questions or fill out an official paper interview.²²¹

²²⁰ leaduser.com 2009.

²²¹ Mäkinen et al. 1996, 115-116.

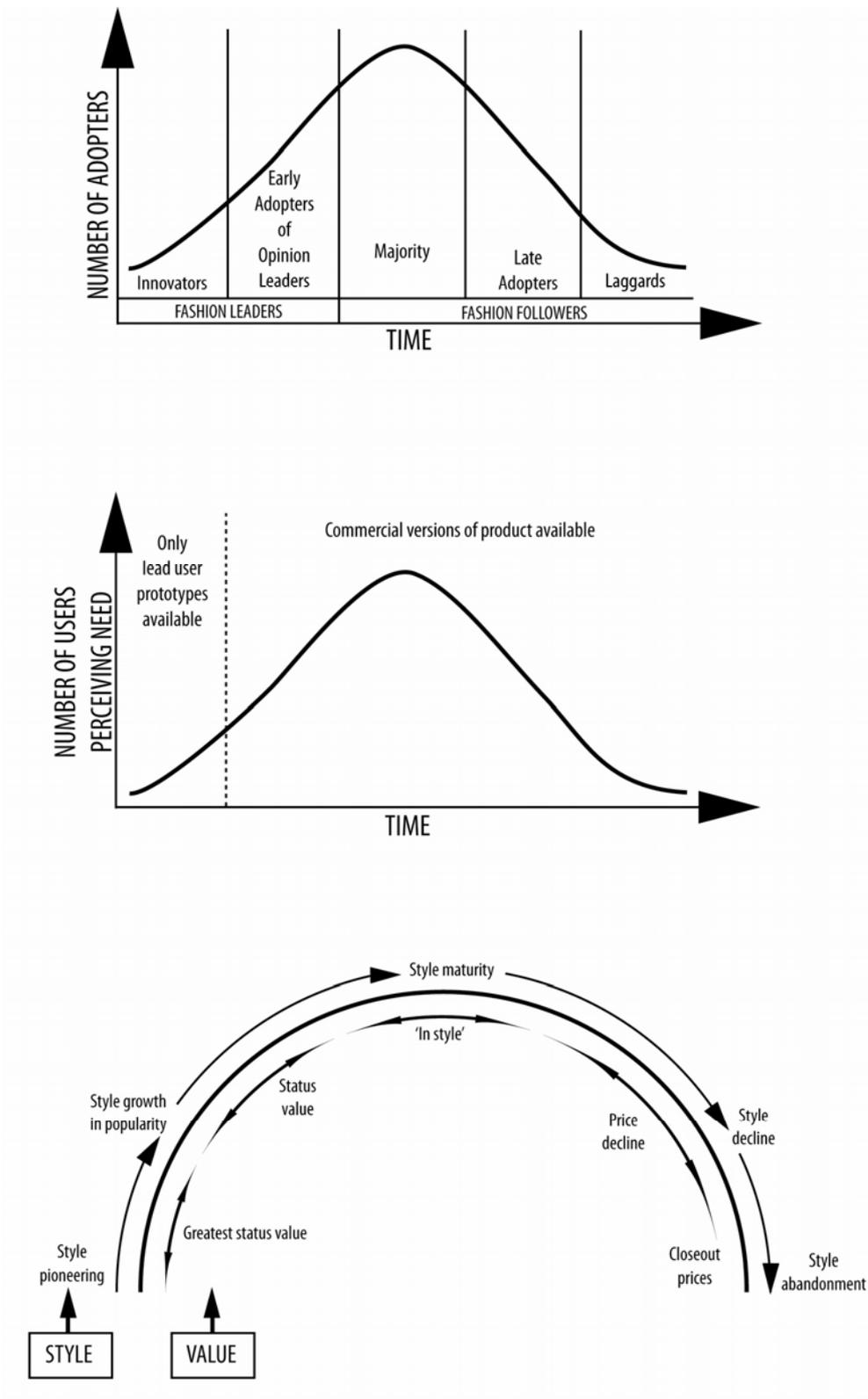


Figure 71. *The innovation spreads through social system according to diffusion curve. According to Eric Von Hippel lead users' innovations precede equivalent commercial products. The product life span and the process of product acceptance are linked together. The various stages describe the product's life cycle on the marketplace once it has been designed and developed: introduction, growth, maturity and decline. (Seppälä 2009 according to Brannon 2005, 43.; Von Hippel 2005, 134.; Packard 1983 according to Le Pechoux; Little & Istook 2001, 149.; See also Brannon 2005, 56-57, 312-313.)*

End-user interviews

The Sumac research project collected data from different user groups and conducted research on winter and summer sports. Winter activities researched were snowboarding, ski hiking, kite snowboarding, also skiing and winter climbing. Summer activities were kayaking, downhill biking and rock climbing. I have two end-user groups in my study, namely kite snowboarders and winter climbers. Both sports necessitate dressing for cold, windy winter conditions (Fig. 72.). A common need for both is also a harness, used in these activities.



Figure 72. *Both activities, winter climbing and snowkiting, happen in harsh, cold environments, which sets several requirements for clothing. Ben Nevis, Brenva Face (Photograph by Joe Nunn 2008.)*

My study was an ethnographic end-user study, because I observed the activities from the inside. I joined both of my research groups and filmed their activities while trying out both outdoor sports myself. I wanted to participate to get a better idea of their needs. My study is ethnographic, because it surveys the pro amateur culture of kite snowboarders and climbers. An ethnographer can survey what a certain phenomenon means to this specific target group. Interviews were conducted with the group interviewing technique.

I wanted to find out what environmental values and sustainability in clothing means for these end-user groups and what the specific demands on their apparel are. Research questions were divided into four different themes: meaning of the hobby, equipment and apparel, life cycle of the apparel and the activity itself, which were divided into ten different subcategories. The research questions can be found in the appendix (Appendix 1.).

I concentrated in my study on the sustainability and functions of apparel, so I did not review all the responses concerning other subjects, for example group actions and social aspects of the activity. I have attached a short description of both sports, but I do not have enough space in my thesis to review the actual technique or history of the sports. The reference list includes sources for such information. I recommend starting with the web pages of the International Kiteboarding Organization and the International mountaineering and climbing federation.

Kite snowboarding also known as snowkiting

Kite snowboarding or snowkiting is an outdoor winter sport where a rider uses kite power to glide on snow or ice. By holding on to and steering the kite, the rider is able to move with the snowboard. Like a sailboat uses its sails, snowkiters use their kites. Snowkiting may not be the easiest sport to start, because before starting to learn kitesnowboarding, the rider needs to know how to ride a snowboard and have some experience flying a traction kite.



Figure 73. *Snowkiting in Lapland, Finland (In courtesy of rider, Photographer unknown)*

In standard snowboarding, the snowboard's movement is caused by gravity. The rider needs a downhill to exploit gravity. Contrary to snowboarding, kite snowboarding is the easiest performed on wide flat surfaces such as snowy fields and frozen lakes. Snowkiting differs from other alpine sports in that it is possible for the snowkiter to travel uphill and downhill with any wind direction, but mountainous areas have very irregular, dangerous winds. Snowkiting can be very hazardous and should be learned and practiced with care. The difference between traditional snowboarding and snowkiting is that a person can enjoy kitesnowboarding on a snowy field or a frozen lake, where he is by himself and need not wait half an hour for the ski lift or pay for it. Snowkiting is a good outdoor sport to practice in Finland, due to the abundance of frozen lakes and fields in winter and lack of big snowboarding mountains (Fig. 73.).

Other traction kite related outdoor winter sports are kite skiing, kite telemarking, kite snowblading and kite skating. The winter kiting is becoming more diverse. Adventurers use kites to travel great distances. Crossings of large snowfields and even Greenland have been accomplished with snowkites. A kite can be used for back country exploration and also for freestyle or even big air jumping. The International Kiteboarding Organization (IKO) was founded in 2001. IKO provides lessons in kiteboarding, snowkiting and powerkiting. Since 2001, IKO has certified over 240,000 kiteboarders worldwide and the sport is constantly gaining in popularity.

The gear needed for snowkiting is mainly the same as for traditional snowboarding: A snowboard, snowboard boots, warm clothing, including base, middle and shell layers and additional middle layers in cold, windy weather, warm mittens and thin inner gloves. Extra gear needed includes a traction kite, lines and associated control device, a kitesurfing or windsurfing harness (either waist or seat harness), a helmet, impact vest and elbow and knee pads, basically the same protection equipment as an ice hockey player uses.²²²

I filmed kite snowboarders on February 14, 2008 and interviewed them on February 21, 2008 in Rovaniemi. Before filming and doing the interview, I joined a kite snowboarding course one of the riders held in Rovaniemi, Finland. The kite snowboarding group consisted of three men aged between 30 and 36. A factor common to all three interviewees is outdoor activity and a sailing background. Actually, kite snowboarding has much in common with sailing, because it deals with wind and the spread of canvas. The motivating factor of kite snowboarding is a feeling of freedom and speed. Beginners can cope with one or two kites, but enthusiasts will need three or more kites because of different wind condition. They may use a light wind kite, a moderate wind kite or a high wind kite. A snowkiting kite for winter conditions is different from a kite for kiteboarding in summer. All interviewees pointed out that the most important feature of the kite is safety.

Generally kite snowboarding is ecological itself, because it needs only wind, but often a car is needed to reach suitable regions in which to ride. Sometimes enthusiasts use a snowmobile, which uses gas and makes hobby less environmentally friendly. The biggest footprint of kite snowboarding comes from equipment and apparel. The kite wears out and needs to be replaced for safety reasons more often than the snowboard. Because the sport is so new, product development is fast. The glide features and durability improve enormously every season. The enthusiasts repair the kites themselves by sewing and taping and they also use sail

²²² ABC of Snowboarding part of MaxLifestyle International Inc. 2009.; KitesurfingSchool.Org 2008.; International Kiteboarding Organization 2009.

makers' services. Currently, used kites usually end up in landfills. The problem with reselling them is the safety issue. Used kites can also be used for repairing other kites. My idea was that they could be used for other equipment such as bags or even wind stopper jackets. The interviewees thought that it would be a good business idea to make products such as hoodies from their old kites.

