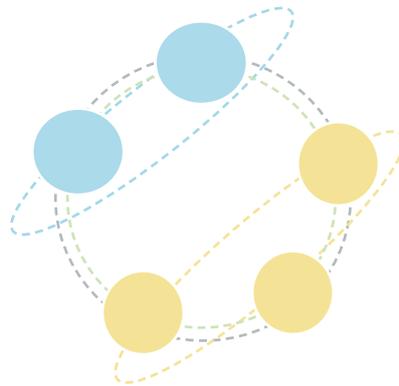


Lucerne University of Applied Sciences and Arts, School of Art and Design
BA Design Management, International
Bachelor Thesis

ZERO TEXTILE WASTE

A ZERO TEXTILE WASTE STRATEGY ENCOURAGES RECYCLING IN SWITZERLAND

Alexandra Kolosova



Author	Alexandra Kolosova Karstlernstrasse 5 8048 Zurich +41 (0)79 213 97 74 alesa.kolosova@gmail.com
Tutor	Daniel Aeschbacher, Tutor and Faculty Member, Design Management, International
Major	Bachelor of Arts in Product and Industrial Design with the Specialization in Design Management
Location, Date	Lucerne, May 19, 2016

ABSTRACT

The goal of this thesis is to outline a proposal for how to reach a 50% increase in the textile collecting rate in Switzerland by 2020 through enhancements to the textile recycling experience, as well as to identify changes required in the recycling methods and infrastructure. In order to reach this goal, secondary and customer research was conducted to identify requirements for the solution. As a result five requirements were identified and grouped into Business Strategy or Communications Strategy requirements. For each requirement, design criteria were determined.

Business Strategy requirements and criteria are:

- Requirement: Developed infrastructure
Criteria: Efficient facilities and maximum benefit from collected resources
- Requirement: Efficient collecting method
Criteria: Fewer, publicly popular points of collection and access for everyone

Based on the design criteria, strategy guidelines for each requirement were developed.

In order to propose guidelines for the Business Strategy requirement “Developed infrastructure”, key findings from secondary research were used:

- joining under Texaid’s name
- additional voice sorting facility
- use of sensors to monitor fullness of containers
- investments in recycling technology
- no quality requirements

For the “Efficient collecting method” requirement, outdoor containers located at recycling stations were proposed. This was based on the research findings and personal communication with the target group.

Communication Strategy requirements and criteria are:

- Requirement: Transparency
Criteria: A clear communication of charitable activities
- Requirement: Developing awareness about services
Criteria: Effortless access to information and potential to reach larger amount of Swiss residents
- Requirement: Environmental and social education
Criteria: Effortless access to information and potential to reach larger amount of Swiss residents

Moreover, according to the design criteria and based on ideas that were derived from the brainstorming session and ethnographic research, guidelines for the Communication Strategy were elaborated. For the “Transparency” requirement, a clear communication about charity and business activities through main touch points and use of imagery was recommended. For the requirements “Developing awareness about services” and “Environmental and social education”, a system consisting of the following elements was proposed:

- Facebook page
- Swap events
- Handouts for each apparel purchase
- Garbage bags
- Receipts in garment stores
- Advertisement in public transport
- Detergents

A Zero Waste Strategy including Business and Communication guidelines is the proposal to the textile collecting companies aimed at increasing the textile recycling rate.

As a first step, the Business Strategy requirements are to be fulfilled. In the next step, when the company is prepared to receive a larger amount of textiles, the Communication Strategy could be initiated. The individual elements of the developed communication system should be monitored, with effective ones continued and even enhanced, and less effective ones potentially eliminated.

TABLE OF CONTENTS

INTRODUCTION	
Motivation	1
Purpose of The Study	1
Methodology and Structure	2
1. WASTE MANAGEMENT IN SWITZERLAND	3
1.1 Waste Accumulation	3
1.2 Sustainability	4
1.3 Recycling in Switzerland	4
1.3.1 Composition of a Swiss Trash Bag	5
1.4 Key Findings Chapter 1	5
2. TEXTILE INDUSTRY IMPACT	6
2.1 Textile and Clothing Industry Today	6
2.1.1 Textile Industry and Labour	6
2.1.2 Textile Industry and Energy Consumption	7
2.1.3 Textile Industry and Health	7
2.1.4 Waste Accumulation	7
2.2 Textile Industry Outlook	8
2.2.1 Fresh Water Scarcity	8
2.2.2 Petroleum Scarcity	8
2.2.3 Land Scarcity	9
2.3 Key Findings Chapter 2	9
3. TEXTILE WASTE MANAGEMENT	10
3.1 What Happens to Unwanted Textiles in Switzerland	10
3.2 Technological Advancements in Textile Recycling	11
3.2.1 Collection	11
3.2.2 Sorting	11
3.2.3 Processing	12
3.3 Textile Collecting Companies in Switzerland	12
3.3.1 Texaid	12
3.3.1.1 Collection	13
3.3.1.2 Sorting	14
3.3.1.3 Key Findings Texaid	14
3.3.2 Tell-TEX	15
3.3.2.1 Collection	15
3.3.2.2 Sorting	16
3.3.2.3 Key Findings Tell-TEX	16

3.3.3	I:Collect	17
3.3.3.1	Collection	17
3.3.3.2	Sorting	18
3.3.3.3	Key Findings I:Collect	18
3.4	Key Findings Chapter 3	18
4.	USER INSIGHTS	19
4.1	Online Questionnaire	19
4.1.1	Key Findings Online Questionnaire	19
4.2	Interviews	19
4.2.1	Key Findings Interviews	20
5.	PROPOSAL REQUIREMENTS	21
5.1	Requirements Development	21
5.2	Criteria Development	23
6.	IDEATION	25
6.1	Business Strategy Guidelines	25
6.1.1	Developed Infrastructure	25
6.1.2	Efficient Collecting Method	26
6.2.	Communication Strategy Guidelines	27
6.2.1	Transparency	27
6.2.2	Developing Awareness and Educating	28
6.2.2.1	Brainstorming Session	28
6.2.2.2	Communication System	30
7.	PROPOSAL	33
7.1	Business Strategy Guidelines Feedback	34
7.2	Communication Strategy Guidelines Feedback	34
8.	CONCLUSION	36
9.	OUTLOOK	38
	BIBLIOGRAPHY	39
	DECLARATION OF AUTHORSHIP	42
	ACKNOWLEDGEMENT	43
	APPENDIX	44

LIST OF FIGURES

Figure 1:	Double Diamond Design Approach (Design Council, 2005)	2
Figure 2:	The MSW Accumulation and Waste Management in Switzerland (FOEN, 2012)	3
Figure 3:	Composition of Trash Bag Contents in Switzerland (FOEN, 2012)	5
Figure 4:	Textile Life Cycle and Impact (Kolossova, 2016)	9
Figure 5:	Unwanted Textile Utilization Methods (Kolossova, 2016)	10
Figure 6:	Outdoor Textile Collecting Container (Kolossova, 2016)	13
Figure 7:	In-store Textile Collecting Container in Schild (Kolossova, 2016)	13
Figure 8:	A screen-shot of a Requirement List (Texaid, n.p)	14
Figure 9:	Plastic Bag Collector at Charles Vögele (Kolossova, 2016)	14
Figure 10:	Plastic Bag for Street Collection, Tell-TEX (Kolossova, 2016)	15
Figure 11:	A Screen-shot of the Quality Requirements from www.tell-tex.ch (Tell-TEX, n.p.)	15
Figure 12:	I:counter (I:Co, n.p.)	17
Figure 13:	I:Co Display Collectors and Discount Vouchers at H&M and Vögele Shoes	17
Figure 14:	Potential Increase in Textile Collecting Rate in Switzerland (Kolossova, 2016)	21
Figure 15:	Voice Sorting System at Texaid (Texaid, n.p)	25
Figure 16:	Textile Collector Placed at Recycling Station (Kolossova, 2016)	26
Figure 17:	Comparison of Visual Language (Kolossova, 2016)	27
Figure 18:	Ideas Evaluation (Kolossova, 2016)	29
Figure 19:	Clothes Swap Event in Zurich (Walk-in closet, n.p.)	30
Figure 20:	Promotion on Receipt Example (Kolossova, 2016)	31
Figure 21:	Promotion on a Handout Example (Kolossova, 2016)	31
Figure 22:	Promotion on a Bottle of a Detergent Example (Kolossova, 2016)	32
Figure 23:	A Zero Textile Waste Strategy Proposal (Kolossova, 2016)	33
Figure 24:	Outlook on a Timeline (Kolossova, 2016)	38

LIST OF TABLES

Table 1:	Communication Strategy Requirements Development	22
Table 2:	Business Strategy Requirements Development	23
Table 3:	Business Strategy Criteria Development	24
Table 4:	Communication Strategy Criteria Development	24

LIST OF ABBREVIATIONS

FOEN	Federal Office for the Environment
EEA	European Environmental Agency
MSW	Municipal Solid Waste
GDP	Gross Domestic Product
BCG	Boston Consulting Group
SR	Swiss Recycling
FAO	Food and Agriculture Organization of United Nations
UBi	Ultrasonic Level Sensors
I:Co	I:Collect
EPEA	Environmental Protection Encouragement Agency
BD	Berne Declaration
FOS	Federal Office of Statistics

INTRODUCTION

MOTIVATION

A recent review shows that Switzerland is one of the top ten countries with the richest economies in the world, where income per capita reaches USD 56,000 (Haroutunian, 2016). Being one of these countries also means accumulating more waste. According to the European Environmental Agency (EEA) the amount of municipal solid waste (MSW) generated per capita in Switzerland is around 702 kg annually, while in another European country Germany, the number is 610 kg (2015). By contrast, in the African country Nigeria, MSW per capita is 182 kg annually (Bioenergy consult, 2014). Thus, experts from the Federal Office for the Environment in Switzerland (FOEN, German: *Bundesamt für Umwelt, BAFU*) claim that there is a proportional relationship between economical state and generated waste amounts in the country (2012).

Furthermore, one of the main contributors to MSW in Switzerland is textile waste, which makes up almost 4 % of all incinerated waste (FOEN, 2012). Statistics show that out of 18 kg annually generated textile waste per person, only 6 kg are being collected to be recycled (Kanton Basel Stadt, n.p.). Taking into consideration the amount of textile waste, as well as the fact that the textile industry is considered the second biggest polluter after the oil industry, it is wrong to let unwanted textiles go to waste.

Moreover, Texaid and Tell-TEX are two textile and shoe collecting organizations in Switzerland that are members of the Swiss Recycling (SR) foundation. Both organizations have similar requirements for the waste they collect: it should be clean and wearable. Soiled pieces, off-cuts and other leftovers are not collected. However, according to statistics published by Texaid, only 65 % of the collected textiles and shoes are in the required condition to be worn again. Additionally, 33 % are pieces in the condition suitable to be recycled and around 2% are usually incinerated. (Texaid, n.p.)

Generally speaking, it could be concluded that collecting companies are capable of handling the entire range of quality of the textiles they collect, in addition to those that meet the requirements they set. As a result, those requirements and other factors might demotivate users to recycle 100% or to recycle at all. In order to increase the textile waste recycling rate in Switzerland, the collecting systems must be improved.

PURPOSE OF THE STUDY

The purpose of this study on behalf of the SR foundation is to persuade Swiss textile collecting companies to encourage a higher textile waste collection. Thereby, in order to understand how to motivate Swiss residents to recycle the entire textile waste they produce, the goal is to identify factors in the user experience that are barriers to achieving this goal. Moreover, to encourage companies to collect and handle more textile waste, the goal is to identify incentives, benefits and possibilities to enhance the efficiency of their business.

Thus, the aim of this work is to answer the following question:

How to motivate Swiss residents to recycle 100 % of their textile waste and how can Swiss textile collecting companies cope with the increase of textile collection?

Based on the research question the hypothesis was formulated as follows:

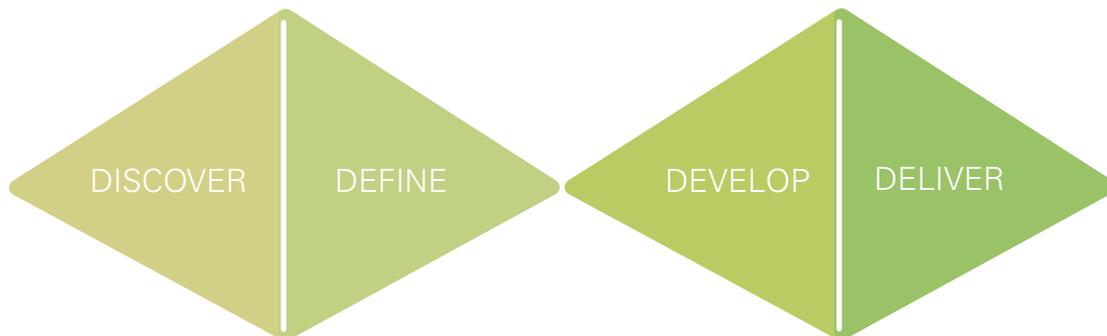
Understanding how the user textile recycling experience can be enhanced, as well as understanding changes that are required in the recycling methods and infrastructure in order to respond to the

larger amount of textiles collected, can support a 50% increase in the textile collecting rate in Switzerland by 2020.

Preliminarily, the outcome of this thesis is a list of guidelines, by which textile collecting companies can support an increase in the recycling rate in Switzerland and enhance their business. This will be a first step to achieve the overall goal of 100% textile recycling rate in Switzerland by 2030.

METHODOLOGY AND STRUCTURE

Figure 1. Double Diamond design approach. (Design Council, 2005)



This thesis is structured in two parts and follows the “*Double Diamond*” design process approach, developed by Design Council in United Kingdom in 2005 (see Figure 1).

The first diamond consists of the “*Discover*” and “*Define*” phases. During the “*Discover*” phase, the main goal is to familiarize with the current situation in textile market and recycling. Desk and ethnographic research was conducted in order to gain an insight to the textile recycling topic with a focus on Switzerland including textile collecting companies and textile donators.

During the “*Define*” phase, the requirements and criteria for the proposal were identified. Based on all key findings from the “*Discover*” phase, two sets of requirements for *Business* and *Communication Strategy* were formed. Afterwards, they were edited with design and success criteria.

Moreover, based on these requirements and designed according to the design criteria, in the “*Develop*” phase a proposal for the textile collecting companies in Switzerland was formulated. In order to find valuable concepts, brainstorming sessions and direct communication methods were applied.

Finally, in the “*Deliver*” phase, the proposal for the textile collecting companies in Switzerland was outlined and tested. For the *Business Strategy* a feedback session with the field expert from SR, Ueli Maass, was conducted. The *Communication Strategy* was tested by Claudia Bucher, communication expert at SR. Both feedbacks were reflected accordingly.

1. WASTE MANAGEMENT IN SWITZERLAND

The following chapter gives an overview of the current situation in waste accumulation and management in Switzerland.

1.1. WASTE ACCUMULATION

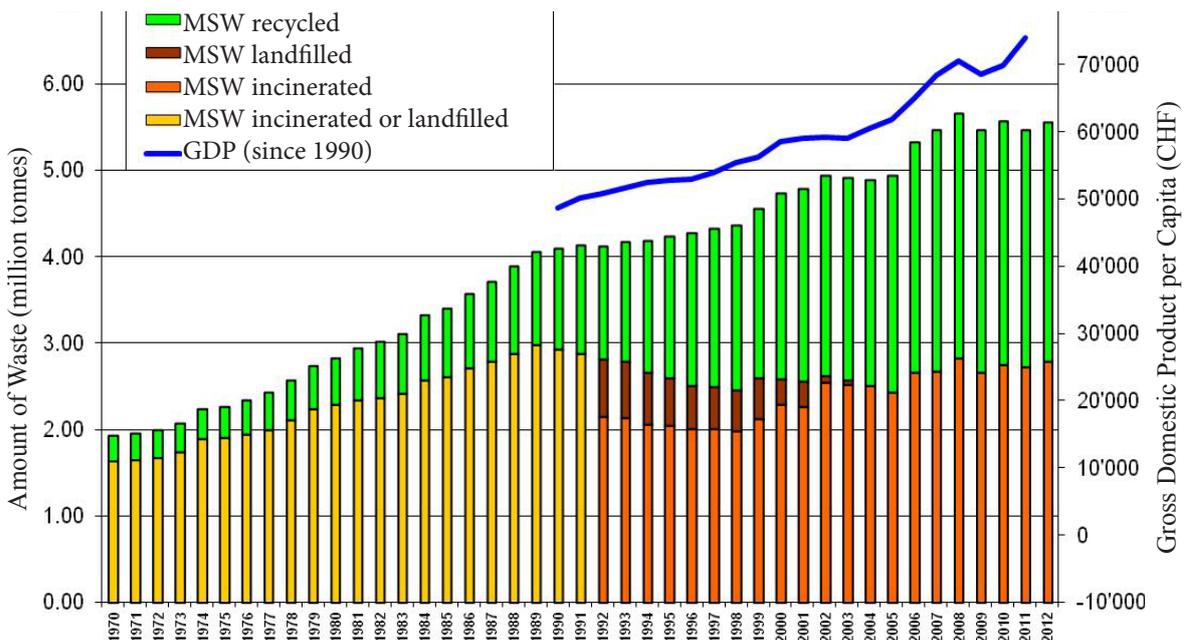
According to the FOEN between 1970 and 2012 there was a 300 % increase in the waste accumulated in Switzerland, which resulted in 6 million tonnes (FOEN, 2014). This 6 million tonnes of municipal solid waste (MSW) consists of household and commercial wastes, excluding hazardous, industrial and construction waste (University of Michigan [UM], 2015). Furthermore, Swiss experts relate the MSW increase to the fast growth of the economy and population during this same period of time.

Economic prosperity, being the main reason out of the two, could be measured by gross domestic product (GDP). According to Professor of Economics N. Mankiw and Professor of International Finance M. Taylor, “Gross domestic product is the market value of all final goods and services produced within a country in a given period” (2014, p. 439). Furthermore, GDP divided by population gives GDP per capita and is used when applying cross-country comparisons (p.445).

According to the GDP per capita measurements, Switzerland is in top ten list of countries and the amount of municipal solid waste (MSW) generated per capita was 702 kg in 2013 (European Environmental Agency [EEA], 2014). By contrast in Germany, 610 kg of MSW was generated with GDP per capita of \$46'200 in the same year, while in African country Nigeria, MSW per capita generated was 182 kg with an average income of \$3000 per capita (Bioenergy consult, 2014).

Thus, it is clear that higher GDP means higher waste accumulation. This relationship in Switzerland is seen clearly in Figure 2, where the amount of MSW increased following the rise in GDP. Additionally, in 2009 due to the economic crisis both the MSW and GDP indicators dropped, but afterwards increased again in 2010 along with the recovery of the economy.

Figure 2. The MSW accumulation and waste management in Switzerland.(FOEN, 2012)



1.2. SUSTAINABILITY

In recent decades awareness about environmental issues and the importance of sustainability rose considerably. Overconsumption results in tremendous amounts of pollution which is harmful to the health of humans, as well as to the whole planet. Awareness of this issue continues to rise. (Fisher Thornton & Covey, 2013)

Nowadays, an increasing number of enterprises realize the need and benefits of a “green” and “sustainable” mindset shift. Consequently, sustainability has become an important business guideline. In terms of business definition, sustainability can be described as follows: “Business sustainability, also known as corporate sustainability, is the management and coordination of environmental, social and financial demands and concerns to ensure responsible, ethical and ongoing success. (Techtarget, c1999-2016)”. Furthermore, according to the 2016 annual report made by the Robeco Sam company, specialized in sustainability investing, Europe has the largest number of most sustainable companies in the world. Moreover, along with the UK, Netherlands and France, Switzerland is one of the biggest contributors among European countries, which can be explained by a higher demand for sustainable business practices in Western society (2016).

1.3. RECYCLING IN SWITZERLAND

One of the most important parts of sustainability is recycling, which supports preservation of the resources consumed by humanity. In Switzerland, recycling is increasingly reinforced through strong financial incentives. Today, every bag of household waste costs at least CHF 2. Thereby, by separating waste, Swiss citizens have an opportunity to save money, as most of recycling services are free of charge (BBC news, 2005).

Being members of the SR foundation, all recycling organizations in Switzerland are self-sustaining. Depending on the waste type, the collecting is done either by house to house collection and/or by collection points, where residents take their waste. Each of the SR member companies focuses on recycling of a specific category of product (Swiss recycling, c2015):

- tin cans (FERRO-Recycling)
- household batteries (INOBAT)
- textiles (TEXAID and Tell-TEX)
- light bulb (SLRS)
- electrical and electronic equipment (SENS Foundation and Swico)
- household aluminium (IGORA)
- PET beverage bottles (PET-Recycling CH)
- glass (VetroSwiss)
- paper (Perlen Papier)

Furthermore, depending on the canton such products like carton, compost, PE milk bottles, coffee capsules, CD's, corks and plastic hollows, are collected by independent commercial or state bodies. The rest of MSW from construction, production and other non-recyclable refuses are incinerated in one of 28 incineration plants in Switzerland (FOEN, 2012).

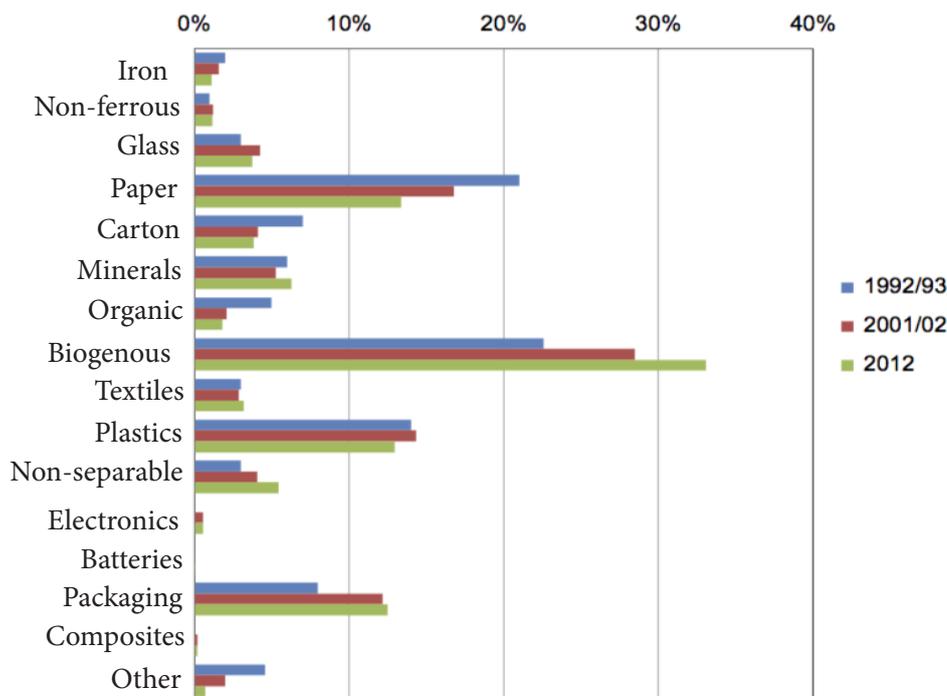
Moreover, from the data presented in Figure 2, it is clear that between 1990 and 2012, the recycling rate in Switzerland has had a considerable rise. However, due to a corresponding rise in GDP, the amount of MSW also grew. Interestingly, due to an increase in recycle rate the amount of incinerated trash stayed stable.

Generally speaking, in 2012 out of almost 60 million tonnes of MSW more than a half was recycled. An enormous amount of work has already been done to achieve these results, but according to experts the problem is not yet solved, and more separation and handling of waste is needed. (FOEN, 2012)

1.3.1 COMPOSITION OF A SWISS TRASH BAG

Every decade since 1992 the FOEN in Switzerland conducts research that aims to identify what Swiss resident throw into the trash. In 2012, approximately 16.5 million tonnes of trash bags were sorted into 18 different categories. Figure 3 presents the findings of this research compared with figures from previous years. According to the findings, the largest part of 33% was biogenous waste, which represents a 10% increase since 1992. Paper waste was the second largest part of the disposed trash and in comparison to the previous years its amount decreased by almost 10%. Moreover, 66'000 tonnes of textile waste, which is 4% of the total, was the ninth largest part, but interestingly, this number remained stable throughout the three decades covered by the studies. Even though, only 4% does not seem to be a big issue in comparison with other larger categories, it is environmentally and economically wrong to waste any textiles. Especially, when taking into consideration the fact that the textile industry is the second biggest polluter and one of the biggest consumers of vital natural resources.

Figure 3. Composition of trash bag contents in Switzerland. (FOEN, 2012)



1.4 KEY FINDINGS CHAPTER 1

- Due to a thriving economy, Swiss resident accumulates three to four times more waste than the average person living in a developing country.
- The total recycling rate in Switzerland exceeds 50%. However, due to high volumes of MSW, more separation and recycling is needed.
- Textile waste (4%) was the ninth largest component of disposed trash in 2012, amounting to 66'000 tonnes. Due to the overall impact of the textile industry and amount of waste, it would be environmentally and economically wise to increase the textile recycling rate.

2. TEXTILE INDUSTRY IMPACT

Today, textile and clothing industries are worth \$3 trillion (Conca, 2015). Western countries are considered to be extremely lucrative markets for them. In 2014, Swiss textile and garment imports added up to \$8.5 billion, based on 313'813 tonnes.

In Switzerland, textile imports normally come from EU countries and Asia. In 2014, highest import rates were from Germany, France, Austria, Belgium and Turkey. Additionally, with a market share of 48.1% Asia is an important textile supplier and from year to year its share grows.

Today, the largest Asian suppliers are Vietnam, China and India (Swiss textile, 2014). In EU countries there are regulations and requirements for production and social standards, however in Asia those are much weaker and frequently ignored. Consequently, the textile industry is a big polluter that cause tremendous environmental impact and often involves ethical issues (Eco watch, 2015).

Hence, this chapter gives an overview of the textile and clothing industries today, examines various impacts it causes and gives a future outlook.

2.1. TEXTILE AND CLOTHING INDUSTRY TODAY

Today, fashion is the biggest market for the textile industry. Since 1990, with textile companies seeking new ways to increase profits, the fast fashion industry took off. Furthermore, globalization allowed brands to shift their production facilities to developing countries, where labour and operating costs are remarkably lower. As a result, today, inexpensive and fashionable clothes are in high demand. (Ethical fashion forum, n.p.).

Furthermore, the rapid change of fashion trends happens due to a popularisation of fashion weeks. Styles and designs are quickly adopted by apparel companies and delivered to the mass consumer at lower prices. Such, owning 1'670 stores around the globe, fast fashion leader in garment retailing Zara delivers new lines to each store twice a week, resulting in 10'000 new fashion designs per year (Petro , 2012).

However, in order to deliver quickly and at low prices, an optimized supply chain is extremely important for fast fashion clothing retailers. Most garments are being manufactured in developing countries at poorly operated factories where workers are put under extreme pressure in order to optimize production. (Ethical fashion forum, n.p.)

Additionally, use of pesticides, toxic dyes and heavy consumption of natural resources, as well as logistics and waste accumulation are considerable issues of textile and apparel industries. (Eco watch, 2015)

2.1.1 TEXTILE INDUSTRY AND LABOUR

“Fast isn't free – someone somewhere is paying” (Ethical fashion forum, n.p.).

Textile industries continue to be vital for the economy of many Asian countries, and competition between them is constantly increasing. Furthermore, due to large volumes and high production speed demands, manufacturers put workers under great pressure.

For instance, as much as 80 % of the exported products from Bangladesh is clothing. The country is considered to be the cheapest place to manufacture garments. Low cost garments come at the expense of employees at the production site who experience the harshest working conditions in unsafe

facilities, with long hours and low wages. For example, an average Bangladeshi apparel worker earns the lowest wage in the world of about \$43 a month, while the Chinese equivalent worker earns from \$117 to \$147 (Bust, 2014). Although wages vary among Asian countries, in any case they stay low. Additionally, child labour is a big problem with children having to work, often till late in the night along with other workers (Ryan, 2015).

Even though the situation is far from perfect, it is getting better. After a series of accidents at production facilities where H&M manufactures its garments, the company was accused of neglecting social responsibility over sexual abuse, poor working conditions, use of child labour, low wages and long working hours. Such social pressure has pushed the organization to initiate a range of improvements for the workers. (Ryan, 2015)

2.1.2 TEXTILE INDUSTRY AND ENERGY CONSUMPTION

Today, petroleum cost is at historical lows, therefore companies have an opportunity to deliver products at lower prices. The amount of energy required to produce fibers varies from one to another, however there is not a great difference. Moreover, facilities in the textile industry are often obsolete and have low energy efficiency. Considerable amounts of fossil fuels are needed to power production, as well as to create the chemicals needed for textile production. In order to produce one meter of textile, 0.07 gallons of petroleum is required, which is equivalent to 0.45-0.55 kWh of electrical energy. This amount of energy would be enough to run a refrigerator for as much as half a day. (O ecotextiles, 2009)

According to experts, another issue the textile industry is blamed for is a 10% of the overall contribution of carbon dioxide (CO₂) worldwide. Accumulation of greenhouse gasses in the atmosphere causes global warming. This gas is released from the burning of fossil fuels used in production facilities and logistics. Additionally, in the end of the life cycle whether the textile product is incinerated, or left in a landfill, it can release additional CO₂ into atmosphere. (O ecotextiles, 2009)

2.1.3 TEXTILE INDUSTRY AND HEALTH

Among approximately 8000 chemicals that are used in the textile production today, many of them are proven to be harmful to human health. Firstly, the majority of workers dealing with cotton are exposed directly to large amounts of pesticide, used during cultivation. Secondly, many of these chemicals stay in fabrics until after several washings. As a result, ingesting or breathing of some, commonly used chemicals can cause endocrine and immune system disruption. (O ecotextiles, 2009) Additionally, according to Green Peace, the increasing number of breast cancer incidents in Europe could be contributed to by the chemicals contained in clothes. (n.p.)

2.1.4 WASTE ACCUMULATION

Each year, more than 150 billion apparel products are produced worldwide. This amount is enough for each person on the planet to have 20 new garments yearly (Conca, 2015). As a result, the market is flooded with garments, pushing prices down. Consequently, apparels lose value and are meant to be of short-term use. Nevertheless, the clothing is only a part of the textile market. In Switzerland, the average citizen accumulates around 18 kg of textile waste per year, whereas 10 kg of this amount

is clothes. Furthermore, from the total amount 6 kg are being recycled. (Kanton Basel Stadt, n.p.)

2.2. TEXTILE INDUSTRY OUTLOOK

By 2050 it is predicted that the population of Earth will reach 9 billion people. For the textile and clothing companies in general this means that demand for garments is only going to increase. On the other hand, the increasing scarcity of natural resources vital in cultivating, as well as in the manufacturing processes, will certainly have a big impact on supply chains. As a result, it is highly questionable if it will still be possible to deliver as cheap and fast textile products to the market as it is today. (Convigton, 2014)

2.2.1 FRESH WATER SCARCITY

Only 2.5% of all water on Earth is fresh water and humanity only has an access to 0.01%. Of this amount 8% is used for household needs, 22% for industrial purposes and 70% for irrigation.

In the textile industry, cotton, being one of the most usable natural fibers with a share of 40%, requires enormous amount of water to be cultivated. (Ravasio, 2012) For example, to produce 1 kg of cotton material for one t-shirt and a pair of jeans, requires around 30' 000 litres of fresh water. Furthermore, 73% of all cotton comes from artificially irrigated areas. (WWF global, c2016)

Nonetheless, the cotton issue is only one side of the problem. To turn raw material into textiles and dye it, requires 3000 synthetic chemicals that are then partly released into fresh water, causing approximately 20% of global industrial water pollution. (Ravasio, 2012)

Additionally, already today more than 2 billion people in 40 countries are at risk of not having enough fresh water. Experts predict that by 2050 there will be a fresh water crisis. At the same time, the population of the planet is rapidly expanding, what means that fresh water demand will continue to rise for both human consumption, as well as for industrial use. But as fresh water is scarce, as well as a basic element that humanity neither can live without, nor substitute, in the future there will be an increasing pressure on the fresh water supply. (Sigrist et al, 2008)

2.2.2 PETROLEUM SCARCITY

The peak oil is expected at the latest by 2020. (World crisis, n.p.) "Peak oil refers to the point in time when the maximum rate of global petroleum extraction is reached, after which the rate of oil production enters terminal decline." (Wikipedia, n.p.)

Furthermore, petroleum industry expert Kenneth S. Deffeyes predicts that oil post-peak production decline will lead to a noticeable increase in the prices of fossil fuels, which will have a big impact across many industries and the world economy in general (World crisis, n.p.).

Moreover, for the textile industry polyester is the second important fibre after cotton. To produce this fibre, 70 million barrels of petroleum are consumed per year. As such, the textile industry will be heavily impacted by peak oil consequences (Conca, 2015). Additionally, as oil prices increase, logistics will become more expensive. All in all, with higher prices for fibre production and manufacturing, as well as logistics it will not be possible to deliver textile and fashion products to the market as inexpensively and fast today.

2.2.3 LAND SCARCITY

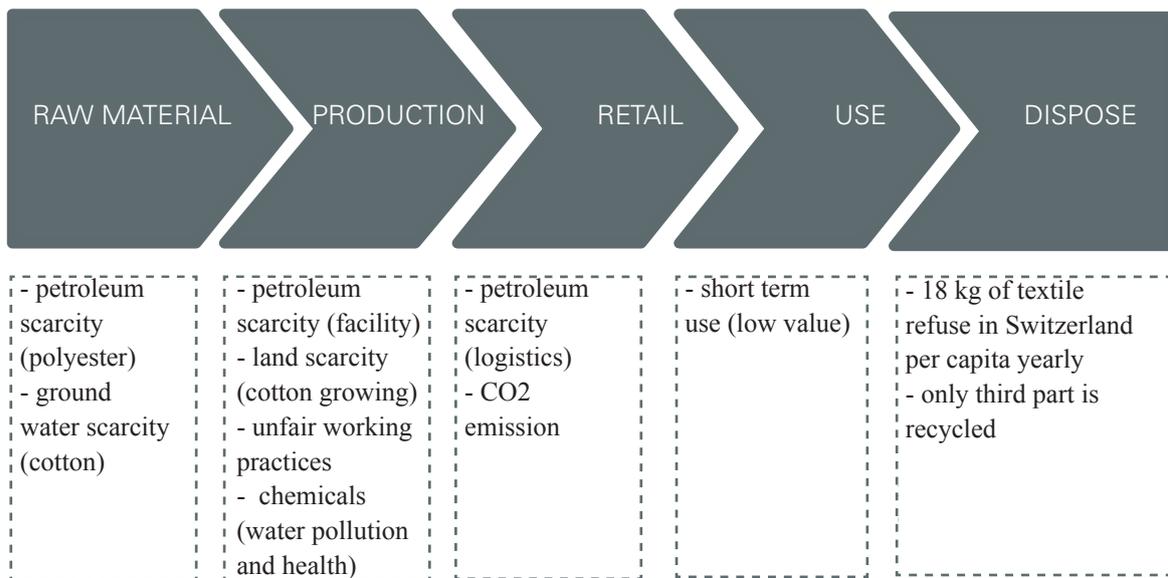
Due to the growth of the world population, large land use conversion is predicted. Therefore, more people will require space for living and food production as the first priority. Already today, around 30% of the global land area is agriculturally degraded. Each year there is a loss of about 10 million hectares, while agricultural productivity rises considerably. Therefore, agricultural producers constantly move to areas with productive land. On the other hand, massive urban expansion keep occupying large areas that could be used for growing crops. (Food and agriculture organization of united nations [FAO], n.p.)

All in all, the textile industry, heavily based on cotton fibre, will be in heavy competition for a more and more limited supply of land.

2.3. KEY FINDINGS CHAPTER 2

The following Figure 4 represents key findings from the Chapter 2. A life cycle of textile product is taken as a basis to visualize identified impacts through each stage.

Figure 4. Textile life cycle and impact. (Kolosova, 2016)



- Considering all the environmental and social issues the textile industry causes, it is important to ensure that old clothing does not simply end up in the trash bin after a short term use.

3. TEXTILE WASTE MANAGEMENT

“Waste is just raw material at the wrong place.” - Peter Baccini

Approximately 144’000 tonnes of textile waste are generated in Switzerland yearly. Considering the impact (Chapter 2) and large volumes of discards, efficient waste management is vital. Moreover, according to Professor Baccini, an expert in resource and waste technologies, waste is a resource that can be used wisely (Tellenbach , 2012).

Therefore, Chapter 3 reviews the current textile waste management and utilization methods, as well as technological advancements in textile recycling. Additionally, the chapter examines collection companies in Switzerland.

3.1 WHAT HAPPENS TO UNWANTED TEXTILES IN SWITZERLAND

Figure 5 gives an overview on what is done with unwanted textiles in Switzerland. Additionally, the presented utilization method insights were derived from an online survey conducted by the author of this work (see Chapter 4).

Figure 5. Unwanted textile utilization methods. (Kolossova, 2016)



Along with the disposal method, information on what type of recycling this method is referred to, is included.

Such, William McDonough and Michael Braungart in their book *Cradle to Cradle: Remaking the Way We Make Things* distinguish two types of recycling: up-cycling and down-cycling. “Up-cycling is designed to work in opposition to consumer culture, encouraging people to think of new and innovative ways to use things, instead of simply buying new consumer goods.” (2002) Up-cycling reflects a concept of a closed-loop cycle or cradle to cradle approach, where one product

is turned into another product of equal or higher value (I:Co, n.p.). According to Figure 5, to give away, swap, sell and donate could be referred to as up-cycling, as the pieces in good quality could be worn numerous more times.

Down-cycling is considered to be less beneficial than up-cycling, but better than incineration. After down-cycling, materials eventually end up in incinerator, as this is a process of converting waste into low-value raw material with single use possibility. (McDonough & Braungart, 2002, p.102)

Such, listed in Figure 5 under “used” methods are referred to down-cycling. Even though “rede-

signed” method is referred to as down-cycling according to the Figure 5, it could also be referred to as up-cycling, depending on the quality and purpose of the derived piece.

Furthermore, “donated” textiles could undergo both types of recycling, as well as eventual incineration. Accordingly, if the pieces are good enough to be worn again, it is considered to be up-cycling. And pieces in bad condition may be down-cycled into cleaning rags. Heavily soiled textiles are incinerated for energy production in Switzerland.

3.2 TECHNOLOGICAL ADVANCEMENTS IN TEXTILE RECYCLING

The recycling process consists of three main stages: collection, sorting and processing. Mainly, all stages could be automatized in order to achieve efficiency.