There is certain clothing features that kite snowboarders appreciate and need to be considered in the design of snowkiting apparel. The kite snowboarding outfit consists of the same elements as any other mountaineering or winter outdoor sport outfit; base layer, second layer and shell. In Finland for example, the temperature may be 20 centigrade below zero, but during the activity the rider sweats. Because body thermal changes are so fast, it is important that the rider has optional layers that can be removed or added. Some riders use snowmobile overalls, but the interviewees preferred climbing garments, because the rider needs to lift his arms above heart level and sleeves need to be long enough and correctly cut. The helmet is essential to protect the head. The hood has to be big enough to cover a helmet and it has to allow the head to turn well enough that the user can see behind him. Being wind proof is essential as is breathability. Breathability is important because during riding, sweating is common. In cold, windy weather a sweaty rider starts to freeze quickly.

“I have used a down jacket underneath the shell jacket in ten degrees below zero. Snowkiting is that kind of sport that even you go there in really harsh weather, you get very warm during the activity. It cannot be so cold that you would not sweat. It cannot be that so cold that you could not go there. You just protect your face and use goggles on top of the mask. The hands always freeze the fastest, because they are higher than the heart.”²²³

Gloves are one of the trickiest parts, because the rider needs his hands to sort out kite leash and lines. One of the solutions was to have thin gloves underneath, but even they were considered to be too clumsy. A slightly better option is to have gloves underneath without fingertips to have better contact with lines, but then the top gloves need to be thick enough to keep the fingers warm while in motion. The gloves need to be enough long to go over the

²²³ Translated from Finnish interview by the author

”Mä olin käyttäny sitä mun tota kuoritakkii niinku jonku paksumman kanssa eli siel oli se toppa alla koval pakkasella. Toihan on semmonen laji, et vaik sä meet tosi koval, tosi kylmäl kelillä niin tos tulee aina lämmin. Oli miten kylmä vaan niin siin tulee tulee hiki, semmosta pakkasta ei ookkaan että, ei niinku, et kärsis siellä siin liikumisessa jotenkin, pistät kunnon maskit päähän ja lasit siihen päälle ja sit ainoo on se, et sit kädet on vähän kylmät, kun ne on yläpuolella sydäntä. Sitten ne jäätyy.”

jacket sleeves and the palms should be of grip material. One of the interviewees recommended neoprene gloves.

“I use a sock leg over my wrists, but it is because I do not have a good jacket with wrist warmers.”²²⁴

There are two kinds of harnesses that are commonly used; waist and seat harnesses. The waist harness according to its name goes around the waist and the seat harness also goes around the legs. The waist harness is more commonly used in summer and is considered to look better. The seat harness feels more comfortable because it does not come up to the armpits during jumps. Often those who take video films use waist harnesses, but the video shows that it lifts the jacket. People sometimes use seat harnesses underneath their clothes. The interviewees did not find suspenders very useful, because the harness lifts the trousers up anyway.

The interviewees also thought that protective gear is better attached to the body than integrated into the outer layer. Riders often use protective gear designed for other sports like motor biking or even ice hockey, although motor biking clothes were considered too heavy and clumsy. Impact vests are the same as those commonly used in snowboarding by free riders.

²²⁴ Translated from Finnish interview by the author

”Mä laitan sukanvarren rannelämmittimeks mutta se johtuu siitä, että mulla ei oo hienoa takkia, jossa semmoset sisähihat.”

Winter climbing

Climbing is described as the activity of using one's hands and feet or any other part of the body to ascend a steep object. It is done for recreation and professionally, which means that climbing can be done to reach an inaccessible place for a climber's own enjoyment or as part of activities such as the maintenance of a structure or military operations. In 1964, the American climber Lito Tejada-Flores defined climbing as a game, "precisely because there is no necessity to climb." In 1967, Lito Tejada-Flores divided climbing into seven basic forms: bouldering, cragging, continuous rock climbing, big-wall or aid climbing, alpine climbing, super-alpine climbing, and expedition climbing. After over forty years of evolution, mountaineering and climbing include many more forms such as ice climbing, sport climbing, sport ice climbing, speed climbing, ski touring, ski-mountaineering, mountain hiking, trekking, rock climbing and indoor climbing.²²⁵



Figure 74. *The beauty of mountains. Glacier du Mine, Valais (Photograph by Joe Nunn 2007.)*

In climbing people do not have to compete against each other. Mountaineering is about challenging oneself, both mind and body. Sir Edmund Hillary, who was the first to climb Mt. Everest said: "It is not the mountain we conquer but ourselves." The challenges climbers seek are different for each individual. For some the goal is to push themselves to the limit. For others it is to be in the mountain environment, or to travel to other countries and meet new cultures. What mountaineers and climbers have in common is a love of mountains (Fig. 74.).

By the term "winter climbing" as used in my thesis, I mean all types of climbing done outdoors in winter conditions. Mountaineering refers to climbing mountains for sport and recreation. It often involves trekking, rock and ice climbing. Rock climber uses climbing

²²⁵ Tejada-Flores 1990. "Published in the 1967 issue of *Ascent*, "Games Climbers Play" by Lito Tejada-Flores was one of the most widely cited essays on ethics on the climbing world.

shoes and a chalk bag to ascend rock formations. Equipment such as ropes, bolts, nuts and hexes can normally be used, either as a safeguard or for artificial aid. Ice climbing refers to ascending ice or hard snow formations using special equipment designed for this purpose, usually ice axes and crampons. The protective equipment is similar to that for rock climbing, although some protective devices are different, for example ice screws and snow wedges. The Union Internationale des Association d'Alpinisme (UIAA) (International Mountaineering and Climbing Federation) was founded in Chamonix, France in 1932. In 2009, the Federation had almost 1.3 million members worldwide. In 2009, the General Assembly of the UIAA ratified the Mountain Ethics Declaration, a code for mountaineering values, articulating sporting ethics and respect for cultures and the environment.²²⁶

I travelled to Scotland to interview climbers in March 2008. The climbers had been climbing for several years. They climbed a technical ice climbing route on the north face to the top of Ben Nevis. I joined the team of four other persons and we did the Ledges Route to the top, which is a scrambling route on Ben Nevis. After a day of climbing I interviewed four of the climbers.

Mountaineering is over 200 hundred years old. So it can be considered an old sport with a long history. Trekking and climbing are a very popular hobby in Scotland. The Highlands have over 280 mountain peaks. The universities have climbing clubs, which are a very common way to begin climbing in Scotland. Other reasons include inspiration of family or friends. It is very common in mountain sports to relate to each other and doing one thing arouses interest to try another. The sports also link together. For example, ski touring in the Alps is a way to go winter climbing. The interviewees named mountain biking, rock climbing, kayaking and free skiing among their other hobbies in other seasons or when the weather is not suitable for climbing.

The common denominator between these sports is harsh mountain environment. People, who like mountain sports, generally like the beauty of inhospitable environments and mountain landscapes. Mountain related sports and especially climbing offer adventure, going places and pushing one's own limits. It is about challenge: "If mountaineering is easy, it is not worth doing." Winter climbing needs a great deal of advance preparation and an awareness of weather and snow conditions and the packing and fixing of equipment. If you want to get the most out of it you have to be committed to it. As the Black Diamond ice climbing 08-09 catalogue warns, "Some aspects of mountaineering and related activities, including but not

²²⁶ Jenkins 2005.; International mountaineering and climbing federation 2009.; Tejada-Flores 1967/1990.

limited to technical rock, ice and snow climbing, are potentially hazardous and dangerous.”²²⁷ Part of the sport is controlling the mind and dealing with the dangers. According to the interviewee, “for the mountaineer fear means that this is dangerous situation and you have to deal with that.” If something goes wrong, the consequences will be severe. The beautiful thing is that fear can modulate different ways and each person finds the grade they are comfortable with. One of the interviewees thought that climbing makes him better person. He learns patience, which is useful in other fields of life.

The most important requirement of climbing apparel is that it functions perfectly. “The greatest thing in gear is that you do not realize that you are wearing it.” The interviewees did not care what the gear looked like. “If the base layer fits fine, I do not care how it looks.” They thought wool was best and had no bad odour. Colour can be seen as functional. If rescue is needed, the person needs to stand out from the terrain. Colour can also be functional if something is lost in snow and stands out due to its colour. Climbing it is not about appearances.

The interviewees wanted to point out they do not represent the whole climbing community. Some people use climbing clothing for fashion accessory, for example warm, winter climbing boots in summer. According to them, The North Face is an excellent brand and used a lot outside the climbing community. Most of them buy their equipment on line. “Most of the shopping happens on the line, because when you are in places, where those shops are, you want to be on a mountain.” They put effort into researching what they want to buy and ask their friends for recommendations. They thought they knew so much about outdoor apparel that they are not fooled by garment manufacturers’ commercial propaganda.

“In the beginning when you get into climbing, gear is quite exiting, and then it gets more casual. Climbing gear is not overpriced, but it is an expensive hobby, because you need valuable special equipment.” The interviewees thought that generally climbers are frugal with money. They do not want to pay to replace their equipment if it is not absolutely necessary. The only reason for buying new gear is that the old gear is broken. “In climbing people use them until they break down, except if they realize that for example “jacket is piece of crap”, then it is replaced as soon as possible.”

Mountain climbing is not competitive; better equipment is not needed to compete with others as in mountain biking, where one must keep up to be able to compete. The interviewees were eager to be in touch with the outdoor brands. Most gear has guarantees and by sending broken

²²⁷ Black Diamond ice climbing 08-09 catalogue 2008.

apparel back they can get replacements. One interviewee had got five pairs of pants by buying one pair, because they always broke before the guarantee time was up. Even though they bought the best possible models, the apparel breaks down. “The real question is whether something better exists?” One interviewee sent back his tent, which he thought was the best in the world except for the lines. The tent company fixed the lines for him like he wanted, and they also changed their whole tent production line accordingly.

All the interviewees agreed that the weakest point in apparel is the zipper. The stitching is another problem because it easily comes out. The stitching should be secured so as not to run if one thread breaks. “Some hoods are good – most hoods are crap. If a hood is not big enough to go over helmet, it is poorly designed.” A removable hood is useless, because the wind tears it away. A roll down hood is OK. The hood peak is essential to prevent rain water reaching the eyes. Other important features they appreciate are high collar and zippers that stay up. Elastic bands break too easily, which is a very minor thing, but annoying. The important factors in climbing apparel are shapes and cutting. Sleeves must not fall back when hands are raised. People who climb are generally slim. The right length may be too wide. Mountaineering trousers need to go over the boot and have built-in snow gaiters. If the cutting is wrong, the jacket rides up. The jacket should have a big pocket out of mesh to stuff things in.