3.2.1 COLLECTION

The most popular textile collection method today is collecting in containers. It can be either outdoors or in-store. Traditionally, outside containers are solid metal boxes with mechanical spring-assisted loading chute that blocks access to the deposited textiles. In-store containers are usually mid-sized boxes with open access.

According to Smartbin, an American electronic engineering company, widely scattered textile collectors can create high logistics costs, as it is not clear how full the container is and therefore whether it is time to empty. Thereby, the company developed a smart system that increases efficiency in maintaining collectors. Attached to each container are Ultrasonic Level Sensors (UBi), showing how full each container is, allowing for analysis of the most efficient route to the driver. Thus, applying this system, companies can reduce logistic costs as well as carbon footprint. (Smartbin, n.p.)

The German textile collecting company I:Collect (I:Co) has implemented a smart in-store textile container I:counter. This container prints a discount voucher after the textiles or shoes were deposited. The container does not need any assistance, unless to be emptied. (I:Co, 2013)

All in all, applying smart systems can reduce costs and footprint, and at the same time increase efficiency.

3.2.2 SORTING

After collection, the textiles are normally sorted according to various criteria. Most important are quality, type and seasonality. Articles in good condition are separated for second hand retailing and the rest undergoes down-cycling procedures. Sorting is usually done by trained workers.

Today, there are supporting technologies that can help speed up the sorting process. For example, voice control systems allow delivery of the textile pieces by conveyor belt to the required spot. It works by using a device worn around the employee’s neck that translates voice commands into instructions that the machine uses to correctly sort an item. This technology supports faster and higher quality separation of textiles. (Texaid, n.p.)

Recently scientists from Glasgow built a robot to sort textile products. Two built-in cameras and sensitive grippers can recognize texture and colour. Although the robot seems to be a smart solution for the textile sorting, it is not able to check quality. This would be important for companies that make most of their proceeds from second hand retailing. (The independent, 2015)

In Nordic countries, before the processing stage, there is a second loop of sorting. Thus, textiles un-

dergo the colour sorting, helping to avoid further re-dyeing (Palm & Elander, et al. 2014). For that, an automated system was developed that allows sorting of textiles based on fibre type and colour, using optical and pressed air technology. Optionally, the feeding system could be manual, or fully automated and capable to process as much as one piece per second. The disadvantage of this system is its inability to recognize the quality of the pieces, which is crucial for second hand retailing. (Valvan Baling Systems, 2015)

In general, sorting could possibly be automated. However, in order to make a qualitative evaluation human involvement is still necessary.

3.2.3 PROCESSING

After good clothes are separated for second hand shops, the rest is shredded (cotton) or melted (synthetic). Heavily soiled pieces are incinerated.

Furthermore, cotton products, after shredding are spun into insulation or pressed into filling material. Sometimes, before this the fibers are cleaned of dust. All these steps are normally accomplished by automated systems that are energy efficient, however loss in quality and quantity is still present. To tackle this problem, the Japanese company Teijin has developed a technology that up-cycles synthetic fibers. However, in order to achieve the original quality, virgin polyester must be added to the process. Nonetheless, this technology helps to lower petroleum consumption considerably. (Braw, 2014) Additionally, Scientists at Stockholm's Royal Institute of Technology developed a process that can derive rayon from cotton fibre. The cotton based textiles are shredded into pulp, and then broken into molecules for fibre production. Responsible for this project, business development manager Henrik Norlin admits "We can recycle fabrics that contain a mix of cotton and other materials but get the best results when recycling pure cotton." This technology has a high potential to separate not only various blended fibers, but also dyes from fibers, which in turn could be a potential solution to avoid incineration of heavily soiled textiles. (Braw, 2014)

3.3 TEXTILE COLLECTING COMPANIES IN SWITZERLAND

Today, there are three organizations in Switzerland that collect old textiles and shoes. Two of them, Texaid and Tell-TEX, are the members of the SR organization while I:Co is a subsidiary of the German company Soex group. All organizations are financially self-sustaining and support various social projects. The presence of three autonomous organizations dealing with old textiles and shoes suggests that Switzerland is an attractive market for this sort of business. According to public relations speaker in Texaid Lilly Sulzbacher, 1 kg of old textiles from Switzerland has a market value of 0.8 EUR, in contrast for example, to clothing from Czech Republic which has a market price as low as 0.2 EUR per kg (Personal communication, 2016).

3.3.1 TEXAID

Texaid is a textile and shoe collecting service company. It belongs to Textilverwertungs-AG and is based in canton Uri with 150 employees. The organization aims to give old textiles and shoes a second life in order to preserve natural resource consumption and to reduce negative environmental impact. Additionally, transparency and open communication are of a great importance for the company. This could be seen in face-to-face communication with the Texaid's public speaker.

Texaid has branches in Germany, Bulgaria, Hungary and Morocco and became a market leader in Switzerland with a 70% market share by acquiring Contex AG, which was a strong textile collecting competitor. (Texaid, © 2015)

3.3.1.1 COLLECTION



Figure 6. Outdoor textile collecting container. (Kolossova, 2016)



Figure 7. In-store textile collecting container in Schild. (Kolossova, 2016)

Texaid collects textiles by using both outdoor and in-store containers. There are 6'000 outdoor containers with a mechanical spring-assisted loading chute, placed all over the country (see Figure 6). These outdoor containers can be placed free of charge. In cooperation with the main partners like Schild, SportXX and Charles Vögele, Texaid also has numerous collecting points in over 100 stores (see Figure 7). In-store placement is usually paid by Texaid. Moreover, by depositing textiles in one of the partner's stores, the donator can receive a voucher for a CHF 10 discount. (Texaid, 2015) Very recently, Texaid cancelled the "Revant" in-store interactive rewarding program, that was based on a lottery principle. Public relations speaker Lilly Sulzbacher explained that this program was not successful, used a lot of financial resources and its name "Revant" had nothing to do with Texaid. At the moment, the in-store collecting program is named after Texaid and offers only the discount incentive. (Personal Communication, 2016)

Additionally, according to the requirement list published on the company's website, only clean and still wearable textiles and shoes are to be collected (see figure 8). Collection is made by their own logistic facilities with the help of a smart system, developed in-house. The driver records the level of fullness of the containers when emptying. Thus, the system makes analysis based on those recordings and suggests which containers should be emptied next. By contrast, in-store containers are simply emptied on a weekly basis.

According to Lilly Sulzbacher, the vast majority of textiles come from outdoor collectors.

We collect:

- Clean women's, men's and children's clothes
- Leather clothing and furs
- Clean, still wearable shoes (bundled in pairs)
- Clean table, bed and household linen
- Clean underwear and socks
- Belts and bags
- Down quilts and cushions

We do not collect:

- Non-textile materials
- Heavily soiled clothes or home textiles
- Textile waste, textile off-cuts
- Mattresses, seat cushions, carpets, insulating materials
- Ski boots, ice skates, inline skates, rubber boots
- Odd shoes

Figure 8. A screen-shot of a requirement list. (Texaid, n.p)



Figure 9. Plastic bag collector at Charles Vögele. (Kolosova, 2016)

3.3.1.2 SORTING

After the textiles are collected they are brought to the Texaid sorting facility. With the help of a voice control system, around 4'000 tonnes out of 35'000 tonnes were sorted in Switzerland in 2014. The rest goes to their facilities in Morocco, Hungary, or Germany or is sold to other textile recycling companies. This low percentage of textile sorting in Switzerland is due to relatively high operating costs and strong currency. Nonetheless, at operation facilities abroad, Texaid offers its employees relatively high salaries and good social conditions.

Moreover, around 65% of collected textiles in Switzerland are up-cycled and can be sold in their own second hand shops around Europe and in third world countries. A part of still wearable clothes is given to Caritas, Red Cross, Heks Eper, Solidar and other charity partners.

In Switzerland, Texaid sells clothes from expensive brands on www.ricardo.ch. Due to a high demand for expensive brands in Switzerland, the interest in average second hand clothes is very low. Currently, Texaid is developing an online second hand shop in Germany.

30% of the collected textiles are down-cycled at their own facilities, but not in Switzerland. Half of this amount is used in manufacturing of cleaning rags and the other half is shredded to become insulation or filling material. Around 3% are heavily soiled textiles or other products that are not suitable for any type of recycling. This waste is incinerated at the cost of the company. (Personal communication, Lilly Sulzbacher, 2016)

3.3.1.3 KEY FINDINGS TEXAID

- Transparency is very present in personal communication.
- For Texaid, in-store collecting is less beneficial than outdoor collecting.
- Texaid has own logistic, collecting and sorting facilities, as well as retailing channels. The company has the capacity to process all types of textiles, but still has requirements.
- Little promotional efforts by using containers and web-page.

3.3.2 TELL -TEX

Tell-Text GmbH is another Swiss company that collects unwanted textile products and shoes. The company was founded in 2011 as a joint venture between two textile collecting companies in Switzerland, SoliTex and Satex (Textilkoordination, n.p.). Today, being a member of SR organisation, Tell-Text aims to:

1. increase value for the Swiss economy,
2. support Swiss non-profit organizations,
3. maintain ecological and economic sustainability. (Tell-Text, n.p.)

Tell-Text supports three non-profit organizations in Switzerland: Swiss Mountain Aid, Pestalozzi Children's Foundation and the Swiss Association of Paralyzed. In 2014, three million Swiss Francs were donated to those organizations, which was 10% more than 2013. Based in Safenwil, Tell-Text employs 70 people.

3.3.2.1 COLLECTION

In 2014 the amount of textiles collected by Tell-Text reached 15'000 tonnes, which is half of the amount of Texaid's collection. (Tell-text, n.p.) The company collects old textiles and shoes in bags left outside from each household and from outdoor containers. Household street collection takes place on specific dates that vary between cantons. Information about collection dates is published on their website as well as in cantonal calendars that are delivered to each household yearly. For example, in bigger cities like Zurich textiles and shoes are collected around four times per year, while in smaller cities the collection takes place only once a year.



Figure 10. Plastic bag for street collection, Tell-Text. (Kolossova, 2016)

For street collection, plastic bags are distributed regularly to each household in 20 cities, and then collected right from the street (see Figure 10). Additionally, plastic bags contain information in German on the next collection date, proceeds beneficiary organizations and requirements for the textiles that are similar to Texaid's (see Figure 8, p.14).

In addition, 3000 sustainably manufactured containers are placed around Switzerland, and the company considers suggestions for locations to place additional containers (Tell-Text, n.p.). Information about current container locations can only be obtained through con-

What we collect:

- Women's, men's and children clothes
- Leatherwear and furs
- bundled shoes in pairs
- Linen, bathroom towels, bed linen
- Underwear, socks
- Bags and belts
- Down Bedding

Figure 11. A screen-shot of the quality requirements from www.tell-text.ch. (n.p)

tacting the company directly. On the website the company does not provide any requirements about the quality or condition of the collected textiles, they simply have to be relevant to the listed product category (see Figure 11). However, the requirement list on the bag does include quality requirements.

3.3.2.2 SORTING

After collecting, textiles and shoes are transported to an own sorting facility by own logistics. Then the collected material is cleaned of alien materials before it can be shipped to customers. Only a small amount of the collected discards are sorted in Switzerland to provide Swiss citizens from mountainous parts of the country with free clothing. Out of the total amount of textile pieces sorted in Switzerland, 65% are in good enough condition to be worn again, around 30% are recycled and approximately 3%, which are mostly alien pieces, are incinerated. (Tell-Text, n.p.)

In general, Tell-Text focuses specifically on collecting and preparing the collected goods to ship to customers. The delivery can be either made by a partner company in Switzerland or by customer's own facility. The majority of customers are from Europe, the most important client is a German company that produces rags and sells them to car cleaning companies. (Personal communication, Kimberly Salzmänn, 2016)

3.3.2.3 KEY FINDINGS TELL - TEX

- The published information is superficial and does not describe what exactly happens to the collected textiles and shoes and what exactly is meant by recycling. However, a clear statement where proceeds from donations go to makes a better impression and supports trust to organization.
- Through personal communication with Kimberly Salzmänn it was possible to find some data about textile sorting, however the amount of information was minimal and deficient.
- In the annual report published on the company's web page, it is mentioned that Tell-Text supports educative programs about textile recycling in Swiss schools for children and teenagers. By further research nothing else could be found relating to this statement, therefore it seems questionable.
- The company does not offer a reward system.
- The collection schedule list is limited to a maximum of four dates. Additionally, the container locations could be found only by direct contact.
- On the plastic bag delivered to households, the requirement list towards collected items is more extensive than the one published on the website. Differing information can be confusing.
- Street collection is not the most efficient collection method, as it requires more fuel compared to container service. It also creates a larger carbon footprint (Personal communication, Lilly Sulzbacher, 2016).

3.3.3 I:COLLECT

I:Co is a textile collecting company and subsidiary of the German textile recycling organization Soex group. The company has the ultimate goal to reach zero textile and shoe waste by 2020. Therefore, together with big garment manufacturers like H&M, I:Co participates actively in research about closed loop textile and shoe production, as well as up-cycling.

The company works also closely together with the Environmental Protection Encouragement Agency (EPEA) in Hamburg and received a Cradle to Cradle Innovator Award for “*leadership in material re-utilization and forward-looking spirit*”. (Personal communication, Albin Kälin, 2016)

Moreover, I:Co is very present on social online platforms like Facebook or Twitter with posts about internal events and achievements, as well as global news in the recycling field.

Additionally, with the proceeds from business activities around old textiles and shoes, I:Co organized the “Charity Star” contest. Different social projects can participate in competition for financial sponsorship and the one with the most votes gets funding from the company. Another contest founded by the organization, based on the crowd sourcing principle, seeks innovative ideas for up-cycling textiles and shoes. (I:Co, 2016)

3.3.3.1 COLLECTION



By partnering with both smaller and global players in the garment retail industry I:Co has managed to place its in-store collectors all over the world, including Switzerland. With the main partners H&M, Vögele Shoes, Mammut and Intimissimi, I:Co has its collectors in more than 500 stores in Switzerland. Since 2013, 1.6 tonnes of textiles were collected by H&M stores in Switzerland and 23’000 tonnes around the world. Any kind of unwanted textiles and shoes can be deposited and is rewarded with a discount voucher for the next purchase. Moreover, the organization provides each partner with either an automatic container (Figure 12) or a simple cardboard container, called “display container” (Figure 13). The I:counter automatic container issues a discount voucher for the next purchase, after the deposit was made. The I:Co’s display containers are placed traditionally around checkout, where discount vouchers are issued by staff. (I:Co, 2016)

Figure 12. I:counter. (I:Co, n.p.)



Figure 13. I:Co display collectors and discount vouchers at H&M and Vögele Shoes stores. (Kolossova, 2016)

3.3.3.2 SORTING

After being collected, textiles and shoes are sent to sorting facilities in Germany. There, depending on the condition, goods are sorted according to the same principle as described within Texaid. In addition, the company published recycling rates similar to Texaid's rates.

In general, as stated by I:Co 150 million tonnes of textiles and footwear are sold in second hand shops yearly. Additionally, already today the company practices up-cycling of old textiles to receive new fibres for production of new clothing. Even though the company managed to keep only 20% of fibres after recycling with no loss in quality. This is already a big achievement and is an initial but solid step in textile up-cycling (I:Co, 2016)

3.3.3.3 KEY FINDINGS I:COLLECT

- The company uses social online platforms to raise awareness and educate the public about company's achievements, policies, as well as about textile industry and sustainability issues.
- The company shows an innovative spirit and engages with public, through social and crowd sourcing projects.
- The company collects clothing only by in-store collectors and offers electronic or display collectors, according to the partner's preference.
- In H&M stores, I:Co is not mentioned, which gives the impression that H&M does all recycling activities on its own. Such, it could be concluded that the company often stands behind the partner brands, giving them an opportunity to enhance the reputation.
- The company has own sorting, recycling and production facilities, which results in better control and flexibility. Furthermore, partnership with EPEA contributes to a good reputation.
- The transparency is not a strong side of the company. Setting up a personal contact or find vital information is difficult. Obtained data is still deficient.

3.4 KEY FINDINGS CHAPTER 3

- The market cost for old textiles from Switzerland is higher than in other European countries.
- All three textile collecting companies have similar sorting processes as well as statistics: second hand retailing 65%; cleaning rags, insulation and filling around 30%.
- All three companies have slightly different collecting systems. Tell-Tex collects mostly by street collection with no reward; Texaid collects by outdoor and in-store collectors. Within in-store collection, the reward is a discount voucher; I:Co collects only by in store collectors and rewards with a discount.
- Only I:Co collects all textiles, with no requirements for quality and type.
- Tell-Tex does minimal sorting to support Swiss population with free clothing.
- Texaid has own infrastructure. However, due to high operational costs in Switzerland and a strong currency, only a small percentage of collected textiles are sorted by Texaid in the country. Outdoor containers collect the majority of unwanted textiles.
- With Soex group's own facilities, capacity and expertise there is a lot of room for saving costs as well as for innovation in textile recycling.
- Swiss textile collecting companies have a minimal promotion by only using their containers and website.
- A clear statement where proceeds from donations go to, makes a better impression and builds trust to textile collecting companies.

4. USER INSIGHTS

In order to gain user insights into textile recycling the author of this work conducted an online survey and face-to-face interviews. The purpose of this part of the study was to answer the following questions:

1. *What can happen to unwanted textiles in Switzerland?*
2. *Do citizens follow the quality requirements from textile collecting companies?*
3. *What incentives can motivate Swiss citizens to recycle more?*
4. *What are the possible inconveniences in textile recycling experience?*

Thereby, the following chapter reviews the findings made during the ethnographic research part of this thesis.

4.1 ONLINE QUESTIONNAIRE

The online survey was conducted in English language and consists of 10 questions that were answered by 100 Swiss residents (see full transcript in Appendix, *Online Questionnaire*, p. 44). It was distributed among students of the Design and Art department of Lucerne University of Applied Sciences and Arts and other Swiss residents by e-mail and Facebook. Furthermore, it was made sure that the survey would be answered by Swiss citizens and expatriates who live in Switzerland.

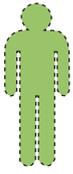
The survey began with general questions and continued with ones that allowed to get a closer insight about user textile recycling experience. All questions regarding recycling experience allowed multiple choice answers. Additionally, a comment section was added to each question to let participants express themselves.

4.1.1 KEY FINDINGS ONLINE QUESTIONNAIRE

- 60 out of 90 participants separate textiles according to the quality requirements. The unfitted pieces end up in trash.
- The average amount of discarded textile pieces is around 4-5 pieces per person yearly. It is mostly old underwear, socks and damaged pieces.
- The majority of people want to know how their donation is used.
- There is a lack of awareness about the recycling systems as well as what recycling is.
- Within street collecting, it seems that people experience inconvenience with dates.
- People would like to have a choice where to donate, however it is not practicable.
- The survey has shown that people perceive their old textiles as a donation rather than waste.

4.2. INTERVIEWS

The second part of the ethnographic research were interviews with Swiss residents of different age groups and nationalities.



Arthur, is a 59 year old American. He lives in Zurich and 6 years in total in Switzerland. He works in a bank as a team leader and does not speak German. Arthur was chosen for the interview to get a closer insight into how a well-educated expatriate, orients himself within textile recycling in the country.



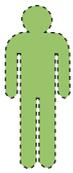
Sumalee, is a 46 year old Thai. She lives in Zurich and 5 years in total in Switzerland. She works as a householder. Sumalee was chosen for the interview to get a closer insight into how an expatriate that does not speak German orients herself within textile recycling in the country.



Eireen, is a 26 year old Swiss, who studies and lives in Zurich. She is single and has no children. Eireen was chosen for the interview as she purchases textile products mostly in second hand shops. Moreover, it was important to gain an insight on how a Swiss citizen orients herself within textile recycling in her own country.



Anastasia, is a 38 year old Russian. She lives in Meilen and 4 years in total in Switzerland. She is married and has two children, at the moment she is a housewife. Anastasia was chosen for the interview to get a closer insight into how a mother of two kids, who speaks fluently German, orients herself within textile recycling in the country. Furthermore, it was important to get insights from a family with kids, as the textile waste accumulation is much higher than in families with no children.



Oliver, is a 24 year old Swiss. He studies and lives in Zurich. He is single and does not have children. Oliver, was chosen for the interview to get a closer insight into how a young student, who is actively involved in social projects and is environmentally conscious, orients himself within textile recycling in his own country.

All five participants were asked the same 9 questions. Each interview had the form of an open conversation and lasted approximately 30 minutes (see full transcript in Appendix, *User Insight Into Textile Recycling Interviews*, p.53) The important insights from the interview session will be discussed in Chapter 5 *Proposal Requirements*.

4.2.1 KEY FINDINGS INTERVIEWS

- In the interviews neither Swiss, nor expatriates had an idea of how textile recycling works in Switzerland.
- There was no knowledge about collecting companies and what happens to textiles afterwards identified.
- For most of interviewed people, the street collecting is not a comfortable way to donate textiles, due to fixed and rare dates of collection.
- None of the interviewee has time to invest into investigating what textile recycling is all about and how it works.
- At the time of interview, all had a certain amount of textiles to donate.
- All the interviewee throw damaged and dirty pieces into trash.
- The quality requirement list appears to be confusing, preventing donators from recycling their old textiles.

5. PROPOSAL REQUIREMENTS

Due to natural resource and land scarcity in the future, prices for cotton and synthetic materials will rise considerably. For the clothing industry it will not be possible anymore to keep costs as low as nowadays. Consequently, to keep textiles in life cycle longer will be economically beneficial (Handelszeitung, 2016). Therefore, demand for textile collection and recycling will rise. Higher prices due to higher costs will also increase the value for clothing perceived by the consumer. Clothes will be bought less frequently and kept longer. Textile collecting companies will receive less donations and Textile recycling companies therefore less input.

Figure 14 shows the relationship between generated and collected textile waste in Switzerland. The figure illustrates the expected decrease of textile waste by 2020, what consequently lowers the collected amount as well. This will lead to a higher competition in the field of collection and recycling.

Due to the fact that only a third of generated textiles is collected in Switzerland, there is a big potential to collect more. Considering future increase in textile costs and prices, even recycling of old underwear and socks could be profitable, as it is often made with the use of cotton and polyester. Some textile recycling companies, like I:Co for example, already realized the potential of every single textile piece, whether it is in good condition or not. They do not have any requirements towards collected textiles.

All in all, considering future trends, companies should start to encourage and educate Swiss residents to recycle more textiles already today.

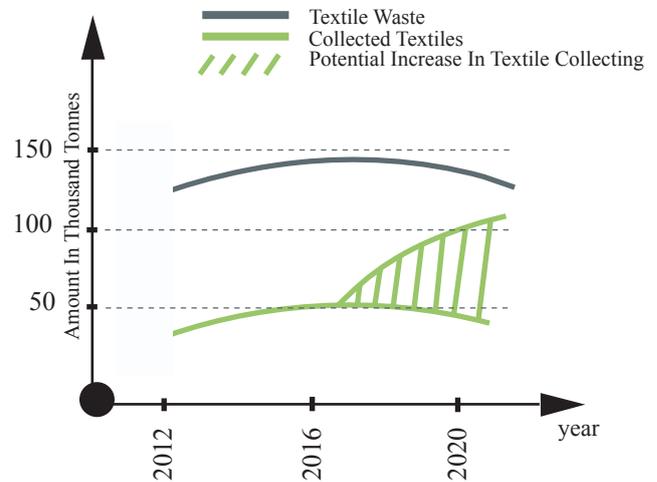


Figure 14. Potential increase in textile collecting rate in Switzerland. (Kolosova, 2016)

5.1 REQUIREMENTS DEVELOPMENT

Based on the key findings from the desk and ethnographic research, the insights were generated and translated into requirements. The insights are the extractions from the desk research findings, interviews and the online questionnaire.

As a result, five requirements were grouped into two sets for: Communication Strategy and Business Strategy.

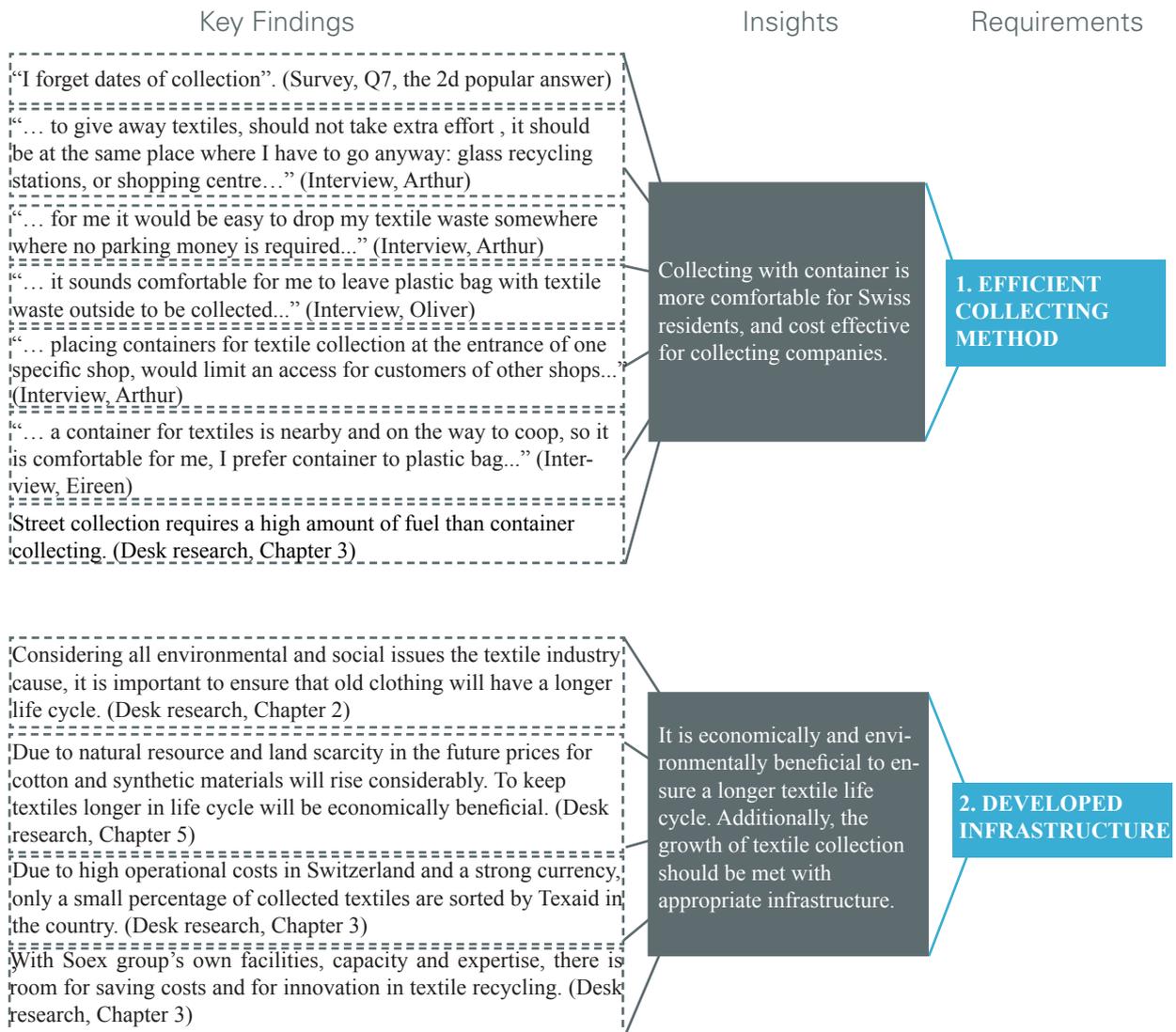
Table 1 shows the formation of Communication Strategy requirements. It consists of three elements: “transparency”, “developing awareness about services” and “environmental and social education”.

Table 1. Communication Strategy requirements development.

Key Findings	Insights	Requirements
<p>“ I don’t know how my donation is used afterwards”(Survey, Q7, the most popular answer)</p> <p>“ I rather give my textiles to someone I know will do the right thing with it “ (Survey, Q7, comment)</p> <p>“ I think my donation is not used for people who really need it (like refugees)” (Survey, Q7, comment)</p> <p>“ Organizations like Texaid do not use all the clothes for purposes I want to support” (Survey, Q7, comment)</p> <p>“... for me it is important to know how it is used afterwards.” (Interview, Anastasia)</p> <p>“It would be interesting to find out where they land”(Survey, Q10, comment)</p> <p>“ The “charity” organization (not all of them are doing charity, it’s just what we think they do...) earns a lot of money with our waste” (Survey, Q5, comment)</p> <p>“Moral satisfaction (from donating) is enough for me” (Survey, Q9, the most popular answer with 80 % rate)</p> <p>The clear statement where proceeds from donations go to, makes a better impression and builds trust with the textile collecting companies. (Desk research, chapter 3)</p>	<p>It is important for textile collecting companies to communicate clearly about what is done with collected textiles and what are the charitable activities.</p>	<p>1. TRANSPARENCY</p>
<p>“I have no idea how and where (about recycling).” (Survey, Q7, 3d popular answer)</p> <p>“ ... we live 4 years in Switzerland, but we are not familiar with textile recycling in the country, and we have no time to investigate...”(Interview, Anastasia)</p> <p>“ ... I would like to give away textiles, which I don’t use anymore, but it is not something obvious for me in Switzerland, so I would have to spend time to investigate...” (Interview, Arthur)</p> <p>“ ... I do not know how the system works...” (Interview, Oliver)</p> <p>“ ... I put my textile waste into white box ...” (Interview, Eireen)</p> <p>“... can I put my textiles in a plastic bag from mail box and land it in a white box?... (Tell-TEX plastic bag and Texaid’s container are meant)” (Interview, Eireen)</p> <p>“ Swiss textile collecting companies do not promote. (Desk research, Chapter 3)</p>	<p>There is a lack of awareness about what one can do with old textiles and what are the Swiss textile collecting companies. This is true for both, Swiss citizens and expatriates who live in Switzerland. Additionally, donors do not have time to investigate about textile recycling.</p>	<p>2. DEVELOPING AWARENESS ABOUT SERVICES</p>
<p>“... I don’t know what recycling means...” (Interview, Sumalee)</p> <p>“I know nothing about recycling” (Survey, Q7, comment)</p> <p>“ Recycle (you get discount coupons from H&M in exchange of old textiles. They use them to make new materials.)” (Survey, Q3, comment)</p> <p>Due to ethical reasons recycling companies should take responsibility to educate citizens about environment and related problems that are faced today. (Desk research, Chapter 2)</p>	<p>The overall impression from surveys and interviews is that people do not know what exactly recycling is and how important it is.</p>	<p>3. ENVIRONMENTAL AND SOCIAL EDUCATION</p>

Table 2 visualizes the process of the Business Strategy requirements formation. It consists of two elements: “efficient collecting method” and “developed infrastructure”.

Table 2. Business Strategy requirements development.



5.2 CRITERIA DEVELOPMENT

After requirements were developed, the design and success criteria were identified to form a proposal for textile collecting companies (Tables 3, 4). Design criteria to each requirement were built based on desk and ethnographic research findings. Success criteria were formed based on the goal of this thesis and each requirement’s contribution to it.

Table 3. Business Strategy criteria development.

Requirements	Design Criteria	Success Criteria
1. EFFICIENT COLLECTING METHOD	<ul style="list-style-type: none"> • fewer, publicly popular points of collection • access for everyone 	<ul style="list-style-type: none"> • Lowering fuel expenses by 20%.
2. DEVELOPED INFRASTRUCTURE	<ul style="list-style-type: none"> • efficient facilities • maximum benefit from collected resources 	<ul style="list-style-type: none"> • Higher profits and donations.

Table 4. Communication Strategy criteria development.

Requirements	Design Criteria	Success Criteria
1. TRANSPARENCY	<ul style="list-style-type: none"> • clear communication of charitable activities 	<ul style="list-style-type: none"> • 30 % contribution into 50% increase of textiles collected by 2020. • Donators have positive a attitude when mentioning textile collecting companies.
2. DEVELOPING AWARENESS ABOUT SERVICES	<ul style="list-style-type: none"> • effortless access to service information • potential to reach large amount of Swiss residents 	<ul style="list-style-type: none"> • 35% contribution into 50% increase of textiles collected by 2020. • High recognition of the company's name and related information (collecting system, etc.).
3. ENVIRONMENTAL AND SOCIAL EDUCATION	<ul style="list-style-type: none"> • effortless access to facts and materials about ecological situation, recycling news, etc. • potential to reach large amount of Swiss residents 	<ul style="list-style-type: none"> • 35 % contribution into 50% increase of textiles collected by 2020. • Swiss residents can name reasons why recycling of textiles is important.

6. IDEATION

After identifying requirements and criteria, a proposal for the textile collecting companies had to be developed. This chapter describes the process of the proposal development based on findings during the research phase.

6.1 BUSINESS STRATEGY GUIDELINES

To cope well with an increase in textiles collection, the “Developed Infrastructure” and “Efficient Collecting Method” requirements were identified.

6.1.1 DEVELOPED INFRASTRUCTURE

To fulfil the requirement two design criteria were identified: “efficient facilities” and “maximum benefit from collected resources”.



EFFICIENT FACILITIES

According to the desk research findings, own infrastructure is beneficial for the textile collecting companies to lower costs and to have higher flexibility. This is especially important in Switzerland, where labour and operational expenses are relatively high. Moreover, donation based textile collecting companies, along with sustaining themselves

financially, ought to support good causes and charity organizations.

In the future, textile donations are predicted to drop. Moreover, the predicted rise in value of old textiles, could attract new market entrants. Thereby, it would be beneficial for Texaid and Tell-TEX to join together in order to achieve higher efficiency rates and get ready for the future. As Texaid is a market leader with an own infrastructure including collecting, sorting, logistics, recycling and channels, it is recommended to join under Texaid’s name. This will increase efficiency and

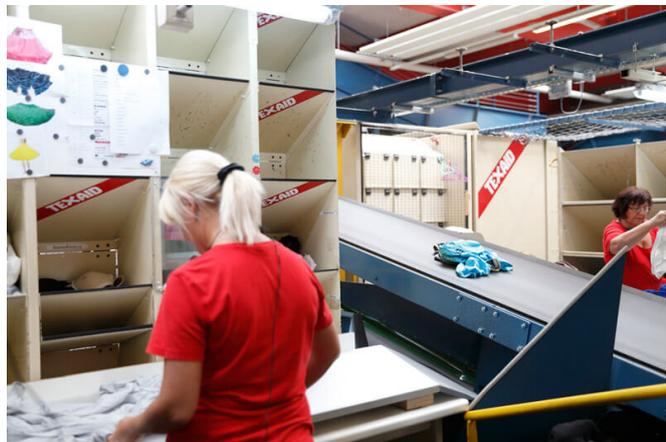


Figure 15. Voice sorting system at Texaid. (Texaid, n.p.)

it is recommended to join under Texaid’s name. The united entity has also more potential for the innovation, instead of competing with each other together companies can solve real problems.

In addition, Tell-TEX’s sorting facilities should be upgraded. The voice sorting system (Figure 15) would allow to sort more textiles with higher efficiency. Another, recommendation is to use the monitoring system for the fullness of containers (UBi sensor system e.g., described in Chapter 3), which will allow to increase efficiency in logistics.

MAXIMUM BENEFIT FROM COLLECTED RESOURCES

One of the key findings from ethnographic research was that quality requirements might be confusing and could build barriers for the donators to recycle their old textiles. Thereby, it is highly recom-

mended to textile collecting companies to not use quality requirements.

Today, the technology is still not developed to recycle efficiently all fibre types. Not all textiles could be recycled and only few can be up-cycled. Therefore, it is important to invest more into textile recycling technologies.

RECOMMENDATION

- Creating of one entity under Texaid's name
- Implementation of additional voice sorting and container monitoring sensor systems.
- Investing into recycling technology development.
- There should be no quality requirements for donated textiles.

6.1.2 EFFICIENT COLLECTING METHOD



The key finding from the ethnographic research was that quality requirements is one of the reasons why 2/3 of textiles end up in trash. Another important finding shows that containers are the most convenient way for Swiss residents to recycle their unwanted clothing. This method responds well both design criteria “fewer, publicly popular points of collection” and “access for everyone”.

FEWER, PUBLICLY POPULAR POINTS OF COLLECTION

According to the criteria, to identify the most suitable spot for placing the textile collector the author of this work asked 102 random people in Zurich and Lucerne the question: “When donating your old textiles would you prefer to use...”:

1. *In-store collectors (shops, shopping mall)*
2. *Outdoor collectors near the place you live*
3. *Outdoor collectors placed around PET / glass recycling points.*

The most popular answer was the third option with the 57%. 32% have chosen the second option, while only 11% voted for “in-store collectors”. According to Lilly Sulzbacher, in-store collectors contribute only around 5% to the total textile collection. (Personal communication, Sulzbacher, 2016).



Figure 16. Textile collector placed at recycling station. (Kolossova, image of container is adopted from Cordes, 2016)

ACCESS FOR EVERYONE

Outdoor collectors placed around PET / glass recycling points are accessible for everyone. Additionally, in cities recycling stations are usually placed in high density, hence this solution could also be suitable for those 32% who voted for the second option.

RECOMMENDATION

- Using recycling stations to place textile collectors. (Figure 16)

6.2 COMMUNICATION STRATEGY GUIDELINES

Within Communication strategy “Transparency”, “Developing Awareness About Service” and “Environmental and Social Education” requirements were identified.

6.2.1 TRANSPARENCY



According to the ethnographic research findings, Swiss residents want to know what happens to the textile donations and they want to support a good cause. Transparency and presence of a good cause is crucial. In order to build trust and sympathy, which will result in a larger amount of donations “a clear communication of charitable activities” design criterion should be addressed.

A CLEAR COMMUNICATION OF CHARITABLE ACTIVITIES

Tell-Tex and Texaid have clearly stated goals that include economical, environmental and social aspects, what is important when communicating with the donors. Moreover, both organizations support different charity organizations which are mentioned on the main touch points with the donors: containers, plastic bags and websites. However, the way how both companies communicate are different. Tell-Tex is very clear and specific about which organization for which cause it supports and how much proceeds were donated, while Texaid displays only supported companies without mentioning any further details. The finding from ethnographic research shows that people distrust the companies as they do not know what happens to the textiles. The common perception is that companies sell clothes in second hand shops with big profits that entirely stay for the company. It could be concluded, that for the textile collecting companies it is very important to be as transparent as possible about how the business with old textiles works and what charity activities are supported by the company.