“When I am going to a mountain environment I think more what I am going to wear, because if you make bad clothing decisions it can be dangerous.” They thought that maybe the area where gear can create the most danger is when they are designed to be extra light and break during the activity. Some of the important protection gears are harness, helmet, rope, ice axe, map and compass. The most important body part to protect is the head. Unconsciousness or even death can be caused by falling ice. I learned a couple of very good garment modifications that would be interesting to develop. One of them was a t-shirt that was cut open at sides. When the climber gets too hot, he can pull it off. The other modification was to cut holes in the shirt back and also shorten the front of the shirt. The climber is wearing a harness and all the layers underneath it, so it is easier to move when you have fewer layers in your lap. One of the interviewees condensed a whole point about functional clothing into a single sentence:

“Bad pair of gear can ruin the day and good pair of gear does not ruin the day.”

Conclusions of end-user study

I found that there are also some differences between kite snowboarding and climbing. Kite snowboarding is a fairly new sport. The snowkiters reported that progress in equipment development is so fast that two-year old kites are already out of style. They also noted that it is very dangerous to give an old kite to someone else after use because it is safety risk.

Most of the things they paid attention to were design and unsatisfactory technical features. One of the most important findings I made is that design is a key to sustainability. If the garment and all its details work properly, the end-user commits to taking care of it and repairs it carefully. Correct washing and care will extend a products' life cycle and decrease its impact on the environment.

Some aspects of mountaineering and related activities, including technical rock, ice and snow climbing are potentially hazardous and dangerous. Accidents happens in inhospitable environments, thus climbers are primarily interested in avoiding accidents. At the time of purchase the most important feature is functionality in clothing; sustainability is not the top priority. On the other hand, climbers are very environmentally friendly towards nature in their daily practices. For instance, they avoid leaving any rubbish behind and generally clean up campsites.

I gathered a great deal of information about design details and functional properties of outdoor clothing I can use when designing mountaineering clothing (Fig. 75.). One common problem in garments in both groups was gloves. In winter conditions gloves are essential because hands freeze quite quickly. Gloves must be removed to adjust equipment, eat or for any jobs needing the use of fingers. In kite snowboarding snowkiting gloves must often be removed to clear kite lines. The kite snowboarders stated that they had frozen their hands so badly without noticing it. The most painful part is when the hands start to warm up again. One of the climbers advised me to put my gloves inside my jacket when I needed to remove them. This would keep them warm and prevent their loss. There are a few problems, however. Sometimes, gloves can be so wet and snowy that putting them inside a jacket does not feel very comfortable. Also, a backpack may pull the jacket very tight and there may not be very much room and opening the jacket itself may be a problem.

A hood, bracing leg ends, pockets placement and ventilation should be paid attention to when making functional clothing designs for climbing and snowkiting. In both activities, it is necessary to wear a helmet. The hood must be adjustable and large enough to go over a helmet. A cap is considered useful. Often outshell fabrics are not strong enough to resist sharp crampons or snowboard edges. Leg-ends need to be protected against cuts. Harness and backpack impose new requirements for pocket placement. Pockets placed on the hips are useless. The kite snowboarders also pointed out that all swinging pockets and loose ends are a problem. Two other functional problems are how to take your pants off without taking off your shoes and how to urinate without taking your harness and pants off. Both riders and climbers named sleeve length and jacket rising up as one of the common problems in the outshell jackets currently on the market.



Figure 75. *Outdoor clothing for winter climbing has many performance requirements. Ben Nevis. (Photograph by Joe Nunn 2008.)*

6.3 The tool and model

The issue of sustainability in outdoor clothing is very complicated. My main research question was: what should a designer know about sustainability to be able to design environmentally friendly outdoor clothing. It is very hard to get objective material information and place materials in order of environmental friendliness without a specific life cycle analysis tool. The life cycle analysis tool is useful when all the factors are known, but it is not always available.

I and Hanna Söder wanted to create a tool to help designers in environmentally friendly choices. The model of sustainable outdoor clothing includes three parts: design, functions and sustainability. Our model is a combination of well-known tools and models already existing, such as Papanek's six-sided function matrix, sustainable development, lifecycle of outdoor garment and design facts we found out in our end-user interviews.

Outdoor apparel has very specific performance requirements. Effective material selection and apparel design requires deep understanding of these requirements. The requirements vary from comfort to protection.²³⁰

A designer can use our model to confirm what functional and environmental aspects he or she should consider.

²³⁰ Blair 2007, 60.

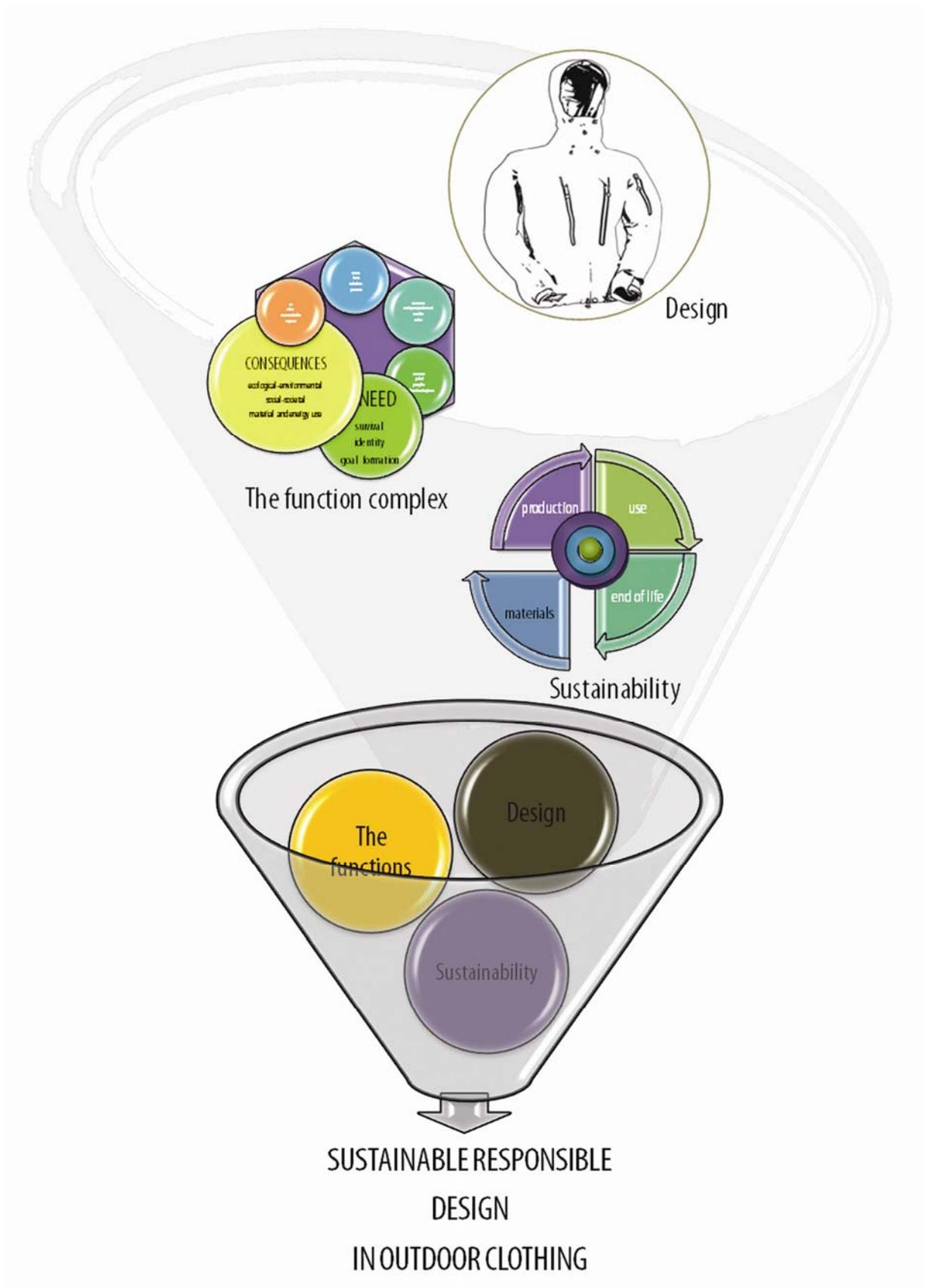


Figure 76. *The model combines design, functions and sustainability in outdoor clothing a tool for designer to be able to design sustainable responsible outdoor apparel. (Seppälä & Söder 2010.)*



DESIGN



Figure 77. *The modern functional outdoor clothing concept is based on a layering system. Each layer has a specific function and they are designed to work together to offer overall comfort and protection.²³¹ Good design, quality materials and the possibility to repair outdoor clothing will increase the life cycle of outdoor apparel. (Seppälä 2010.)*

²³¹ Bramel 2005, 33.