Figure 17 shows containers from Texaid and Tell-Tex. Texaid’s clean design with a well readable typeface, read/white color scheme and bullet points to display information appears very present and



Figure 17. Comparison of visual language. (Kolosova, 2016)

visible. By contrast, Tell-Text uses pictures of happy people to communicate. Comparing both examples shows that communication with use of imagery could be a good way to evoke emotions. In addition, it communicates a clear statement immediately.

RECOMMENDATION

- Communicating clearly how the whole business with old textiles works and specifically mention the charity activities to build trust between company and donators.
- Using emotion evoking imagery on the main touch points can support the understanding and set emotional connection.

6.2.2 DEVELOPING AWARENESS AND EDUCATION



To find ideas that would fulfil the requirements “Developing Awareness About Services” and “Environmental and Social Education”, a brainstorming session was run. Both requirements have the identical set of criteria: “effortless access to information” and “potential to reach larger amount of Swiss residents”. It was decided to collect ideas first and then to find the best application according to the requirements.

6.2.2.1 BRAINSTORMING SESSION

People of different nationalities including Swiss, Italian, Russian and French took part in the brainstorming session. All participants are Swiss residents and between 29 and 35 years old.

The brainstorming session was divided into three parts: “Introduction”, “Ideation” and “Evaluation”. The “Introduction” part consisted of an informative video about fast fashion and its social and environmental impact. In addition, information about the textile waste situation in Switzerland was given. Afterwards, the first task was to think individually about possible methods and channels to get any information. The collected ideas were then clustered into categories (see images and materials from brainstorming on the attached CD).

In the “Ideation” part the following question was stated:

“Which of the previously identified methods and channels fit best to make anyone familiar with: 1. free textile services and 2. educative information about textile industry and its impacts”.

The ideas for both questions were collected and clustered simultaneously.

During the “Evaluation” part, the ideas were benchmarked against design criteria.

FINDINGS

One of the valuable outcomes of the brainstorming was that the educating aspect coming first, can motivate stronger to recycle than service information alone. Thereby, it was concluded that educative information and service information are more effective when presented together. However, educative information should be eye-catching to attract attention.

Figure 18 represents ideas collected and evaluated during the brainstorming session according to two design criteria: “effortless access to information” and “potential to reach a large amount of Swiss residents” in a range from low to high.

The green top right corner defines qualified ideas where “Garbage bag”, “Textile detergent” and “Adds in public transport” are the highest rated. “Receipt from garment store” and “Handouts in each bag with a garment purchase” were rated lower, but still qualified. Furthermore, event ideas like “Swap event” and channel “Social platforms Facebook and Instagram” are the lowest rated ideas among qualified ideas. Unqualified ideas are not considered in the final proposition.

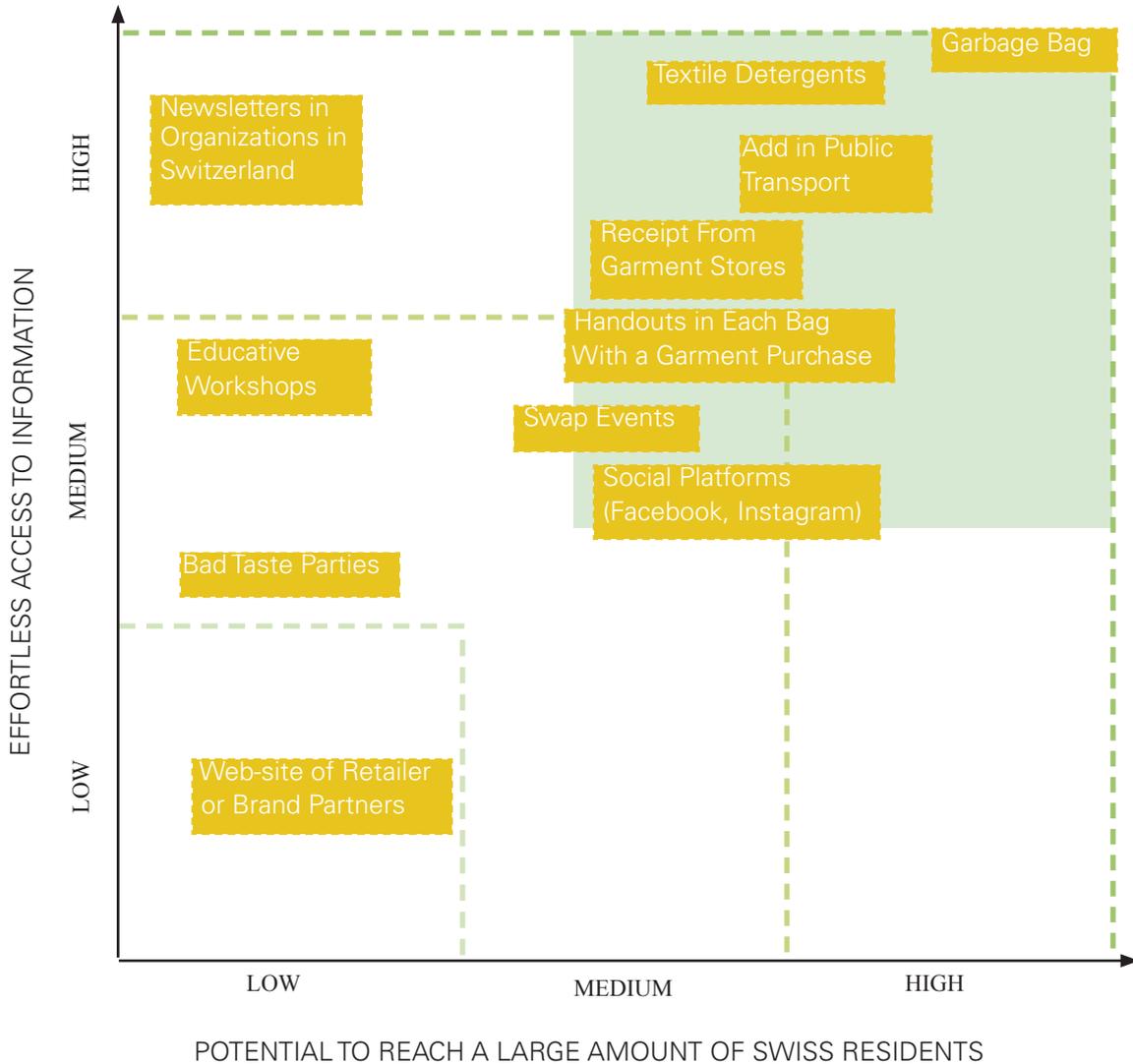


Figure 18. Ideas evaluation. (Kolossova, 2016)

6.2.2.2 COMMUNICATION SYSTEM

The qualified ideas are recommended to be used as a system rather than individual solutions, in order to get a comprehensive communication approach. However, depending on feasibility and costs, company can prioritize one to the other. All ideas could be used on a regular basis, as well as a temporary solution.

SOCIAL PLATFORMS

In addition to the own web page, textile collecting companies should use social platforms for promotional and educative purposes. There are 3.5 million Facebook and 870'000 Instagram users in Switzerland (Internet world stats, 2015). Hence, textile collecting companies should promote via Facebook due to the much higher amount of users.

SWAP EVENTS

Berne Declaration (BD, *Die Erklärung von Bern [EvB]*) is a Swiss non-profit organization that promotes and supports fair relations between Switzerland and developing countries. The organization arranges events called “Walk-in Closet” (see Figure 19) in different cities in Switzerland.



Figure 19. Clothes swap event in Zurich (Walk-in closet, n.p.)

The idea of the event is to promote the exchange of clothes instead of purchasing new ones. Visitors bring ten pieces of clothes and swap them for other clothes. The event takes place around 2-3 times per year. Additionally, Swiss magazine “Annabelle” organizes swaps as well and invites different partners for promotion.

Swap events become more and more popular in Switzerland. Therefore, it is a good promotional opportunity for textile collecting companies and a possibility to rise awareness about the aspects of textile industry’s impact. The event could be arranged in cooperation with BD or organized by the company itself.

The entrance fee for the “Walk-in Closet” is normally CHF 5. Instead of cash, it would be more educative and beneficial, if visitors pay by clothes.

RECEIPT AND HAND OUTS IN GARMENT STORES

By partnering with Swiss apparel brands and retailers, textile collecting companies can promote on the back side of receipts (see Figure 20). This solution does not require additional materials, as any purchase must be provided with receipt. Considering one store has about 50 customers per day, more than thousand receipts could be distributed per month within only one shop at minimal cost.



Figure 20. Promotion on receipt example. (Kolossova, 2016)

Another recommendation is to add to each purchase a handout, as it has high potential to be seen. There could be organized a contest among kids about textile and sustainability topics to find the best drawing for the front page and the winner could be chosen in a voting. This concept can spread awareness about the company's existence and sustainability. And it could even have an educational aspect for children, parents and voters. Receipts and handouts are suitable solutions to promote awareness about the company and its services.



Figure 21. Promotion on a handout example. (Kolossova, 2016)

PUBLIC TRANSPORT PROMOTION

According to statistics issued by the Federal Office of Statistics (FOS, German: *Bundesamt für Statistik*) in 2013, Swiss residents travel in average 30 minutes to work (Schweizerische Eidgenossenschaft, 2013). In Switzerland and especially around bigger cities, many people prefer to commute by public transport. Thus, promotion in public transport would be beneficial for textile collecting companies. Educating information and service information could be displayed on posters that could be designed similar to the aforementioned handouts.

TEXTILE DETERGENTS AND GARBAGE BAGS

Textile detergents could also be valuable to promote textile collection services. Figure 22 shows a possible implementation. As there is usually limited space, a QR Code could refer to further information (see Figure 22).

On garbage bags, it is possible to print more information and to reach a large amount of population.



Figure 22. Promotion on a bottle of a detergent example. (Kolosova, 2016)

7. PROPOSAL

The proposal consisting of Business and Communication Strategy guidelines aims to support an increase of textile collection rate in Switzerland, what should benefit ecologically and economically. As the goal of this thesis is to propose a solution to reach zero textile waste, the project is named “A Zero Textile Waste Strategy” accordingly.

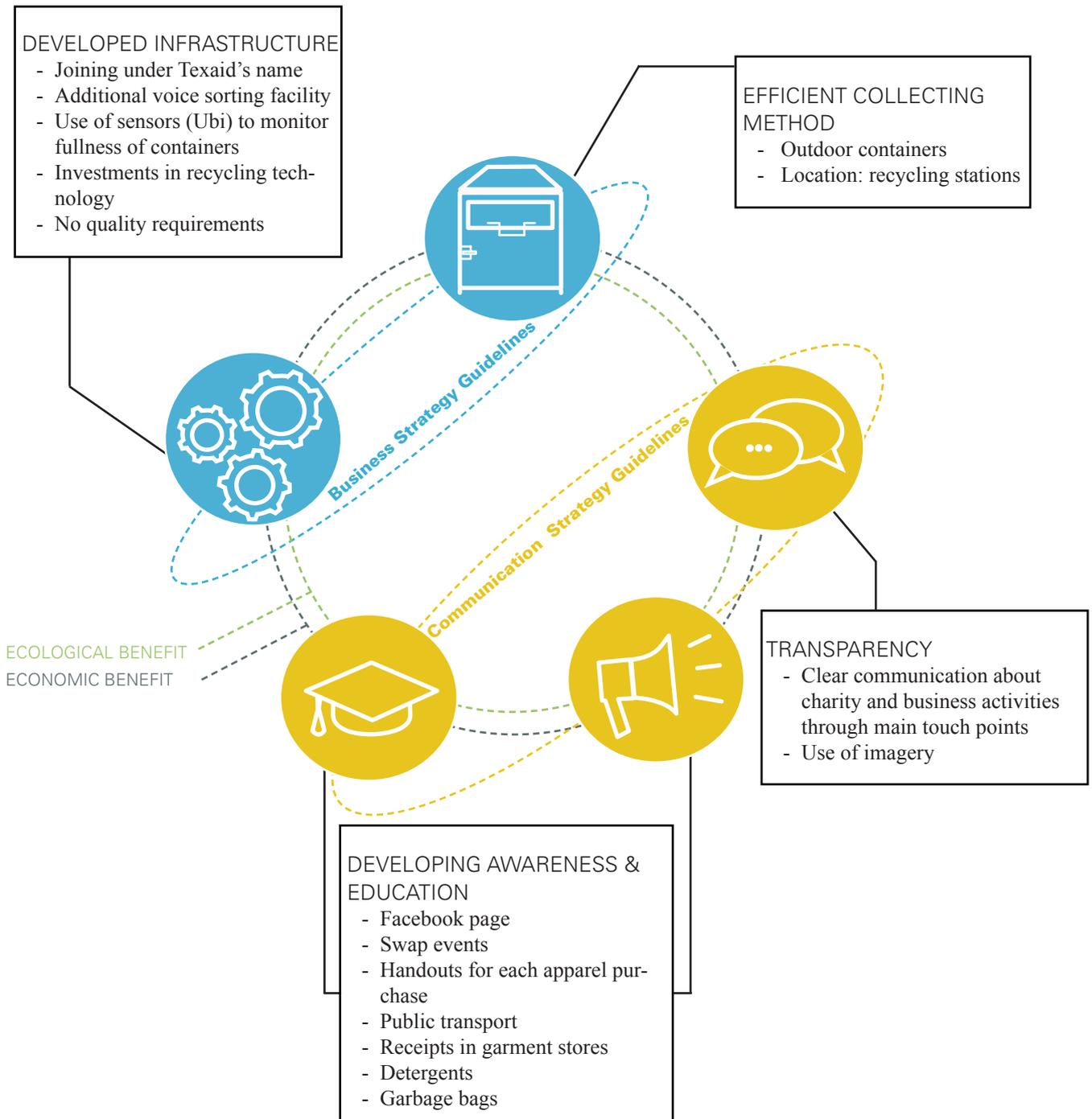


Figure 23. A Zero Textile Waste Strategy proposal. (Kolosova, 2016)

7.1 BUSINESS STRATEGY GUIDELINES FEEDBACK

In order to gain an understanding of how feasible and actual the Business Strategy guidelines are, Ueli Maass, an expert in setting and checking the recycling facilities at SR, has given his professional opinion.

DEVELOPED INFRASTRUCTURE

According to Ueli Maass, there is a strained relationship between Tell-Text and Texaid as they are in high competition for clothes. This could be due to the law, which says that local authorities decide on their own with which textile company to work. Thereby it is questionable for the expert if these companies could work together, unless it is forced by law or by an unfriendly takeover. However, textile collecting is a free market where anybody can enter, in contrast to glass or PET recycling. This is why for both companies it could be beneficial to join together and create a stronger entity.

The expert mentioned that a unique sorting system would be easier and more efficient and combined logistic activities could be a big benefit for all involved companies.

Furthermore, Mr. Maass said that Texaid and other recycling organizations in Switzerland introduced a technology similar to the Ubi sensor around two years ago. After a short time however, it was removed due to inaccuracy of the received data. Therefore Texaid started the development of an own system based on statistics but without sensors, and even received a prize for it. Nonetheless, the expert thinks that there is still a big space for improvements as the logistics is very costly.

EFFICIENT COLLECTING METHOD

According to Mr. Maass there are no facilities in Europe to recycle in an economic manner some of the commonly used synthetic fibers in textile production. This is one reason why both companies set the requirements towards pieces they collect. “These articles would just make a detour on the way to incinerator” said the expert.

7.2 COMMUNICATION STRATEGY GUIDELINES FEEDBACK

In order to gain an insight about the elements of Communication Strategy system communication expert Claudia Bucher at SR has given her professional opinion.

TRANSPARENCY

According to Mrs Bucher, transparency is highly important for companies that make business with donated textiles. Transparency is the bridge in order to build trust between the company and its donors. Mrs Bucher mentioned that according to her experience, today people in Switzerland do not know a lot about textile recycling. Often they are critical about the fact that textiles are retailed. Only few understand that this is a business part too and companies must sustain themselves financially.

Furthermore, Mrs Bucher pointed out that imagery is a more powerful tool to communicate with the donors on emotional level than text.

DEVELOPING AWARENESS & EDUCATION

When mentioned that neither Texaid, nor Tell-Text have Facebook pages, Mrs Bucher was surprised. She thinks it is necessary, as with no knowledge about the company, its web-page could be useless in promotional reasons. Moreover, the idea to promote through swap events sounds interesting to Mrs Bucher. She was not sure if a cooperation with BD could work. Otherwise, she thinks it is a good

idea, which also could be organized by the company itself.

Concerning receipts and handouts to each purchase in garment stores, Mrs Bucher had a positive opinion and recommended to start with smaller or/and local stores. For instance, established brands like Mango would probably charge high prices for such services, what could be out of range for a textile collecting company. In this sense, the “good reputation” aspect could be convincing.

Out of both ideas, in Mrs Bucher’s opinion receipts are the best solution, as there no distribution effort is required, and it could be introduced inexpensively.

Public transport advertisement could work very well, however this inappropriate due to the high cost, unless there are interested partners. She suggested local public transport, which is cheaper for promotion than the national. However, it should be thoughtfully chosen according to the targets of the campaign.

Additionally, for the promotion on detergents Mrs Bucher recommended to start to cooperate with Swiss brands and to monitor how it works.

All in all, both experts showed an interest in developed guidelines and think they have a potential.

8. CONCLUSION

The main goal of this thesis was to identify barriers in the user textile recycling experience in Switzerland in order to understand how to encourage the increase in recycling rate of textile waste. Before conducting research, the author assumed that the biggest barrier for the Swiss residents to recycle all textiles are quality requirements from the textile collecting companies. During the research it became clear that quality requirements is the least issue. It appeared that mistrust of companies, as well as unawareness about ecological situation and textile services are the main issues.

The research question “How to motivate Swiss residents to recycle 100% of their textile waste and how can Swiss textile collecting companies cope with the increase of textile collection?” was answered by applying the Double Diamond design process.

The proposal is a Zero Textile Waste Strategy that aims to enhance the textile collection in Switzerland. It consists of two parts: Business strategy and Communication strategy guidelines.

The Business strategy outlines recommendations for textile collecting companies to improve efficiency. It was suggested to create one entity between Tell-Text and Texaid, but under the market leader’s name “Texaid”. In addition, a voice controlled sorting system for the Tell-Text’s sorting facility was suggested. In textile collection, smart container monitoring systems were recommended to improve the efficiency. Furthermore, as the goal is to collect all unwanted textiles, quality requirements should be avoided. However, according to the status quo, recycling technologies are deficient today and it is not possible to recycle all fibres. Hence, it was recommended to invest into development of recycling technologies.

Finally, the use of outdoor collectors placed at public recycling stations is cost efficient for the collecting company and convenient for the donators.

Communication strategy guidelines aim to build trust between Swiss residents and the textile collecting company, as well as to spread awareness about services and ecological aspects in order to obtain more textiles. The strategy recommends to communicate on each touch point with the customer and to use imagery that evokes emotions. At the moment, main touch points are the containers and the web page. However, through out this thesis additional touch points were identified.

The outcome of the brainstorming session was that information about services is most effective when combined with an educative element. In order to keep a comprehensive approach, a communication system to inform users through the following elements was suggested:

- Facebook page
- Swap events
- Handouts for apparel purchases
- Public transport advertisements
- Receipts in garment stores
- Detergents
- Garbage bags

LIMITATIONS

„A Zero Textile Waste Strategy” gives recommendations based on findings from research, interviews, surveys and from a brainstorming session. However, some limitations have to be considered:

- Although attention was paid to ask a mix of people, interviews and surveys in the scope of this work can not represent the opinions of all people in a country with more than 8 million residents.
- Furthermore, the Strategy suggests the combination of two companies, the implementation in detail, however, would exceed the framework of this project.
- A big challenge nowadays is that commonly used fibres could still not be recycled. This work does not cover the technical improvements which are necessary to eliminate textile incineration completely.