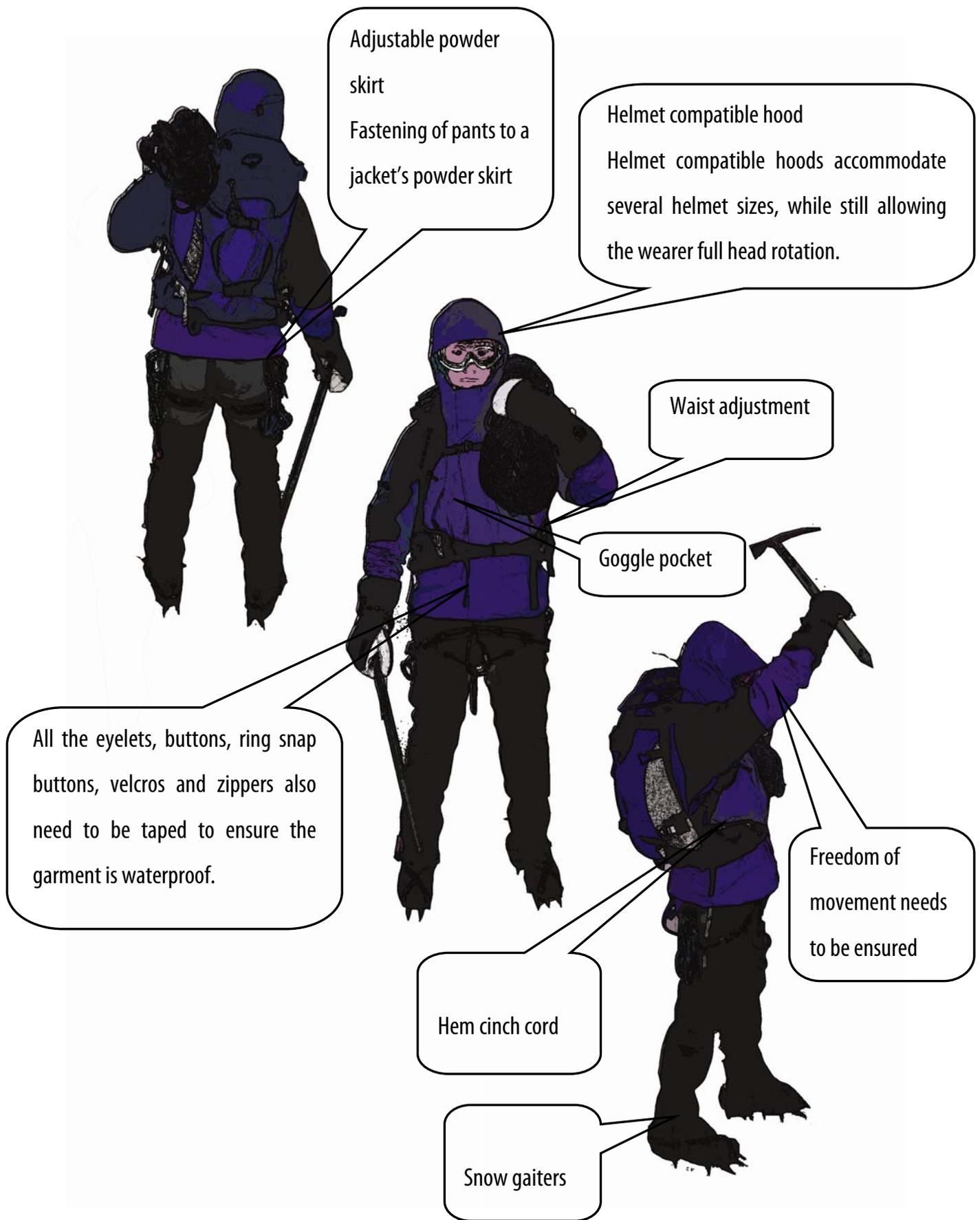
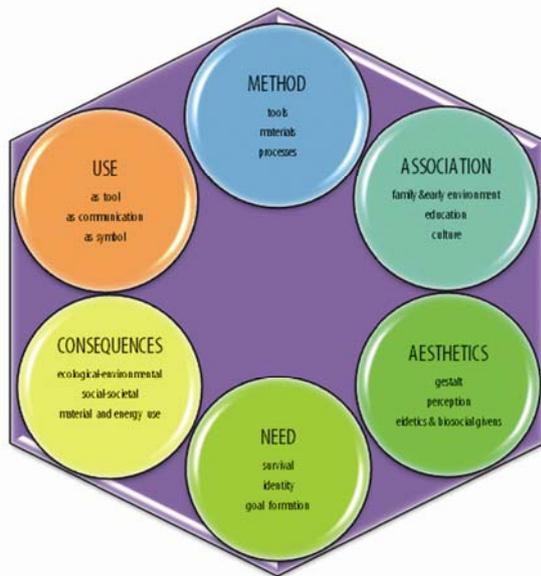


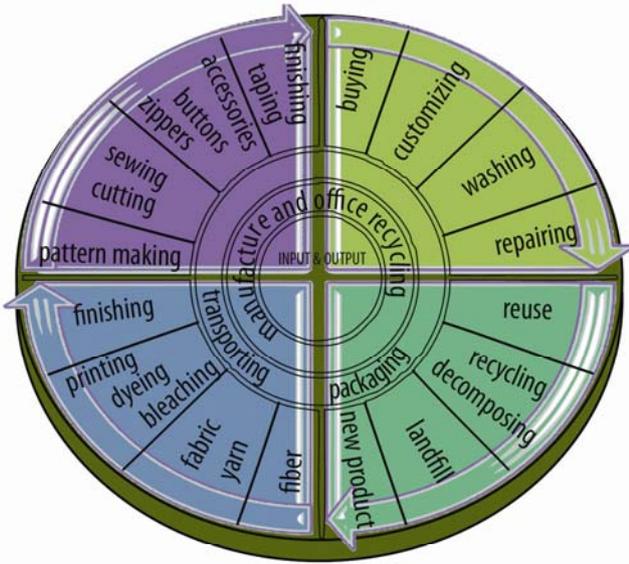
Figure 78. *Some of the requirements of the functional outdoor clothing.*(Seppälä 2010.)



PAPANEK'S SIX-SIDED FUNCTION MATRIX



Figure 79. Papanek's six-sided function matrix was first introduced in 1970. In 1995 revised version takes in consideration all the functional aspects that should be considered, when designing functional clothing. Those six aspects are: method, association, aesthetics, need, consequences and use. (Seppälä 2009 according to Papanek 2005; Photographs by Craabaek, Seppälä and Nunn.)



SUSTAINABILITY IN CLOTHING LIFE CYCLE

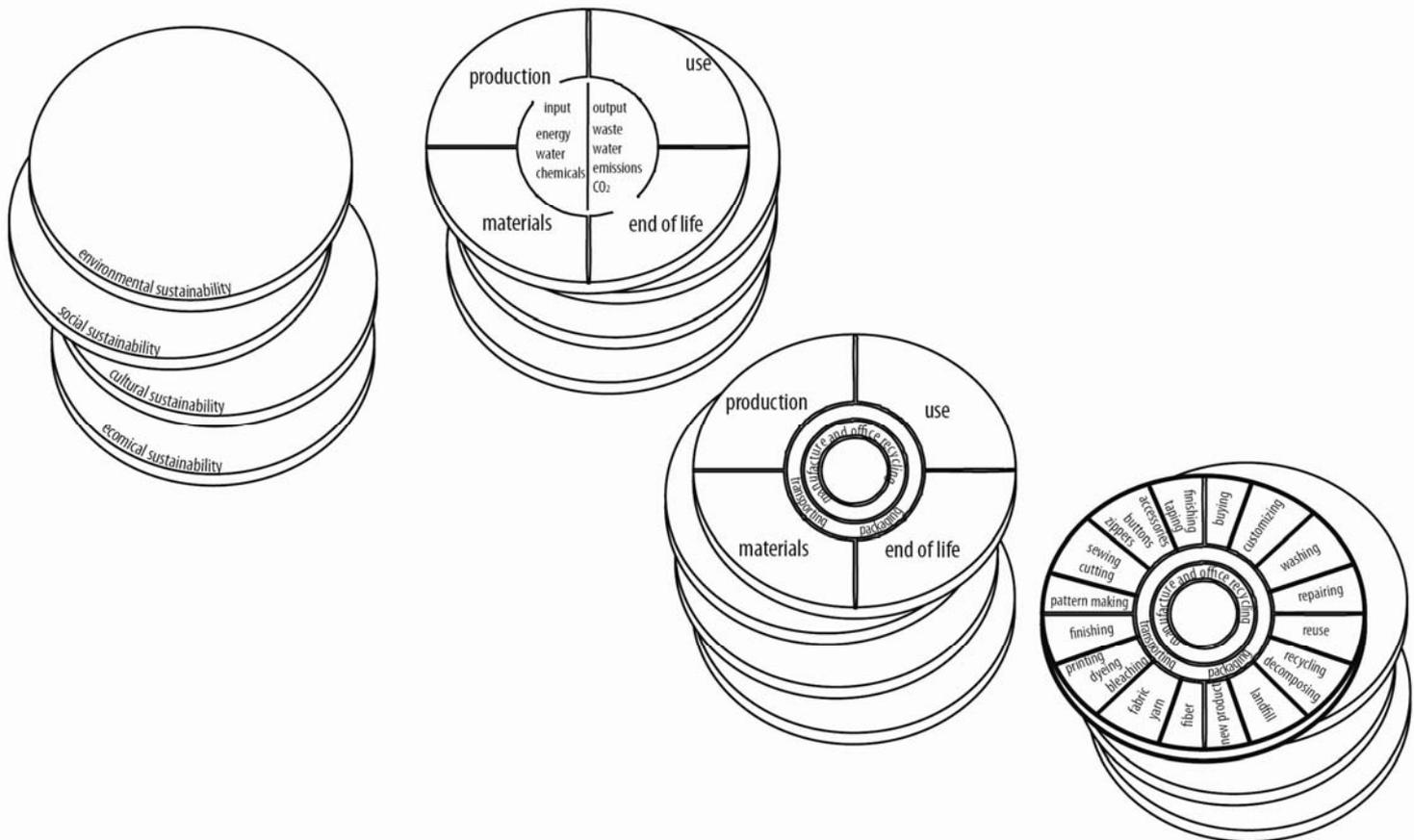
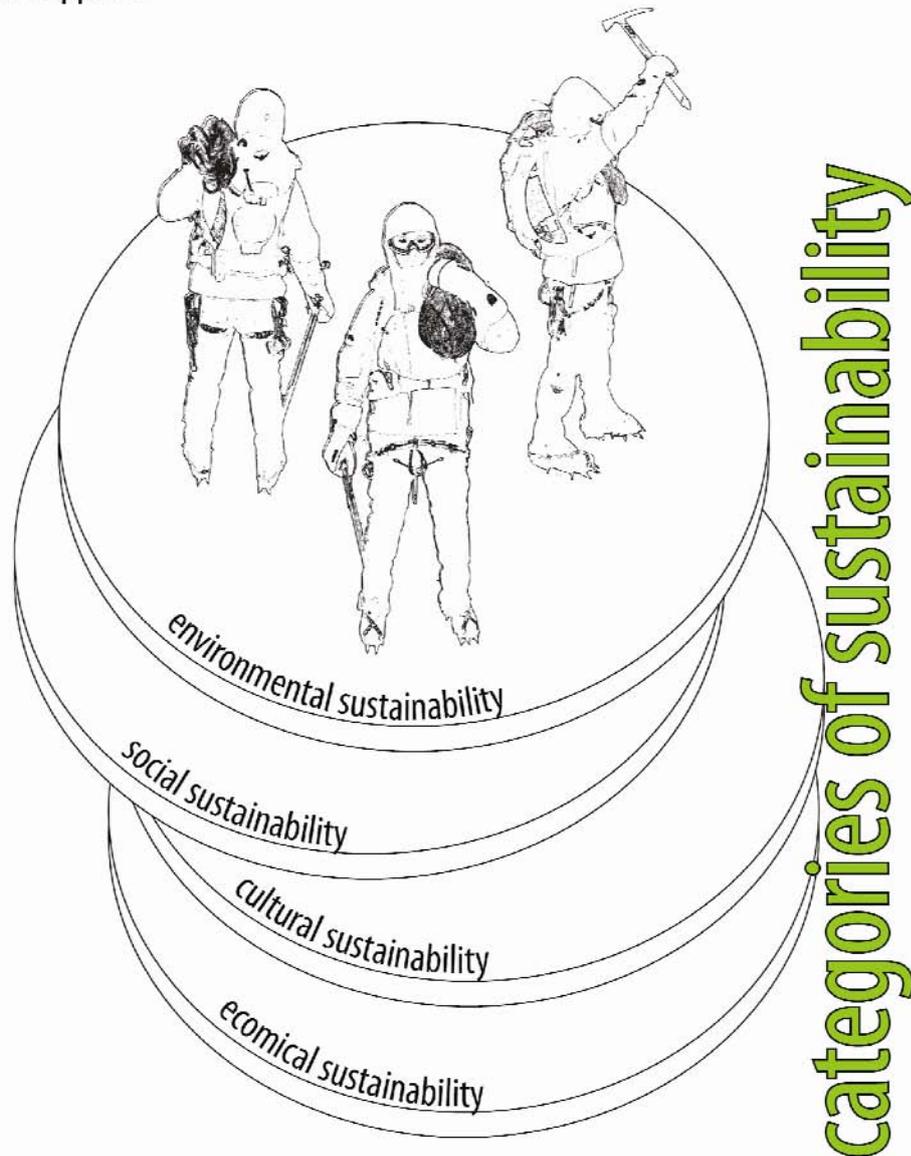


Figure 80. *Materials and processes used for outdoor clothing have several potential environmental risks. When surveying environmental impacts of clothing, impacts can be divided into four main groups: manufacturing, delivery, consuming and end of life.*

The model includes all four aspects of sustainability. Environmental sustainability is divided in raw materials, manufacturing production, transporting, packaging, use, office recycling and final d of life. (Seppälä & Söder 2010.)

A SUSTAINABLE OUTDOOR CLOTHING TOOL FOR DESIGNER

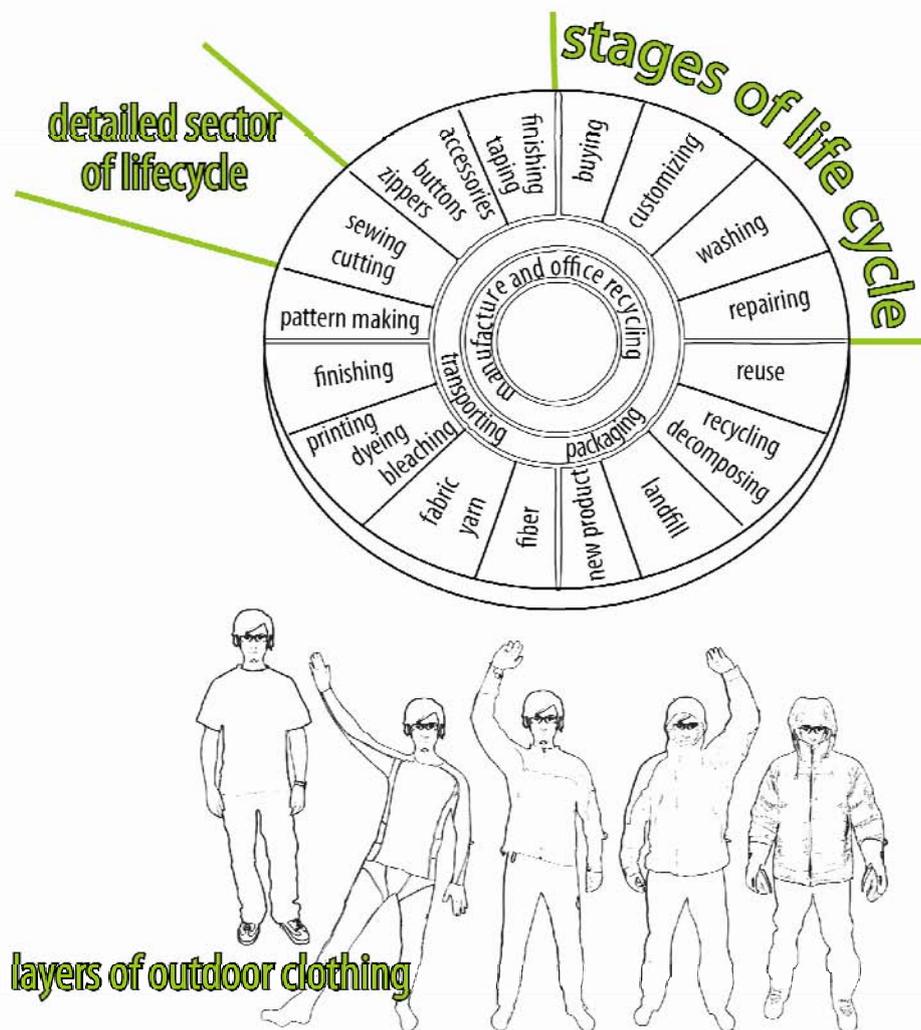
- The tool can be used as a guideline in designing environmentally friendly outdoor apparel.



- Sustainability can generally be divided in four categories, such as economical, cultural, social and environmental sustainability.
- We have chosen environmental sustainability to be our focus area in functional outdoor clothing.

Figure 81. *The four categories of sustainability are environmental, social, cultural and economical sustainability. The environmental sustainability is above others, because without it others cannot exist (Seppälä & Söder 2009 according to Suojanen 1997, 12.).*

- The environmental sustainability is divided by us end of life stages, which have an effect on environmental friendliness of outdoor clothing.
- The four main stages are material, production, use and end of life. These stages are divided more detailed sectors. The footprint of all of these sectors should be taken in consideration when evaluating overall impact of outdoor clothing.
- In all of these stages happens packaging, transporting and manufacture and office waste management.
- These detailed sectors can be used also when evaluating other categories of sustainability.



- All layers of functional outdoor clothing can be evaluated with this tool.

Figure 82. Seppälä & Söder model of sustainability in outdoor clothing. (Seppälä & Söder 2009.)

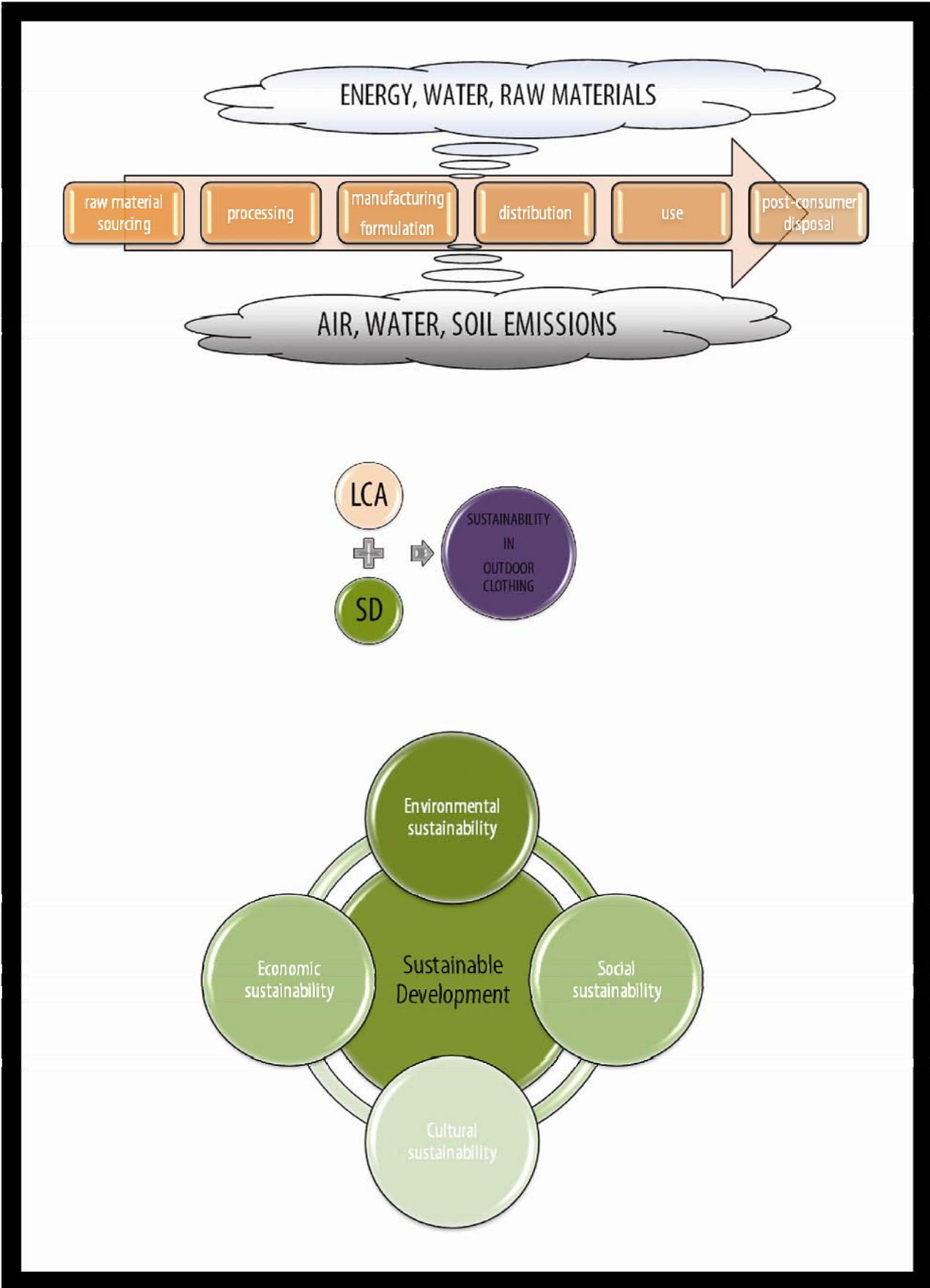


Figure 83. *The tool for designing sustainable responsible outdoor clothing is combined from ideas of life cycle analyses and sustainable development. (Seppälä & Söder 2009.)*