9. OUTLOOK

The developed proposal consisting of two parts should be implemented step by step. First of all, it is important that Business Strategy requirements are fulfilled. The potential creation of an entity under Texaid's name should be planned.

In a next step, when the company is prepared to receive a larger amount of textiles the communication strategy part could be initiated. Consisting of several parts, the developed communication system approach should be monitored. Each element of the system should be evaluated and the weak ones must be eliminated.

In the future, the company can think of offering a new sorting service, based on type and/or colour of the old textiles. For example, as the best results in up-cycling textile for new fibers are obtained by using 100% cotton articles, this could be used as the base for a new service.

As "Zero Textile Waste Strategy" aims to reach 50% increase in textile collection by 2020, while this is a first step to achieve 100% textile recycling rate by 2030. Thereby, the company must invest into finding new ways to recycle types of fibre that are not yet recyclable. Moreover, as in Switzerland only textile collecting businesses exist, the development of recycling facilities in the country would be beneficial for the Swiss economy.

By 2030, when the main economical and environmental goals are achieved, the company can think of establishing a new apparel brand from recycled textiles in cooperation with garment brands and retailers.

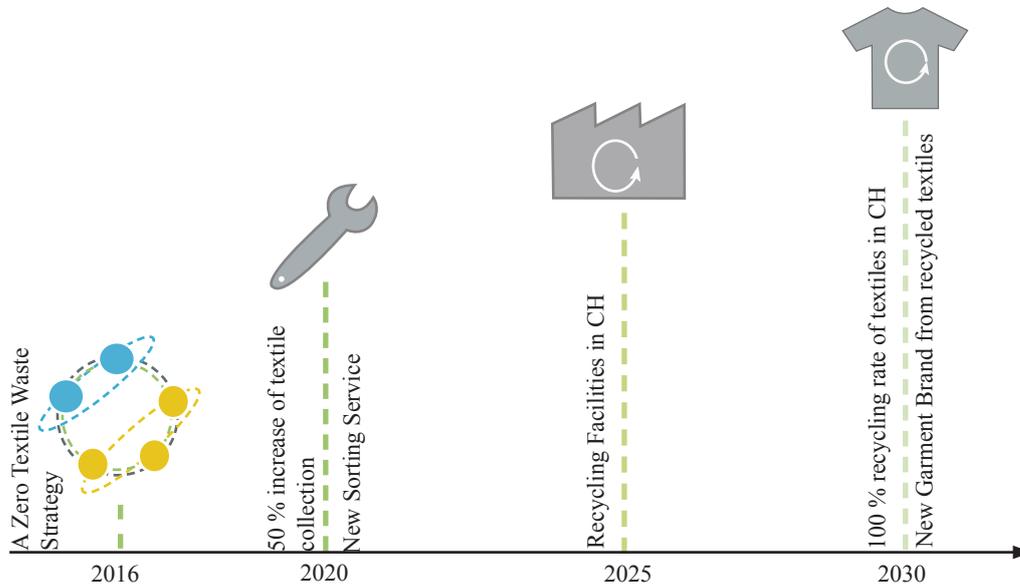


Figure 24. Outlook on a timeline. (Kolossova, 2016)

BIBLIOGRAPHY

- BBC news. (2005). *Recycling around the world*. Retrieved 18 March, 2016, from <http://news.bbc.co.uk/2/hi/europe/4620041.stm>
- Bioenergy consult. (2014). *Solid Waste Management in Nigeria*. Retrieved 14 April, 2016, from <http://www.bioenergyconsult.com/solid-waste-nigeria/>
- Bundesamt für Umwelt. (2012). *Gesamtmenge der Siedlungsabfälle und recyclingquote [Fact sheet]*. Retrieved 16 March, 2016 from https://www.google.ch/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwiaxqLDgMXLAhUBv3IKHfV6CxsQFggdMAA&url=http%3A%2F%2Fwww.bafu.admin.ch%2FAbfall%2F01517%2F01519%2F12949%2Findex.html%3Flang%3Dde%26download%3DNHzLpZeg7t%2Clnp6I0NTU042l2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCHdYB_hGym162epYbg2c_JjKb-NoKSn6A--&usq=AFQjCNFAIqEwkUivIEAuAI5KHGHmsFPZQ&sig2=owNC55H0oHM_907Sd5x80A
- Bundesamt für Umwelt. (2012). *Zusammensetzung des Kehrriechts 2012 [Fact sheet]*. Retrieved from <http://www.news.admin.ch/NSBSubscriber/message/attachments/33601.pdf>
- Bust. (2014). *The true price of fast fashion*. Retrieved 30 March, 2016, from <http://bust.com/style/12307-the-true-price-of-fast-fashion.html>
- Braw, E. (2014). *Sweden reveals world's first garment made entirely from recycled cotton*. Retrieved 21 April, 2016, from <http://www.theguardian.com/sustainable-business/sustainable-fashion-blog/sweden-recycled-cotton-technology-fashion-composting>
- Center for Sustainable Systems, University of Michigan. (2015). *Municipal solid waste fact sheet [Fact sheet]*. Retrieved from http://css.snre.umich.edu/css_doc/CSS04-15.pdf
- Conca, J. (2015). *Making climate change fashionable - the garment industry takes on global warming*. Retrieved 31 March, 2016, from <http://www.forbes.com/sites/jamesconca/2015/12/03/making-climate-change-fashionable-the-garment-industry-takes-on-global-warming/>
- Cordes. *The textile container (n.p.) [Image]*. Retrieved 5 May, 2016, from <http://www.cordes.eu/en/the-textile-container->
- Department für Wirtschaft, Soziales und Umwelt des Kantons Basel-Stadt. (2013). *Entsorgen von A-Z [Fact sheet]*. Retrieved 10 April from <http://www.bs.ch/publikationen/ae/Entsorgen-von-A-Z.html>
- Design Council. (2005) *A study of the design process [Published study]*. Retrieved 16 May from [http://www.designcouncil.org.uk/sites/default/files/asset/document/ElevenLessons_Design_Council%20\(2\).pdf](http://www.designcouncil.org.uk/sites/default/files/asset/document/ElevenLessons_Design_Council%20(2).pdf)
- Economists' pick. (2010). *Green trends in the EU and business implications*. Retrieved 6 April, 2016, from <http://economists-pick-research.hktdc.com/business-news/article/Economic-Forum/Green-trends-in-the-EU-and-businessimplications/ef/en/1/1X000000/1X074E5P.htm>
- Eco watch. (2015). *Fast fashion is the second dirtiest industry in the world, next to big oil*. Retrieved 23 March, 2016, from <http://ecowatch.com/2015/08/17/fast-fashion-second-dirtiest-industry/>
- Ethical fashion forum. (n.p.). *Fast fashion, "value" fashion*. Retrieved 30 March, 2016, from <https://www.ethicalfashionforum.com/the-issues/fast-fashion-cheap-fashion>
- European environmental agency. (2015). *Waste — municipal solid waste generation and management*. Retrieved 14 April, 2016, from <http://www.eea.europa.eu/soer-2015/countries-comparison/waste>
- Federal Office for the Environment. (n.p.). *Topic Waste*. Retrieved 10 March, 2016, from http://www.bafu.admin.ch/abfall/15199/index.html?lang=en#sprungmarke3_3
- Food and agriculture organisation of united nations, FAO. (n.p.). *The problem of land degradation*. Retrieved 18 April, 2016, from <http://www.fao.org/docrep/v9909e/v9909e02.htm>

Fisher Thornton, L. & Covey, S. M. R. (2013). *7 Lenses: Learning the principles and practices of ethical leadership*. (1st ed.). Richmond : Leading in Context LLC.

Godelnik, R. (2014). *Can fast fashion really be sustainable?* Retrieved 31 March, 2016, from <http://www.triplepundit.com/special/sustainable-fashion-2014/draft-fashion-futures-materials-resource-constraints-training-sustainability-design/>

Green peace. (n.p.). *Chemicals Substitution in textile industry: implementing chemical policies into the textile supply chain [slides]*. Retrieved 19 April, 2016, from <http://www.greenpeace.org/china/Global/china/publications/others/2013/20130325-GP-ENG.pdf>

Handelszeitung. (2016). *Warum alte kleider immer wertvoller werden*. Retrieved 27 April, 2016, from <http://www.handelszeitung.ch/unternehmen/warum-alte-kleider-immer-wertvoller-werden-1054206>

I collect. *I:collector (n.p)*. [Image]. Retrieved 5 May, 2016, from <http://www.ico-spirit.com/en/faq/>

I collect. (2013). *About I:CO*. [Video]. <https://www.youtube.com/watch?v=Jb3MbyjTFTI>.

Internet world stats. (2015). *Internet Stats and Facebook Usage in Europe Statistics*. Retrieved 8 May, 2016, from <http://www.internetworldstats.com/stats4.htm>

Mankiw, N.G. & Taylor, M.P. (2014). *Economics*. (3rd ed.). China: Andrew Ashwin.
Swiss recycling. (c2015). Swiss recycling. Retrieved 16 March, 2016, from <http://www.swissrecycling.ch/swiss-recycling/>

Napoleon cat. (2015). *Instagram user demographics in selected European countries*. Retrieved 8 May, 2016, from <https://napoleoncat.com/blog/en/instagram-user-demographics-in-selected-european-countries/>

O ecotextiles. (2009). *What is the energy profile of the textile industry?* Retrieved 31 March, 2016, from <https://oecotextiles.wordpress.com/2009/06/16/what-is-the-energy-profile-of-the-textile-industry/>

Palm, D & Elander, M. P. (2014). *Towards a Nordic textile strategy: collection, sorting, reuse and recycling of textiles* (TemaNord Book 538). (1st ed.). Danmark: Nordic Council of Ministers.

Petro, G. (2012). *The future of fashion retailing: the zara approach (part 2 of 3)*. Retrieved 30 March, 2016, from <http://www.forbes.com/sites/gregpetro/2012/10/25/the-future-of-fashion-retailing-the-zara-approach-part-2-of-3/>

Ravasio, P. (2012). *How can we stop water from becoming a fashion victim?* Retrieved 22 March, 2016, from <http://www.theguardian.com/sustainable-business/water-scarcity-fashion-industry>

Robecosam. (2016). *Where are the world's most sustainable companies located?* Retrieved 16 April, 2016, from <http://yearbook.robecosam.com/leaders-by-country.html>

Row, J. (2010). *Pros and cons of incineration for landfill relief*. Retrieved 22 March, 2016, from <http://www.brighthubengineering.com/structural-engineering/89810-pros-and-cons-of-incineration-for-landfill-relief/>

Ryan, K. (2015). *"Cheap and Trendy" fashion comes at a price*. Retrieved 30 March, 2016, from <http://thediplomat.com/2015/05/cheap-and-trendy-fashion-comes-at-a-price/>

Sigrist, S et al. (2008). *Mind the future*. (1st ed.). Switzerland: Verlag Neue Zürcher Zeitung.
McDonough, W & Braungart, M. P. (2002). *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press.

Schweizerische eidgenossenschaft. (2015). *Bundesamt für Umwelt*. Retrieved 18 March, 2016, from <http://www.bafu.admin.ch/umwelt/indikatoren/14643/index.html?lang=de>

Schweizerische eidgenosschaft. (2013). Swiss Statistics. Retrieved 9 May, 2016, from <http://www.bfs.admin.ch/bfs/portal/en/index/themen/11/04.html>

Smartbin. (n.p.). *Intelligent monitoring of textiles*. Retrieved 20 April, 2016, from <https://www.smartbin.com/markets/level-transmitter-textiles/>

Statista. (2014). Statista. Retrieved 8 May, 2016, from <http://www.statista.com/statistics/376128/facebook-global-user-age-distribution/>

Sustainability degrees, . (© 2013-2016). *What is Sustainability?* Retrieved 6 April, 2016, from <http://www.sustainabilitydegrees.com/what-is-sustainability/>

Swiss Textiles. (2014). *Annual report 2014*. Retrieved from http://www.swisstextiles.ch/cms/upload/dokumente/Publikationen/Swiss_Textiles_Geschaeftsbericht_2014_Web.pdf

Techtargetcom. (c1999-2016). *Definition business sustainability*. Retrieved 6 April, 2016, from <http://whatis.techtarget.com/definition/business-sustainability>

Tellenbach , M. (2012). *Waste management and raw materials Swiss Federal Office for the Environment*. Retrieved 20 April, 2016, from http://www.s-ge.com/en/filefield-private/files/45519/field_blog_public_files/12820

Texaid. (© 2015). *About Texaid*. Retrieved 21 April, 2016, from <http://www.texaid.ch/en/about-texaid/about-texaid.html>

Texaid. (n.p.). *Used textiles – raw materials for new uses*. Retrieved 10 April, 2016, from <http://www.texaid.ch/en/products-and-services/recycling.html>

Texaid. *Voice sorting system (n.p)*. [Image]. Retrieved 14 May, 2016, from <http://www.texaid.ch/en/products-and-services/sorting.html>

Textilkoordination. (n.p.). *Koordinationsstelle für die Textilsammlungen in der Schweiz*. Retrieved 23 April, 2016, from <http://www.textilkoordination.ch>

The European environmental agency of the European union. (2015). *Waste — municipal solid waste generation and management*. Retrieved 18 March, 2016, from <http://www.eea.europa.eu/soer-2015/countries-comparison/waste>

The independent. (2015). *Robot capable of sorting and folding clothes built by scientists in Glasgow*. Retrieved 20 April, 2016, from <http://www.independent.co.uk/life-style/gadgets-and-tech/news/robot-capable-of-sorting-and-folding-clothes-built-by-scientists-in-glasgow-10233025.html>

Valvan Baling Systems. (2015). *The fibersort*. [Video]. Retrieved 5 May, 2016, from https://www.youtube.com/watch?v=o9xgFBT_U3U.

Wikipedia. (n.p.). *Peak oil*. Retrieved 31 March, 2016, from https://en.wikipedia.org/wiki/Peak_oil

Walk-in closet. *Dynamo Zürich (n.p)*. [Image]. Retrieved 11 May, 2016, from <http://www.ico-spirit.com/en/faq/>

World-crisisnet. (n.p.). *World oil crisis: driving forces, impact and effects*. Retrieved 31 March, 2016, from <http://www.dynamo.ch/event/walk-closet-zürich-0>

WWF Global. (c2016). *Cotton farming*. Retrieved 22 March, 2016, from http://wwf.panda.org/about_our_earth/about_freshwater/freshwater_problems/thirsty_crops/cotton/

Zafar, S. (c2016). *Negative impacts of inseneration-based waste-to-energy technology*. Retrieved 16 March, 2016, from <http://www.alternative-energy-news.info/negative-impacts-waste-to-energy/>

DECLARATION OF AUTHORSHIP

I, Alexandra Kolosova, hereby certify that the attached work, *A Zero Textile Waste Strategy Encourages Textile Recycling in Switzerland*, is entirely my own and that I have indicated all sources (printed, electronic, personal, etc.) that have been consulted. Any sections quoted from these sources are clearly declared and indicated and the sources are explicitly given. I further declare that I have included acknowledgements of the names of any persons consulted in preparing this final BA thesis. Unless otherwise stated, no parts of this work have been published before submission.

Signed:

Location and Date: Lucerne, May 19, 2016

ACKNOWLEDGEMENTS

Thanks to many people it was possible to complete this bachelor thesis. Taking a chance, I would like to thank all who supported me on this path.

First of all, I would like to thank my tutor, Daniel Aeschbacher, who inspired me during the whole project with his comprehensive and valuable inputs. His positive and friendly attitude combined with professional approach and constructive feedback was extremely important for me.

Secondly, I would like to express my gratitude to Lilly Sulzbacher, Texaid's public relations manager for her effort and openness during personal communication.

A "thank you" goes to the textile industry expert Albin Kälin for his immediate response to my questions and his willingness to help.

Deep appreciation also to Ueli Maass and Claudia Bucher from Swiss Recycling for their valuable insights and flexibility.

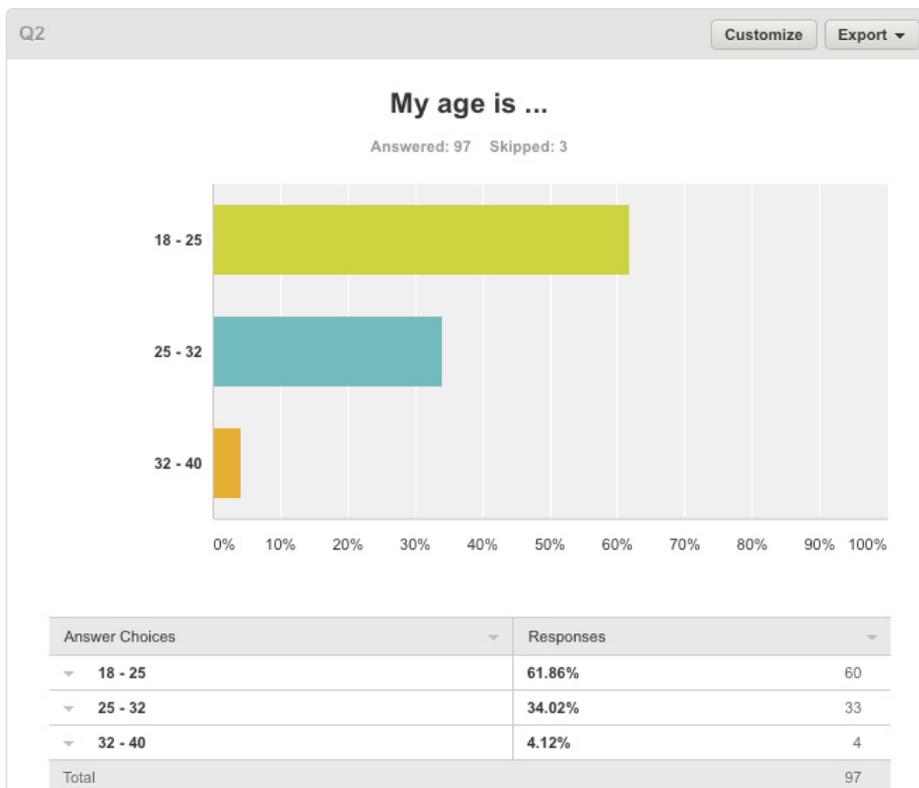
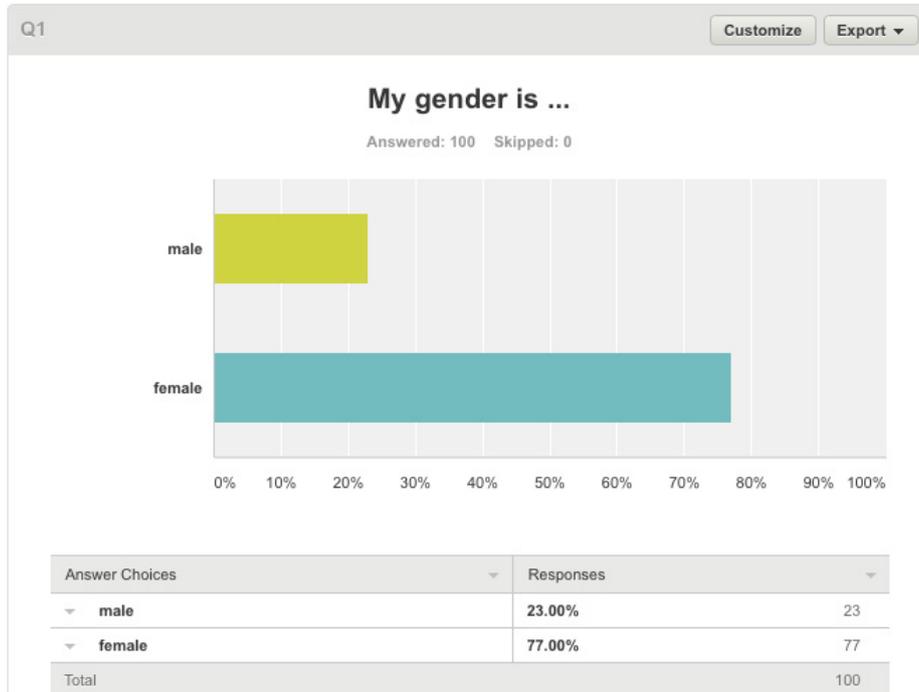
Furthermore, I would like to thank Lukas Steinmann and Arthur Stovall for their big help during proofreading.

I express my warm thanks to my family and my friends who supported me morally during this work. In particular Lukas Steinmann, Matteo Abate, Marina Domanskaya, Julien Weissenberg and Ekaterina Zotova, who found time to conduct the brainstorming session.

Finally, I would like to express appreciation to my bachelor thesis group companions for their positive mood and the valuable inputs.

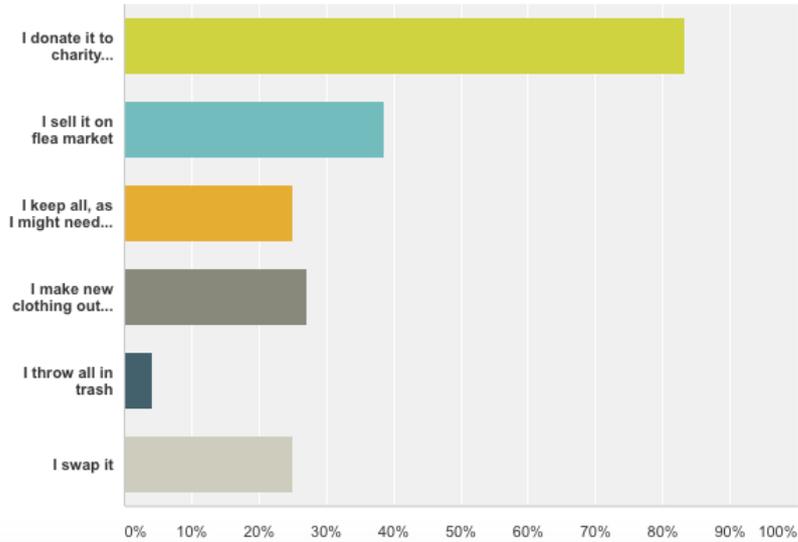
APPENDIX

ONLINE QUESTIONNAIRE



What do you do with your clothes and other textile products that you do not want or can not use anymore? (In case you throw all in trash, please skip all questions until question #7)

Answered: 96 Skipped: 4



Answer Choices	Responses
I donate it to charity organizations	83.33% 80
I sell it on flea market	38.54% 37
I keep all, as I might need it once for something	25.00% 24
I make new clothing out of it	27.08% 26
I throw all in trash	4.17% 4
I swap it	25.00% 24

Total Respondents: 96

Brocki

3/9/2016 8:17 AM [View respondent's answers](#)

I put them out in a bag for the "Kleidersammlung" or give them to someone I know needs them

3/8/2016 8:17 PM [View respondent's answers](#)

throw in trash what cannot be sold/donated

3/8/2016 7:48 PM [View respondent's answers](#)

I give them to my sisters.

3/8/2016 6:33 PM [View respondent's answers](#)

ask friends, if they want it

3/8/2016 5:43 PM [View respondent's answers](#)

I give it to 'Kleider- und Schuhsammlung'

3/8/2016 5:05 PM [View respondent's answers](#)

I bring it to the Brokenhaus (mainli charity, but not all) or a second hand shop

3/8/2016 4:32 PM [View respondent's answers](#)

Some I give to charity, some to friends, some I throw out

3/8/2016 3:48 PM [View respondent's answers](#)

give it to friends

3/8/2016 3:38 PM [View respondent's answers](#)

if the clothes are still im good shape, id ask friends if theyd like the item

3/8/2016 2:59 PM [View respondent's answers](#)

Take it with me when I go traveling and give it to the locals

3/8/2016 2:56 PM [View respondent's answers](#)

I give it away to family members

3/8/2016 2:26 PM [View respondent's answers](#)

I give it to my sisters

3/8/2016 2:19 PM [View respondent's answers](#)

Some pieces I keep, as i might need it for something or to handicraft work, but not all

3/8/2016 2:05 PM [View respondent's answers](#)

If possible I repair them

3/8/2016 12:53 PM [View respondent's answers](#)

I give it to relatives/friends who needs it

3/8/2016 11:59 AM [View respondent's answers](#)

give to my family or friends for free

3/8/2016 11:45 AM [View respondent's answers](#)

Recycle (you get discount coupons from H&M in exchange of old textiles. They use them to make new materials.)

3/8/2016 3:23 AM [View respondent's answers](#)

I put it into the container for used clothes at Migros, Coop, etc. (i think they send it to 3rd world countries or recycle)

3/7/2016 10:40 PM [View respondent's answers](#)

I sell it on eBay

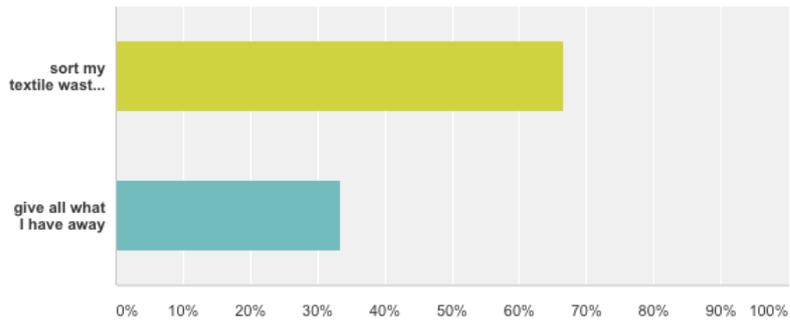
3/7/2016 9:01 PM [View respondent's answers](#)

Q4

[Customize](#) [Export](#)

If I donate my clothes or any other textile products to charity organizations, I...

Answered: 90 Skipped: 10



Answer Choices	Responses
sort my textile waste and donate only pieces in good condition	66.67% 60
give all what I have away	33.33% 30
Total	90

Usually (in the U.S.) I would sort out the nicest things to consign/sell, and then take the rest or whatever didn't sell and donate it.

3/8/2016 9:27 PM [View respondent's answers](#)

give all, dependt on what they accept

3/8/2016 4:32 PM [View respondent's answers](#)

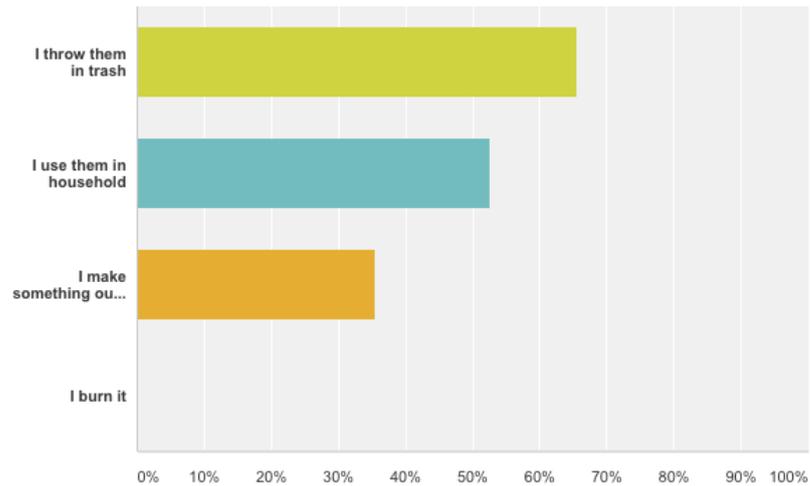
Q5

Customize

Export ▾

What do you do with your clothes and other textile products that are in unsatisfactory condition?

Answered: 93 Skipped: 7



Answer Choices	Responses
▾ I throw them in trash	65.59% 61
▾ I use them in household	52.69% 49
▾ I make something out of it	35.48% 33
▾ I burn it	0.00% 0

Total Respondents: 93

Altkleidersammlung (Textile Recycling)

3/9/2016 8:17 AM [View respondent's answers](#)

See answer 4.

3/8/2016 9:27 PM [View respondent's answers](#)

give them to charity organizations. they make rags out of it!

3/8/2016 8:46 PM [View respondent's answers](#)

it depends on what kind of fabric it is. I throw socks in trash, but I repair pullover, jeans et cetera,

3/8/2016 6:33 PM [View respondent's answers](#)

I give it to 'Kleider- und Schuhsammlung', sometimes I bring it to H&M

3/8/2016 5:05 PM [View respondent's answers](#)

Bring them to school where students from Textile can use them

3/8/2016 2:56 PM [View respondent's answers](#)

I donate them to charity organizations, they can use them for recycling-products

3/8/2016 2:19 PM [View respondent's answers](#)

donate everything to the big recycling companies (such as TexAid) - they sort it out and use them for other stuff than clothes..the "charity" organization (not all of them are doing charity, it's just what we think they do..) earn a lot of money with our waste

3/8/2016 2:12 PM [View respondent's answers](#)

give it to charities that make new textiles out of it

3/8/2016 2:00 PM [View respondent's answers](#)

In Germany you can donate also textile products in unsatisfactory condition. It will be used in industry or will be burned.

3/8/2016 11:04 AM [View respondent's answers](#)

See nro 3: H&M

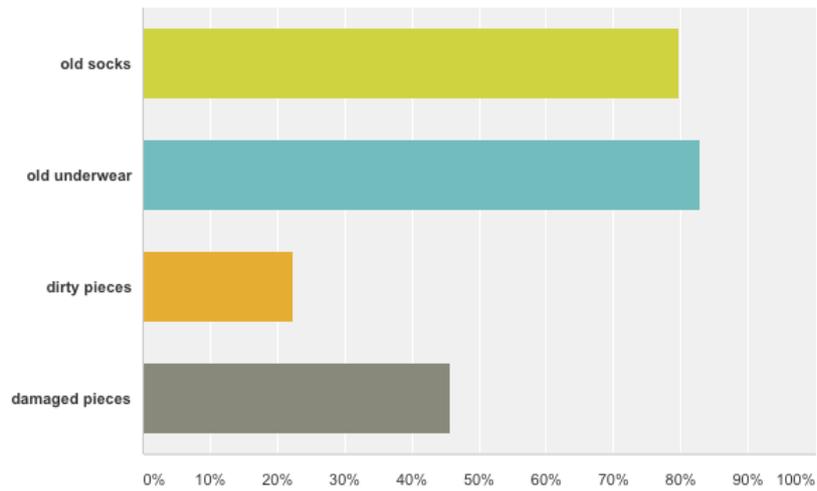
3/8/2016 3:23 AM [View respondent's answers](#)

I put it into the container for used clothes at Migros, Coop, etc.

3/7/2016 10:40 PM [View respondent's answers](#)

What textile products do you throw in trash?

Answered: 94 Skipped: 6



Answer Choices	Responses
old socks	79.79% 75
old underwear	82.98% 78
dirty pieces	22.34% 21
damaged pieces	45.74% 43

Total Respondents: 94

Not sure if shoes count. I'm usually too sad to throw them away even if they're totally destroyed but that's what one would have to do, sadly.

3/8/2016 9:27 PM [View respondent's answers](#)

but only socks and underwear

3/8/2016 8:46 PM [View respondent's answers](#)

nothing I always use them to make stuff

3/8/2016 4:06 PM [View respondent's answers](#)

unuseful pieces

3/8/2016 3:48 PM [View respondent's answers](#)

old bikinis, bathing suits, faded garments

3/8/2016 3:37 PM [View respondent's answers](#)

damaged or stinky shoes

3/8/2016 1:56 PM [View respondent's answers](#)

None.

3/8/2016 3:23 AM [View respondent's answers](#)

i don't throw my clothes into the trash

3/7/2016 10:40 PM [View respondent's answers](#)

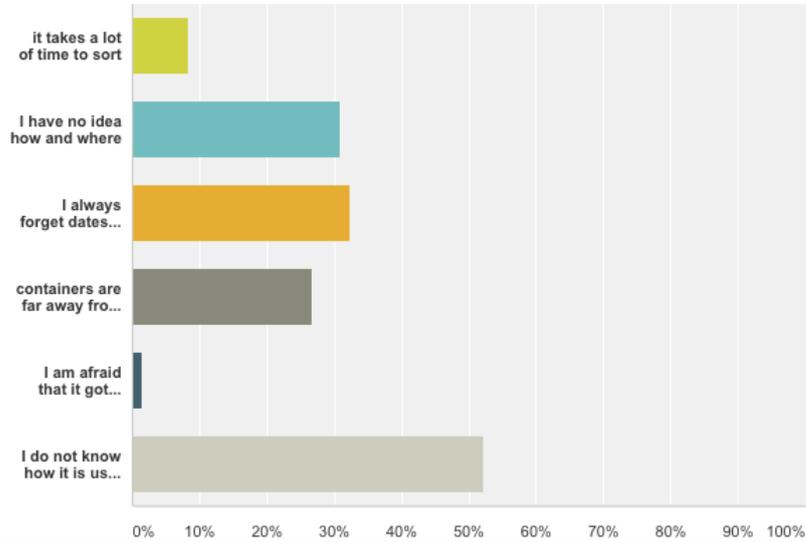
Q7

Customize

Export

What inconveniences do you experience in textile recycling process? In case you do not recycle, please write the reason why in the window below.

Answered: 71 Skipped: 29



Answer Choices	Responses
it takes a lot of time to sort	8.45% 6
I have no idea how and where	30.99% 22
I always forget dates when it is collected	32.39% 23
containers are far away from the place where I live	26.76% 19
I am afraid that it got stolen if I let it to be collected outside	1.41% 1
I do not know how it is used afterwards	52.11% 37

Total Respondents: 71

Nothing

3/9/2016 11:17 AM [View respondent's answers](#)

Never done it

3/9/2016 12:34 AM [View respondent's answers](#)

In Switzerland, I have absolutely no idea if this system exists or how it would work if it did.

3/8/2016 9:27 PM [View respondent's answers](#)

I don't really experience any inconveniences

3/8/2016 8:17 PM [View respondent's answers](#)

I'm lazy

3/8/2016 7:48 PM [View respondent's answers](#)

no inconveniences

3/8/2016 6:33 PM [View respondent's answers](#)

It seems that recycling containers is not a good solution as people in poor countries make money out of it by selling them.

3/8/2016 5:03 PM [View respondent's answers](#)

too small amount of waste (maybe one pair of socks per year?)

3/8/2016 4:32 PM [View respondent's answers](#)

Organizations like TexAid do not use all the clothes for purposes i want to support

3/8/2016 3:52 PM [View respondent's answers](#)

Usually my mom takes the clothes that are in good condition. I throw out socks and underwear because I don't know how it could still be used.

3/8/2016 3:48 PM [View respondent's answers](#)

i don't want to support those companys, as it is supporting "mafia"-businesses and is distorting local economy and crafts in africa. i rather give my clothes to people i know they want it (friends) or can use it like f.e. refugees

3/8/2016 3:38 PM [View respondent's answers](#)

no dont recycle. either give to charity, make something out of it or throw the very damaged ones away.

3/8/2016 2:29 PM [View respondent's answers](#)

I don't want to support the whole second-hand-clothing-business in Eastern Europe and Africa with its huge dimensions. And I don't know what happens to the clothes there if not longer needed or loved. Is there a third-hand-market? I don't think so. And I have no idea about ways of recycling there.

3/8/2016 2:26 PM [View respondent's answers](#)

there are so many ways to recycle textiles if you want to...

3/8/2016 2:19 PM [View respondent's answers](#)

none

3/8/2016 2:12 PM [View respondent's answers](#)

do not know anything about recycling

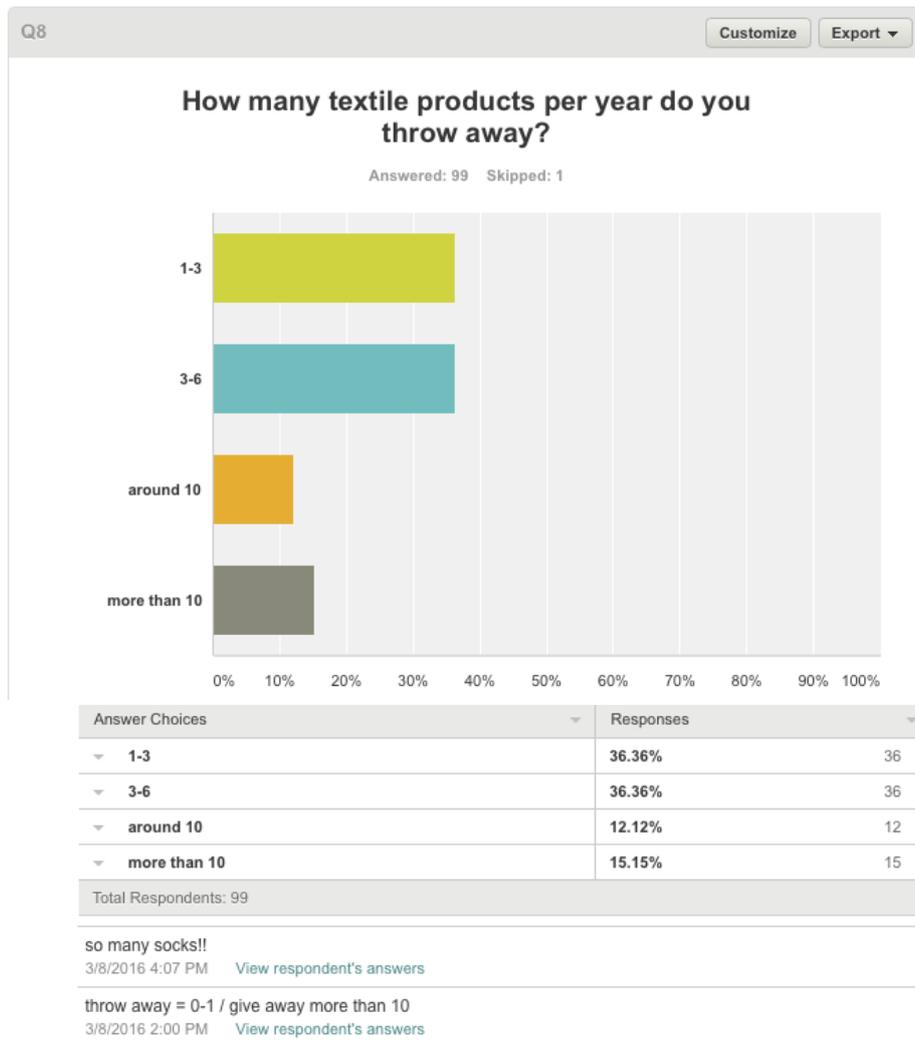
3/8/2016 12:26 PM [View respondent's answers](#)

I usually find them unusable and throw away

3/8/2016 11:14 AM [View respondent's answers](#)

i think it's not used for people who really need it (like refugees)

3/7/2016 10:01 PM [View respondent's answers](#)



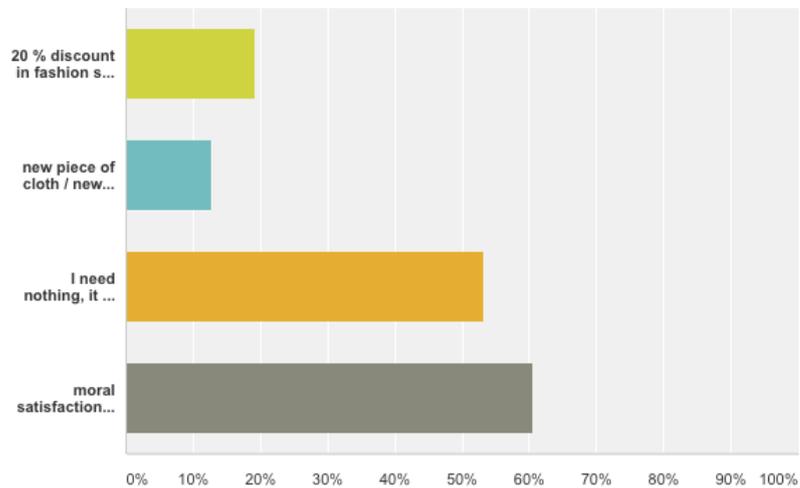
Q9

Customize

Export

Imagine you donate a bag of textile...What reward would you choose?