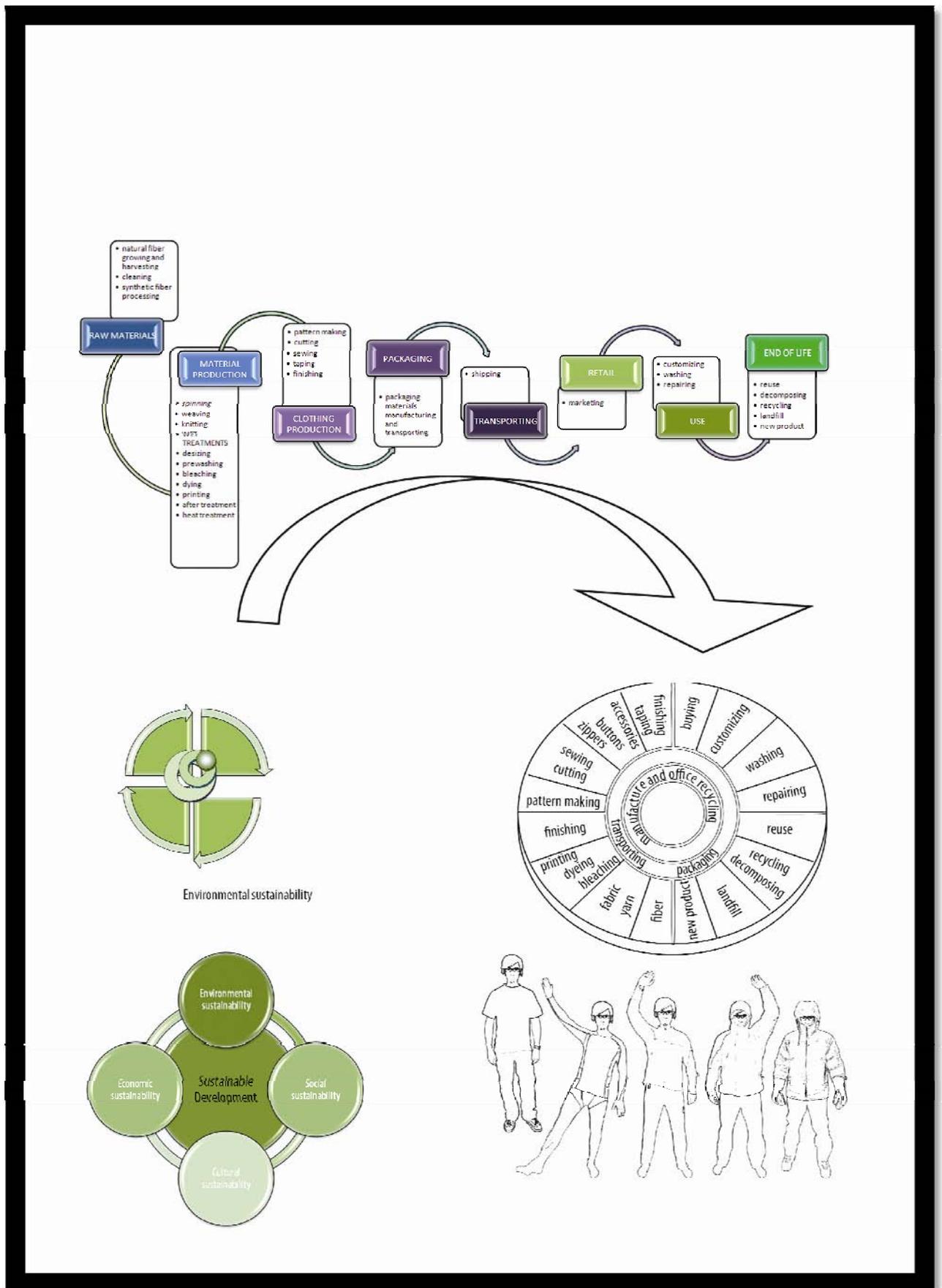


Figure 84. The model combines four aspects of sustainable development with the life cycle of all the layers of outdoor clothing. (Seppälä & Söder 2009.)

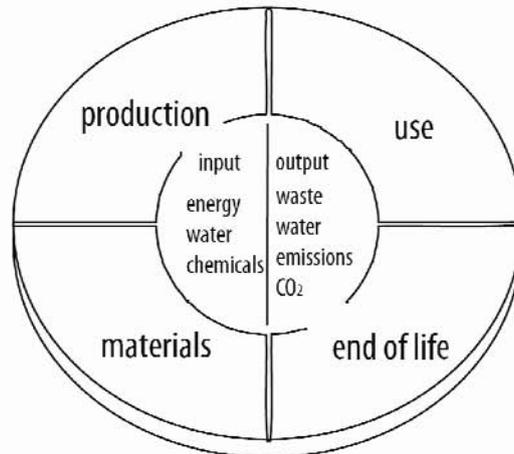
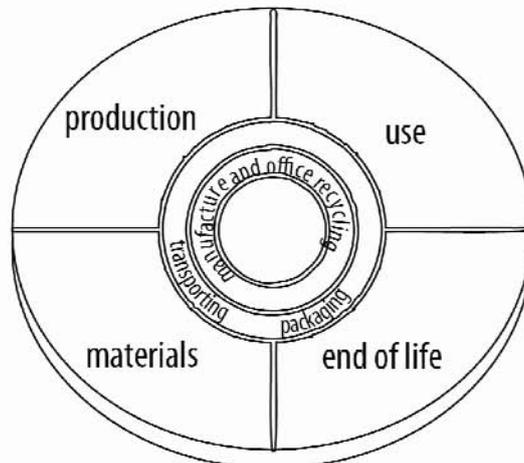
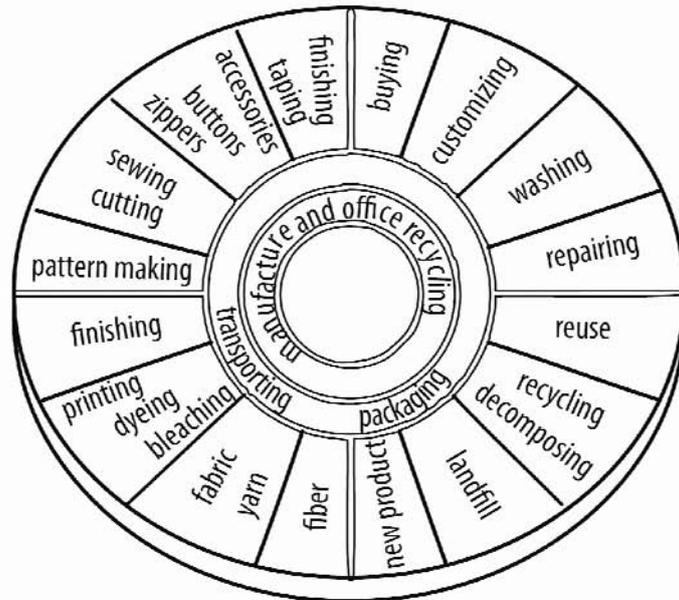


Figure 85. Designers should consider all sections of the model when designing sustainable responsible outdoor clothing. (Seppälä & Söder 2009.)

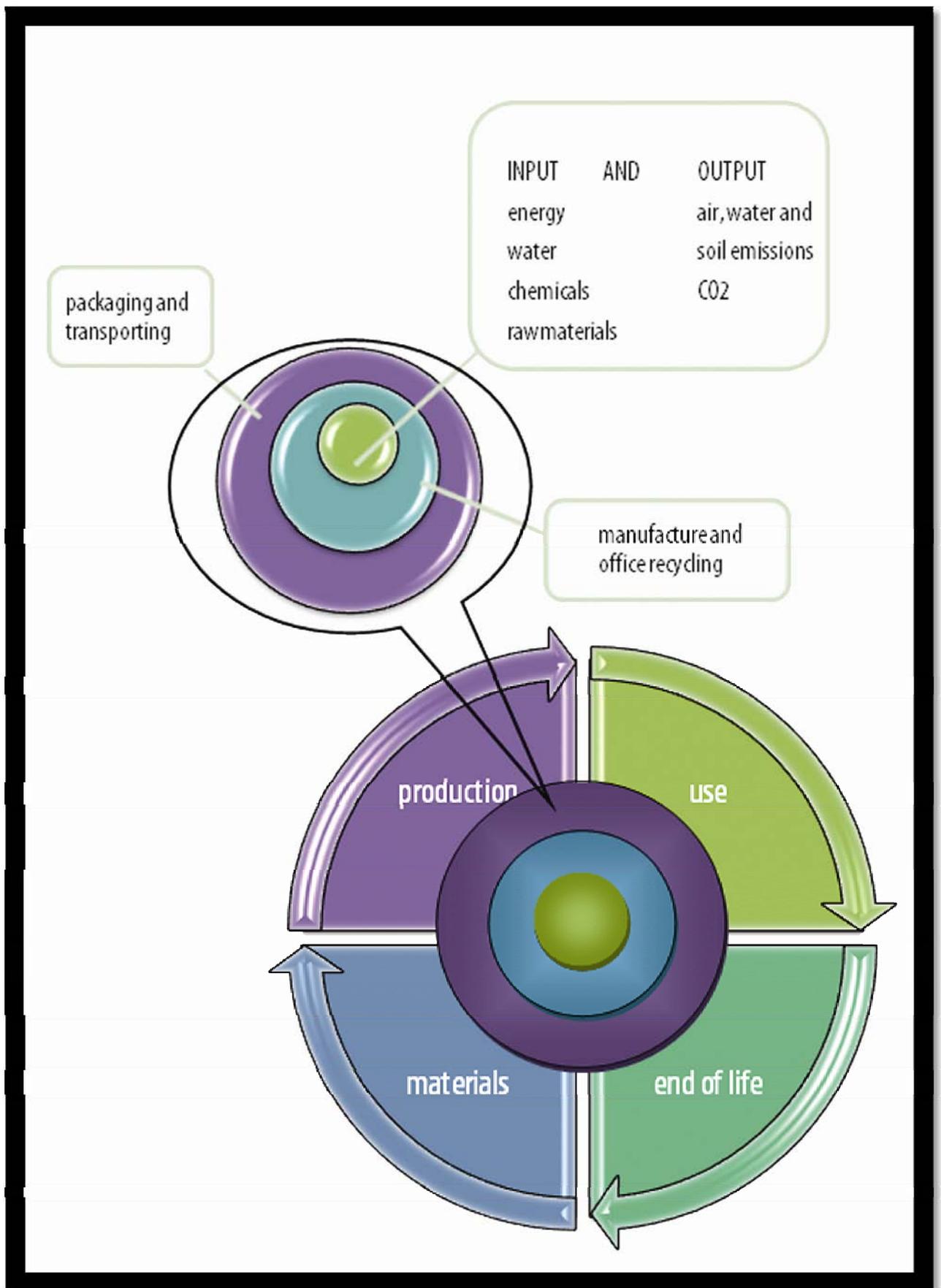


Figure 86. A detailed picture of environmental sustainability. Inputs and outputs of whole life cycle of outdoor clothing are in the middle. In our life cycle model packaging and transporting are in the circle, because they happen in all the stages of the life cycle. (Seppälä & Söder 2009.)

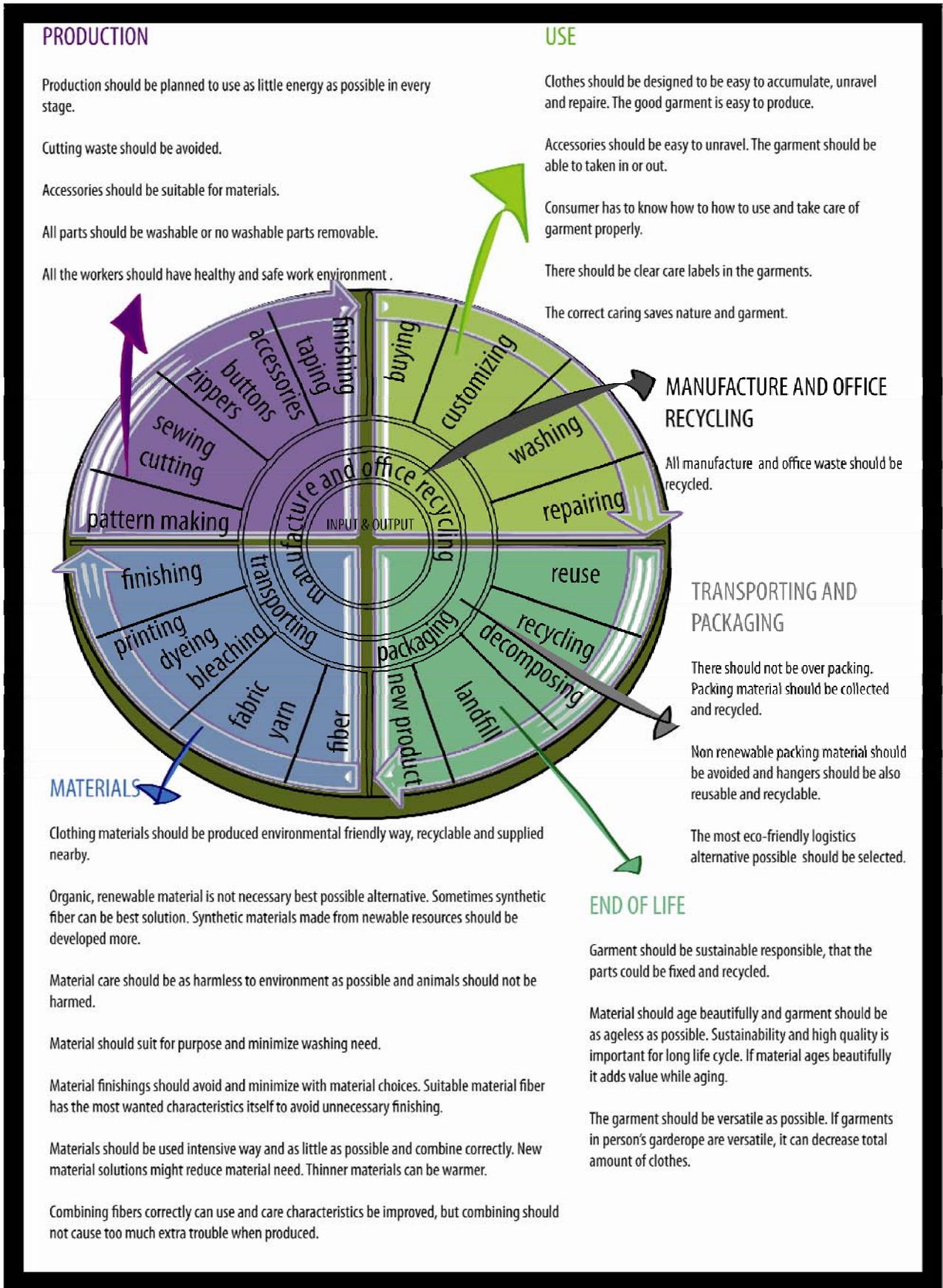


Figure 87. Some of the things every outdoor clothing designer should consider. (Seppälä & Söder 2009. according to outdoor companies studied 2009; Paakkunainen 1995 & Fletcher 2008.)



CONCLUSIONS AND DISCUSSION

7 CONCLUSIONS AND DISCUSSION

Nobody can deny that climate change under way and environmental problems are an ever greater and more serious threat. Public interest in nature and sustainable development has increased, thus awareness of environmental issues and corporate social responsibility has increased among outdoor companies. In fall 2009 many of the companies I studied for my graduation thesis, mentioned rapid climate change and environmental problem on their web pages. According to my study the number of environmentally sound outdoor brands has increased.

The environmental problems caused by textile and clothing production are not unambiguous. Environmental hazards are difficult to control and they may increase in various stages of textile production. The change in public opinion has affected political decision-making and created new stricter laws than in the past. The EU has passed a new law called REACH (Registration, Evaluation and Authorization of Chemicals) to improve the protection of human health and the environment from the risks of chemicals.

The number of environmental certificates and ecolabels increased enormously in the nineties. There were hundreds of different types of ecolabels and it was difficult for customers and even companies to evaluate their credibility. Nowadays some international standards and ecolabels have reached a recognized position in public opinion. The companies can affect informed consumers' choices by meeting requirements of acknowledged standard like ISO family. There has been criticism that conventional testing methods usually focus on the protection of consumers, so that the product itself is free of hazardous chemicals. The entire production chain should be evaluated from the footprint of processing raw materials and the manufacturing conditions through transporting and packaging to retailing.

Environmental sustainability is only one aspect to consider when designing optimal outdoor clothing. The companies should also take care of social sustainability as well as animal rights. Moving production to low-cost countries has caused many problems in achieving ecological manufacturing in functional outdoor garments. Using suppliers in poor economic countries requires additional responsibilities from outdoor brands. Often the legislation is not as strict in poor economic countries and companies there are sometimes interested in just making a profit. People want to reach the same standard of living as people in western industrial countries, before making environmental efforts. Even local politicians in poor economic countries take the view that the industrial countries have caused the climate change problem

and it is not their business to take care of it. This attitude requires a great deal of responsibility from outdoor brands. It is a challenging situation for them to supervise their suppliers' manufacturing conditions and demand their suppliers follow environmental standards. This, of course, is also an economical matter. If the company is merely surviving, they have fewer opportunities to make their manufacturing process more environmentally friendly. Buying sustainable materials is more expensive for outdoor companies than conventional materials.

A great change in advertizing material can be seen between 2007 and 2009. In two years outdoor companies have raised environmental values to top of their agendas. From a modern business perspective, sustainable responsible design can no longer be ignored. Outdoor companies acknowledge that the world wilderness so important to their business is disappearing. According to my study, many companies consider it important that their employees are also interested in the outdoors on a personal level. Many of those who work in the business are also outdoor enthusiasts sharing a strong commitment to protect land and water. The outdoor business can inspire solutions to the environmental problems.

Despite the fact that outdoor companies do business related to nature, there were great differences among the companies studied in 2007. There was a major environmental awakening in 2007 towards climate change, which influenced public opinion. The sustainable design aspect was fairly new generally in the outdoor clothing industry in 2007, but there were also forerunners, for example, Patagonia, which considered environmental values already in 1970's. Patagonia has also undertaken concrete actions since then. Some companies I studied changed their attitude and increased their actions during the time period of my study. My study proves that this time period was a turning point in ecological thinking among outdoor companies. My hypothesis is that outdoor lifestyle brands cannot survive in the business without subscribing to environmentally friendly practices.

This issue of sustainability in outdoor clothing is very complicated. My point of view initially was the designer's point of view: what a designer should know about sustainability to be able to design environmentally friendly outdoor clothing. It is very hard to get objective material information and place materials in order of environmental friendliness without a specific life cycle analysis tool. The life cycle analysis tool is useful when all the factors are known. Often a designer cannot obtain objective information about a fabric manufacturer's production facilities, dyes and finishes used. It is said that real sustainable development and environmental manufacturing are not done only by the purchasing department.

Materials are not the only aspect affecting the environmental friendliness of outdoor clothing; correct choices of materials are extremely important. For an outdoor clothing company, choosing material that is considered green is an easy road to take, but it can be seen as pure marketing-driven greenwashing. It is just not enough for an outdoor brand to offer a shirt made from bamboo, coconuts, hemp or PET bottles, if it is their only action. The outdoor companies should, of course, provide sustainable products, but they should also incorporate environmentalism into all their actions. My study shows that this is possible at least for some brands.

In past years there has been an enormous increase in materials claimed to be green. There is development in both natural and synthetic fibers. There are many natural and organic fibers available that are said to have ecological benefits compared to conventional ones. Synthetic fibers have also been developed to be more environmentally friendly, especially concerning their recycling. I think that growth of the population, shortage of raw materials, increasing amount of waste and environmental problems as well as restrictions in CO₂ emissions because of climate change will force the outdoor industry to concentrate on end-of-life solutions. Everything they make should be recyclable and support the closed-loop system. The need for new material would then decrease. The materials in the future should be recyclable and eventually biodegradable.

A satisfied end-user is more likely to be sustainably responsible. If the garment is well designed and the end user is satisfied with it, it is more likely that he will take better care of it. Correct washing and care will extend products' life cycle and decrease their impact on the environment by decreasing the need of new raw materials. Taking care of clothing is also economical for the consumer. The outdoor clothing manufacturer is responsible for manufacturing quality products in an environmentally friendly way. According to my study, many outdoor clothing companies stated good design is the key factor to promote sustainability.