Answered: 94 Skipped: 6



Answer Choices	Responses
20 % discount in fashion shop would be cool	19.15% 18
new piece of cloth / new pair of shoes, etc	12.77% 12
I need nothing, it is good for my karma	53.19% 50
moral satisfaction is enough for me	60.64% 57

Total Respondents: 94

Someone else will use it,and that is the most important reward

3/9/2016 12:34 AM [View respondent's answers](#)

I'm happy just to do it, but being rewarded (even if it's just with knowing that something good will be made with them) would be extra nice!

3/8/2016 9:27 PM [View respondent's answers](#)

If I donate I don't usually want to fill up the space I gained with more stuff - so nothing

3/8/2016 8:17 PM [View respondent's answers](#)

No reward necessarily...I sometimes replace my old textiles with other old textiles from charity shops, etc.

3/8/2016 7:05 PM [View respondent's answers](#)

Well, if I donate something I don't expect something in exchange. It's a donation.

3/8/2016 6:02 PM [View respondent's answers](#)

A golden unicorn

3/8/2016 5:25 PM [View respondent's answers](#)

none

3/8/2016 4:32 PM [View respondent's answers](#)

Discounte would be even better if it were for a fair trade shop

3/8/2016 4:05 PM [View respondent's answers](#)

to know that i'll be useful for someone else

3/8/2016 3:48 PM [View respondent's answers](#)

if i'd get 20% discount or something i'd perhaps give away more stuff i keep just in case but never use it anyway. would be a motivation to give away stuff.

3/8/2016 2:32 PM [View respondent's answers](#)

The reward is simply to have more space at home for things you actually use... which has nothing to do with moral or karma or whatever

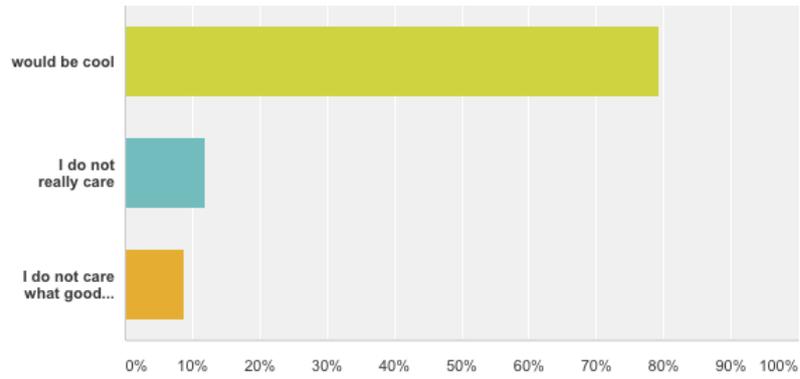
3/8/2016 2:30 PM [View respondent's answers](#)

i do it for the sustainability- it's just an easy way to not waste it

3/8/2016 2:12 PM [View respondent's answers](#)

Imagine you can chose what purpose your donation goes for how would you respond to it?

Answered: 92 Skipped: 8



Answer Choices	Responses
would be cool	79.35% 73
I do not really care	11.96% 11
I do not care what good purpose it serves	8.70% 8
Total	92

If its worth and serve somebody, it is enough!
 3/9/2016 11:17 AM [View respondent's answers](#)

If there were a bunch of cool/interesting/inspiring options, it might be fun to choose. If something better will happen to them though, that's awesome, I don't especially care what.
 3/8/2016 9:27 PM [View respondent's answers](#)

I don't necessarily need to choose, but it would be interesting to find out where they land.
 3/8/2016 7:05 PM [View respondent's answers](#)

im not concerned insofar as its for good
 3/8/2016 3:50 PM [View respondent's answers](#)

I don't have to know. If anyone but me can use it, it's in the perfect place.
 3/8/2016 2:46 PM [View respondent's answers](#)

i assume that the charities choose the best option for my old stuff?
 3/8/2016 2:32 PM [View respondent's answers](#)

If you could choose it probably would go to places that have an overflow of donations and other would be left out... I think more fortunate people shouldnt have the right to judge how needs their donations more. That's how politicians think and it's not working very well.
 3/8/2016 2:30 PM [View respondent's answers](#)

not really necessary (another decision to make... and maybe I'm not enough time or wisdom to bild a proper oppinion) I would be satisfied to know how it is used afterwards
 3/8/2016 2:05 PM [View respondent's answers](#)

didn't get the question
 3/8/2016 11:59 AM [View respondent's answers](#)

It would be great to know what would happen to the textiles, if they are used as promised or something else. But otherwise I don't really need to know.
 3/8/2016 3:23 AM [View respondent's answers](#)

INTERVIEWS

Arthur

1. What do you think about fashion industry?

I think that fashion industry uses a lot of marketing to sell people things they may not need. The goal is to encourage more sales, to increase the business, to make more profits. In the end of the day, people end up buying a lot of things just because there are new fashions.

2. Do you have at the moment any clothes or other textile products you do not want or can not use anymore? What would you do with those pieces?

Yes, I have some that have gotten older, I have kept them two or three years. I kept them just because I gained some weight and I could not wear them, but then I lost some weight and now I can use some of them. In America I would donate textiles and shoes and other things to Salvation Army or Good Will charity organizations that distribute goods further to people that need them. In Switzerland, I honestly do not know what can I do with it.

3. Have you given away any textile products recently?

Well, 6 years ago it was. At the moment I have couple of plastic boxes in the attic with the clothes that I am not wearing or wearing rarely, so this I could have given away. It is probably about time to go through it and sort it. Usually, I do this activity every couple of years.

4. Have you ever donated textiles in Switzerland?

Not yet, because it is only now that I have started to accumulate some extra clothes since I am living in Switzerland. Before to come to Switzerland I gave away a lot of stuff in America including textile pieces, and I brought here only things that I needed.

5. How many textile pieces to give away do you have at the moment?

Maybe two medium-sized boxes from IKEA, those two are accumulated within 8 years. In general, I do not buy many cloths. For example, my pants or shirts are for sure ten years old. I buy only when I need something. Sometimes, I get something as a gift. And I buy clothes and textiles for function rather than for fashion. As long as things are good, I keep them many years.

6. If you would decide to give away textile products would you follow the requirement that only pieces in good condition can be donated?

Those what I keep upstairs, they are all are in a good condition, it is just more than I need. If there are underwear or wear or a T-shirts that got some wholes or dirt on them, I usually use them for cleaning my car or something like that. So yes, it is separated from the beginning.

7. Do you throw any fabrics in trash bin?

Yes, socks with wholes, as I do not wear shoes in my house. But it is only 2-3 pairs of socks and 1-2 t-shirts per year, what is not much. In general, I am careful with the amount of cloths I buy. So, if I buy something, I either have a plan what it is going to replace, or it is something that I need and do not have.

8. Is there anything that disturbs you in the whole textile recycling process?

Well, I can not say that it takes me extra time to sort out clothes, as it happens simultaneously when we have to prepare or pack seasonal clothes (twice per year). In fact, I do not know where to give it away in Switzerland. In America I would have given them already away, but here I just don't know where to take them. In America I know exactly the places where to drop them. It would take me quite some time to investigate here in Switzerland where to take it. It is not obvious for me. In my routine life, when I go shopping I see neither signs, nor information, something like "here is the place to donate". Once a year or so we get a plastic bag to donate clothes, but I have no idea what is that all about. Moreover, I would appreciate if the process would be very simple and comfortable, it should be integrated into my routine life. With plastic bag the scheduling is pain for me, there is no freedom, you can miss the date then you have to conduct a research about the other options.

For me it would be easy to take my fabric waste to the same recycling point with the other waste that I have to bring anyway. That is easy, you have to go there anyway.

Furthermore, as I drive my car often, a comfortable place for me would be the spot between parking and entrance, so you drop your donation bag before to enter the shopping centre or supermarket. However, if you put it near to a definite store like Coop or Migro you might limit the access for those who are not customers of this particular shop. In addition, I can think of a place where the traffic is and where no parking money is required.

9. What reward for your donation would you like to have?

Well, in America you can get a discount voucher or a receipt for the tax declaration if you bring something to

donate. However, the discounts are quite small, so I do not really think that it is a real incentive. The simplicity in this case is much more important than 15 % discount for my next purchase of socks. I am actually against of discount vouchers as it is marketing mean that makes one to buy more! It just reinforces the purchasing. I think the best thing is to make it as a charity donation. In America you can remove roughly estimated value of donation out of your tax declaration, of course it is very little, but for some it can give an incentive. So, if the procedure would have been easier, my boxes with fabrics could have been gone already, instead of lying around for couple of years.

Sumalee

1. What do you think about fashion industry?

I like fashion, but I know people that are careless about it and some people that love fashion, but do not have a good taste buying fashionable clothes that does not fit them. Normally, if I go shopping and I see discounts like 50 % or 70 % I can buy something, but with no sale I usually do not purchase. This is my personality. I buy 2-3 times per year, and this is all extra, as we have so many clothes. Sometimes when I am in shopping centre on the weekend, I see sales around and can buy something. I just bought recently a t-shirt for CHF 3-5. Additionally, I buy sometimes in second hand shops.

2. Do you have at the moment any clothes or other textile products you do not want or can not use anymore? What would you do with those pieces?

Yes, I have some upstairs. I am going to give it away to a friend of mine. She will come to visit me and she can have a look if she wants to have some. I know that you can donate your textile products somewhere, but I do not remember where. I have heard there are boxes for clothes, for shoes and begs. Sometimes I take good pieces to Thailand when I visit my family.

3. Have you given away any textile products recently?

Yes, to my friends. We swap sometimes.

4. Have you ever donated textiles in Switzerland?

Not yet, but I have heard my friends were talking about it. And also my boss, she always had a lot of clothes. Once she showed me a container for donation that I mentioned previously. In Thailand I can easily donate fabric goods, which are then distributed to people, but here in Switzerland I do not have an overview.

5. How many textile pieces to give away do you have at the moment?

Many boxes, but the clothes is mixed. I have to sort them into what I would still like to wear and what I would like to give away. I assume, there is a big number of fabrics, mostly clothes of course, that I will not use anymore. I would give it away faster, if not sorting. I am very busy. Often I get clothes from my friends that is too small, too big, or too boring for them. If I like something, I leave it for myself and the rest would probably be once donated.

6. If you would decide to give away textile products would you follow the requirement that only pieces in good condition can be donated?

Yes, sure! If something has a whole, you should not donate it. Other people should be able to wear it.

7. Do you throw any fabric in trash bin?

Yes, in case there are wholes in it or it got dirty. But it is very rare! I am not the type of person that follows fashion and buying regularly new pieces. I have a lot of really old clothes from my home country that I still wear, because I love it!

8. Is there anything what disturbs you in the whole textile recycling process?

I might like a piece, but do not wear it or wear it once a year. I think to let it outside for the street collection is quite convenient for me.

9. What reward for your donation would you like to have?

Sumalee's husband answers: Sumalee would go for a discount! She will quickly sort, then pack the bags and go for a receipt.

Other

I do not know what can be done else with the clothes if not to be worn again or thrown.

Anastasia

1. What do you think about fashion industry?

I like shopping in general, as it is like a therapy for me to go and look what is new, but usually I only look. It is in the head, especially of women, that we need always a new piece to our collection. On the other hand, I

think fashion industry is quite evil and makes a lot of money on the desire to look good. I do not purchase a lot anymore, but I still drop by often shops to have a look what is new, what is good, what is not. It is like therapy for me, you can switch your brain for a while.

2. Do you have at the moment any clothes or other textile products you do not want or can not use anymore? What would you do with those pieces?

Yes, either I give away or sell what I can. I give away textiles that I know I will not use anymore, mostly clothes of course, to friends with the similar to my sizes, or if I think it would fit them better than to me. When I know that those pieces will not suit my friends, I sell them for little money. I sell through Facebook group, or Tutti, couple of times on Gumtree.

3. Have you given away any textile products recently?

Yes, I have given away quite some recently. Mostly clothes for children, mine as well, for example, t-shirts, jeans. When I moved from Australia to UK, I gave a lot of stuff and same was when from UK I moved to Switzerland. Then actually when I was pregnant, my sister gave some stuff to wear, as the body changed fast and I did not have time for shopping.

4. Have you ever donated textiles in Switzerland?

In Switzerland no, in UK yes. In London there is a big variety of charity places where one can donate textile products. Here, I do not know where and how and so on. Once, I passed a place by where one can drop textiles, but I do not remember anymore where it was. I receive plastic bags regularly, but I never use them. I think I receive the red one, but I do not know the name exactly. I did not know what to do with it, when to take it and where. Additionally, it is confusing what to put in this bag and what not. In England, there is a huge choice where to bring it. You have to choose only to which shop to donate. Once, I gave away clothes and toys to Ukraine.

5. How many textile pieces to give away do you have at the moment?

I packed recently a bag of kid's clothes for my friend. I do it every half a year. After winter my son grew a bit and will not use some of the clothes anymore. Kids grow fast. Another bag or two I pack for my sister, from my older daughter to her daughter. Of my own stuff I do not have so much at the moment, either it was sold or given away.

6. If you would decide to give away textile products would you follow the requirement that only pieces in good condition can be donated?

If I would donate, I would donate the clothes that is still wearable, those I could not have sold or given away to friends, for example.

7. Do you throw any fabrics in trash bin?

The pieces with wholes and dirt I throw away, socks mostly. Often it is kid's clothes and shoes, but a few. Sometimes, I really have a problem to throw a piece away, but just because I do not want it laying around and because I do not know what to do with it I put it in trash. I see often my husband throwing clothes in trash.

8. Is there anything that disturbs you in the whole textile recycling process?

To find out about place and other details is a hassle. My husband would give away his pieces too, but he has no idea either about how it works in Switzerland. Time scheduling is also a trouble, when is it collected? I do not have time to research and investigate about it. Also, I would really like to know what happens to donation afterwards. When I gave textiles and toys to Ukraine, I knew exactly the purpose and trusted the organization. I would use the chance to choose the purpose my donation would go for. I would choose the most daunting in my opinion, according to the situation.

9. What reward for your donation would you like to have?

There is no need for reward. Discount is cool, but charity is charity, when I donate I do not think about benefit, rather about moral aspect. I like how it is in London on the High street, there is a street charity shops where you buy second hand products and all proceeds go to charity.

Eireen

1. What do you think about fashion industry?

All my clothes are from second hand shops. I do not really think about it a lot. However, I always have more than I would need. And it is always a question how much do you need!

2. Do you have at the moment any clothes or other textile products you do not want or can not use anymore? What would you do with those pieces?

Oh yes, I always throw them into white box, we have them in Switzerland. I am not sure, if then it is given to

people who need it, or used in car industry, I have heard something like that!

3. Have you given away any textile products recently?

Half a year ago I threw a bag into this white box. It is close from here at Lochergut, and it is on the way to coop, comfortable. I still keep quite a lot, because I have a feeling that if I give it away it is like a waste, that has no value.

4. Have you ever donated textiles in Switzerland?

Yes, I do it quite regularly, at least once in half a year.

5. How many textile pieces to give away do you have at the moment?

I do have a lot of clothes that I do not wear. I have at the moment at least 20 T-shirts to give away. I did not buy all of them, it comes from mother, sister. Sometimes I split my clothes into two parts, and use one part per time, then when I take the second part it feels like new clothes.

6. If you would decide to give away textile products would you follow the requirement that only pieces in good condition can be donated?

So, they take only good stuff? I always thought that it is better to give an old T-shirt to recycle then to the trash bin. However, my mother always says :”If you give away, then it must be in good condition”. I also gave away clothes in good condition to my neighbours recently.

7. Do you throw any fabrics in trash bin?

Yes, socks, underwear, bras.

8. Is there anything that disturbs you in the whole textile recycling process?

I do not really know a lot about it, neither about PET recycling or whatever. About textile recycling I have only one thought that the waste is used to make filling material for car seats. Furthermore, we get the plastic bag I think with red colours (it occurred to be green-coloured bag from Tell-TEX) on it, but I like more containers, it seems easier. There is so much information on this bag! So can you put this bag into container? I did not know that there are different companies.

9. What reward for your donation would you like to have?

Cash, or something like sawing class (educative), but I would not like discount in shop or whatever.

Oliver

1. What do you think about fashion industry?

I do not think about fashion a lot. Every year fashion changes so fast, producing a lot of waste I guess.

2. Do you have at the moment any clothes or other textile products you do not want or can not use anymore? What would you do with those pieces?

I have a lot of clothes now. Recently, I cleaned up and put the clothes I do not want to wear into coop bags, so now it is ready to be picked up by mother, later she will bring it to her friend. Maybe there are some kids who can use some of my stuff. I guess the rest will go to charity, or textile collecting companies.

3. Have you given away any textile products recently?

Not really.

4. Have you ever donated textiles in Switzerland?

No, but my mother does it probably with my old clothes, she is a manager.

5. How many textile pieces to give away do you have at the moment?

There are two full coop bags.

6. If you would decide to give away textile products would you follow the requirement that only pieces in good condition can be donated?

I would put everything in there, they can decide what they want to do with it, I believe they know it better.

7. Do you throw any fabrics in trash bin?

I throw only old socks, that I can not wear anymore.

8. Is there anything that disturbs you in the whole textile recycling process?

I have heard that those companies collect stuff in good condition, then also that clothes is not received by people who would need it for free. Somehow the whole thing in my opinion is really confusing. And as you see, I do not know a lot. I did not know that there is a bag for textile comes per post. But it seems comfortable solution for me.

9. What reward for your donation would you like to have?

In my opinion discounts are against sustainability, it is an incentive to buy more. For, me it is already good that I do not have to care about it, and can just give it away. But, I also like the idea that you can get some credits and visit some educative courses.