The responsibility of consumers is to pay attention to the proper care of the garment when purchasing outdoor clothing and consumers should also make sure that the design and details suit their purposes. According to the interviews with end-users, functionality is the most important factor in outdoor garments. The price also affects the decision to buy. If green products were available with the same functions and at the same price, many users would choose the more environmentally friendly alternative. The information gained will be valuable for me in the future in designing sustainable responsible outdoor garments and also for further sustainable product development.

Post Scriptum

The United Nations Climate Change Conference in Copenhagen 7-18 in December 2009 was not huge success and in January 2010 IPCC apologized that their reports have been too pessimistic about climate change²³². I think that outdoor clothing industry still has to go to more sustainable direction. Further studies could be made based on this thesis in developing sustainable functional clothing innovations for various outdoor sports.

²³² IPCC 2010 IPCC statement on the melting of Himalayan glaciers. Retrieved January 31, 2010, from <http://www.ipcc.ch/pdf/presentations/himalaya-statement-20january2010.pdf>; Virtanen, J. 13.01.2010. Skeptikot saivat erävoiton. Helsingin Sanomat.

ACKNOWLEDGEMENTS

This study was conducted during the years 2007-2010 at Faculty of Art and Design, University of Lapland. This thesis was carried out part of Sustainable Innovative Materials in High Tech Applications (Sumac) research project funded by the Academy of Finland.

I would firstly like to acknowledge my supervisor, Professor Marjatta Heikkilä-Rastas, PhD. I thank for her criticism and comments for all the work done for this thesis.

I owe my gratitude to Professor Minna Uotila, PhD, and thank her for giving me opportunity to join her group in Sumac research project. Special thanks are also due to our research group, Pia Ryttilahti and Hanna Söder for their professional help and for all their patience.

I wish to thank Jane McCann and Marion Elwanger for introducing me world of smart clothes and wearable technology. I also want to thank Anders Wennergren and Eugene Lee for giving me very valuable information about ecological textiles. My thanks also go to Terry Ranney for giving me information about seam tapes and heat adhesives.

My special thanks go to Mike Timmins and Juha Kosonen who donated their time for meeting me and for my interview. I wish to express my sincere gratitude to all the climbers and snowkiters who volunteered to participate in the study.

I wish to thank Virginia Mattila, Melody Dorstad and Timm Sothmann for skilful revision of the language and Carsten Graabaek for translating, coloring and sending me his Kingdom comic strip.

I also want to thank Kirsi Jaakkola and Ari Virtanen for believing me and giving me the opportunity to learn secrets of technical outdoor clothing. Finally, my gratitude goes to my former colleagues in Halti Oy and friends for the strength you have given me to finish this thesis in the first place. My deepest thanks are due to my parents, my mother Riitta and father Erkki, for believing me and supporting me in all my decisions.

Rovaniemi, January 2010

Laura Seppälä

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- Figure 3.** *Seppälä 2009.; Photograph by Laura Seppälä*
- Figure 4.** *Seppälä 2010.; Photograph by Laura Seppälä*
- Figure 5.** *Seppälä 2009.; Photograph by Joe Nunn*
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- Figure 77.** *Seppälä 2010.*
- Figure 78.** *Seppälä 2010.*
- Figure 79.** *Papanek, V. 1995. The Green Imperative. London: Thames and Hudson
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Figure 80. *Seppälä & Söder 2010.*

Figure 81. *Suojanen, U.1997. Vihreät tekstiilit. [Green textiles.] 2. Revised Ed. Helsinki: Yliopistopaino.
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Figure 82. *Seppälä & Söder 2009.*

Figure 83. *Seppälä & Söder 2009.*

Figure 84. *Seppälä & Söder 2009.*

Figure 85. *Seppälä & Söder 2009.*

Figure 86. *Seppälä & Söder 2009.*

Figure 87. *Paakkunainen, R. 1995. Vaatteiden ympäristöhaitat: miten suunnittelija voi vaikuttaa. [Disadvantages of Clothes. How designer can make a difference.] Helsinki: Taideteollinen korkeakoulu
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Figure 88. *Seppälä 2010.*



Semi-structured group interview

First briefly of our research project: Sumac – Sustainable Innovative Materials in High Tech Applications

- The central idea is to look at the whole life-cycle of a product, and find ways to extend it and optimize its ecological footprint.
- The aim is to combine high tech with ecology

This is a group theme interview, a conversation-like (video) taped get-together. It is totally confidential, no one's name will be mentioned in research findings, because we have obligation to maintain secrecy in the research projects funded by the Academy of Finland. There are five themes to be discussed:

Theme 1: Please, tell what is the *meaning of this enthusiasm* in climbing for you.

Theme 2: Please, tell about the *equipment* needed for climbing.

Theme 3: Please, tell about the *environment* of climbing.

Theme 4: Please, tell about the *people*, the activity outfit and their workings as a team in climbing.

Theme 5: Please, tell about the *ecology* of climbing.

1. Personal significance of the sport (climbing)
2. Equipment / apparel
 - Acquiring of gear
 - Weather conditions and environment
 - Ergonomics
3. Life cycle of the equipment
 - Maintenance and repairing
 - Services
 - Sustainability of the sport
4. Social activity
 - Teamwork
 - Skills and investment of time
 - Journeys and happenings

The presentation of the persons to be interviewed

1. Name, age and profession

1) Personal significance of the sport

Please do tell us how and why you did choose this sport of yours?

2. How did you take a fancy to this sport? Is it a passion of yours? What other spare time passions have you got? Do you find any moments of passion in your work?
3. How long have you practised this sport?
4. Did you have another sport before this one?
5. Should you choose another sport -what could it be?

Describe your sport in a few words

6. Your motives? What kind of experiences do you expect to find through this sport?
7. What kind of equipment and conditions are needed to achieve a good experience?

2) Equipment/Clothes

Supplying the equipment

8. What do you pay attention to when choosing your equipment/clothes-security, appearance, durability, personality, something else?
9. Who is your purveyor?
10. How often will you replace your equipment/clothes with new ones and for what reasons?
11. To what extent is your sport a sort of fashion sport?
12. How important is the appearance of the equipment?
13. What kind of requirements should the material of the equipment/clothes needed for this activity fulfil?
14. Have you been in contact with the producers/manufacturers of equipment (e.g. when asking for tailored/personal equipment) Why? What was the outcome of the contact?
15. Missing and misunderstood facts and details in planning and designing? In other words, what goes usually wrong in the produced equipment?
16. What kind of factors should be better considered in the planning process of products?
17. How could the manufacturers improve their products?
18. What do you think about your present equipment/clothes?
19. Do you consider your sport and the required equipment expensive?

Weather conditions and the environs where to practice the sport

20. What kind of requirements does the environment – weather, climate, and season – set for the equipment/clothes?
21. How well do the clothes protect one from cold/dampness/wind?
22. What kind of solutions of your own due to the cold/damp/windy environment have you found out?
23. What is a good area for the sport like? And a bad one?
24. What kinds of conditions - weather, environment, and season - are ideal?
25. What kinds of conditions – weather, environment, and season - pose a challenge?
26. The toilet facilities? Did you stay overnight close to some cottage?

Ergonomics

27. Do the equipment/clothes hinder your moving and actions? E.g. the mittens- are they fit for their purpose?
28. What kind of risks are you supposed to meet? Is it possible that the equipment/clothes might cause some dangerous situations?
29. Which things are the most challenging ones to a beginner?
30. The most important protective equipment?
31. The criteria that the material of the protective equipment has got to meet?
32. Parts of the body that especially need protective equipment? Why?

3) The life cycle of the equipment

Service, repairs and logistics

33. What kind of service does the equipment need? Who is responsible for the work?
34. What kind of improvements or changes do you want concerning the service activities?
35. Do you tune the equipment? How and in what way? Working as a team?
36. What kind of solutions of your own do you use to improve and to facilitate the use of the equipment?
37. Where do you store your equipment? What kind of storage problems have you encountered?

The ecological aspects of the sport

38. In your view, does the sport meet the ecological criteria?
39. How are the things needed packed? Are plastic bags used much?
40. And the equipment – are the products ecological?
41. The life time and the life cycle of the equipment?
42. The importance of the ecological criteria of the equipment´s material when making the decision about which article to choose
43. How the equipment/clothes maintained and what are to be done when the equipment is worn and out of order? Can the things be mended? Can you do it yourself?
44. Could the life time be any longer? Which material qualities should be improved then?
45. The end station of the equipment?
46. In what way could we get additional material recycling?

4) Social activity /

Teamwork

47. Can you practise your sport alone?
48. What kind of people is interested in this sport? Why?
49. Is there another type of activity that might easily work as entrance to this sport?
50. How often do you practise this sport or sport? With what kind of a team?
51. In what way/in what kind of circumstances have the members of the team found each other?
52. Something common – e.g. common happenings, events and official programs?
53. The essential meaning of a team or group?
54. Your summer activities?
55. What kind of club activities connected with the practised sport are there?
56. The importance and meaning of club activities?

57. What type of sport activities is discussed?
58. Are there different “classes” around this particular sport? How do they differ from each other as for the equipment and motives?

Skills and investment of time

59. How do you estimate the level of your skills?
60. How do you follow up the development of the skills needed in your sport activity?
61. Do these activities demand lots of time?
62. When do you go in for sports?
63. How important is the age of the hobbyist?
64. Importance of the sex?
65. What influence do the experiences from the sport have on your life in general?
E.g. studying, working or family life
66. Does your work trouble your sporting activities?
67. Do you receive financial or any other form of support from some persons or instances (e.g. employers, sponsors, community, pals, family)
68. Have you ever participated in testing of equipment together with the manufacturers? Tell about the details.

Journeys and happenings

69. Any happenings or journeys connected with your sporting activities?
70. In what kind of circumstances might these things become current?
71. What is the motive for a journey of several days? Why are they carried out?
72. How is the team for journeys or happenings chosen?
73. What kinds of preparations are needed for the journeys and happenings?
74. How are e.g. the meals organized during the journeys and happenings?
75. Are the dishes disposable? Where do you put the waste material during the journey?
76. What are signs and marks of a good sport journey or happening like?
77. And the ones of a poor one?
78. What is the best or the worst thing during a long journey?
79. To finish up: tell us about your best or your most frightening experience?

To bring this to a close: Did we miss something essential? The feedback of the interview. How would you like to comment these consumer research methods with the use of videos and interviews?