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evaluation of business models for increased reuse, collective use and prolonged life time of textiles

by
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PlanMiljø

preface

As a part of Mistra Future Fashion phase 2, IVL Swedish Environmental Research Institute (IVL) and PlanMiljø have identified and evaluated business models for increased use, collective use and prolonged life time of textiles. The objective was to collect experiences made and to identify lessons learned as well as factors of success and failure.

The assessment carried out is based on information collected in expert interviews with fashion companies and entrepreneurs offering a range of different business models within the fashion industry. On behalf of Mistra Future Fashion, IVL and PlanMiljø would like to thank all companies and organizations that have contributed with input to our work. Thank you for your engagement and participation!

Maria Elander, task leader

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A Mistra Future Fashion Report

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MISTRA
The Swedish Foundation for
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summary

As part of Mistra Future Fashion IVL Swedish Environmental Research Institute and Plan-Miljø have evaluated business models for increased reuse, collective use and prolonged lifetime of textiles. The evaluation is based on stakeholder interviews with 22 companies and organizations engaging in such business models, chosen from a pool of in total 59 identified business models.

Stakeholders see a current lack of incentives and policy measures supporting business models promoting reuse, collective use and prolonged life-time of textiles. The need for policy measures creating incentives for more sustainable business models and consumption patterns in the textile sector are judged to exceed the measures proposed by the Swedish Environmental Protection Agency in September 2016. Creating such incentives could contribute to accelerating the process of shifting to more sustainable consumption and supply patterns for garments and textiles.

Measures of success in this report include making profit (or break-even in the cases of non-profit initiatives), increased awareness/engagement from customers/citizens and increased active lifetime of textiles. Based on the collected stakeholder views, potential success factors for business models for increased reuse, collective use and prolonged life-time of textiles were identified:

- Access to (free) materials
- Access to volunteers
- Efficient logistics
- Finding the right material/garments
- Finding understanding from investors/financial institutes
- Good agreements with suppliers
- Keeping the customer interested
- Rapid establishment of the brand/business model
- Time since establishment

The interviewed companies and organizations represent both traditional brands (fashion companies) and other actors. The evaluated business model types comprise Own product take-back and resale, General collection and resale, Sharing with other users, Longer technical life and Redesign. The representatives shared their experiences and views on objectives, motivation, target audience, timing, financial support, profitability, financial obstacles, other obstacles, positive developments and beneficial policy instruments for their business models.

contents

summary	1
1 introduction	5
1.1 background.....	5
1.2 objective.....	5
1.3 scope.....	5
1.4 method.....	6
2 mapping of business models	8
2.1 classification of business models.....	8
2.2 character of the collected business models.....	9
3 stakeholders' experience and views	10
3.1 objectives.....	10
3.2 motivation for engaging.....	11
3.3 target audience.....	13
3.4 timing for start.....	14
3.5 financial support.....	15
3.6 profitability.....	16
3.7 financial obstacles.....	17
3.8 other obstacles.....	19
3.9 positive developments.....	20
3.10 beneficial policy instruments.....	21
3.11 reflecting on stakeholders' experiences.....	24
4 aspects of successful business models	25
5 conclusions and next steps	27
5.1 reflecting on the results.....	27
5.2 recommendations.....	28
5.3 next steps.....	28
references	29
annexes	30

list of figures

Figure 1 - Schematic illustration of the method used for the research..... 7

Figure 2 - Business model categories of the companies/organizations
selected for interviews..... 8

Figure 3 - Overview of the origin country of the companies/organizations
selected for interview..... 8

Figure 4 - Overview of the identified five business model types and examples
of different business models supporting reuse, collective use and
prolonged life time of textiles.....10

Figure 5 - Distribution of the collected initiatives in regard of different types
of business models for reuse, collective use and prolonged life time
of textiles.....10

Figure 6 - Overview of different types of actors (textile producer/brand and
other actors) in relation to the objectives (direct profit, indirect
profit or non-profit) of the selected business models..... 11

Figure 7 - Overview of different objectives (direct profit, indirect profit or
non-profit) of the different types of the selected business models..... 12

Figure 8 - Motivation for introduction of the selected business models..... 12

Figure 9 - Overview of financial support for the business models in the 22
selected companies depending on the business models role in the
companies (primary or secondary business model)..... 17

Figure 10 - Current profitability of the 22 selected business models.....17

Figure 11 - Identified other (than financial) obstacles for the 22 selected
business model.....20

Figure 12 - Distribution of identified other (than financial) obstacles mentioned
by the 22 selected business models.....20

Figure 13 - References to beneficial policy instruments from the 22 selected
business models..... 22

list of tables

Table 1 - Collected examples of business models for increased reuse, collective
use and prolonged life time of textiles.....32

Table 2 - Overview of the companies and initiatives selected for interviews.....34

abbreviations

C2C	Consumer to consumer
CSR	Corporate Social Responsibility
DDK	Danish crowns
EUR	Euro
SEK	Swedish crowns

use of the term business model in this report

In this report the term “business model” is used for activities that deliver value to customers and (direct or indirect) profit to the business by

- prolonging (active) lifetime of textiles by first and/or subsequent user(s);
- increasing reuse of textiles by subsequent user(s); and
- increasing collective use by multiple users.



1 introduction

1.1 background

Interest in alternative ways of consuming textiles has increased in recent years as awareness of the high environmental impact of textile consumption has grown. Both new entrepreneurs and traditional fashion companies are creating, testing and engaging in activities for increased reuse, collective use and prolonged life time of textiles (Mistra Future Fashion, 2014; Pedersen & Netter, 2013; Hvass, 2015). This has resulted in a range of different initiatives and new business models. Some business models and initiatives have been successful, while others are struggling to reach profitability or have failed. In general, business models for increased reuse, collective use and prolonged life time of textiles remain as a niche market. In order to change this, policy measures to increase reuse, collective use and prolonged life time of textiles are necessary.

1.2 objective

In order to develop recommendations for policy measures supporting business models for increased reuse, collective use and prolonged life time of textiles it is important to gain an improved understanding on why some initiatives and business models have been successful. The objective of this report is to collect experiences made by companies and organizations that have initiated and operated such business models, to define lessons learned, drivers, strengths, weaknesses and factors of success.

The report documents the work carried out in Task 3.3.3 in Mistra Future Fashion phase 2. The identified success factors along with the articulated obstacles and potentials have served as input to Task 3.2.4, which comprised a screening of policy measures supporting reuse, collective use and prolonged (active) life time of textiles. It will also serve as input for Task 3.2.5, where an impact assessment and recommendations for such policy measures will be carried out, and for Task 3.3.1, in which new business models in a sharing economy are assessed.

1.3 scope

The experiences from initiating and running business models for increased reuse, collective use and prolonged life time of textiles were collected from stakeholders' perspectives. The study included both entrepreneurs exclusively (or primarily) engaged in such business models and fashion companies that have chosen to complement their traditional business models with new business models.

The screening of different business models included both Swedish and international initiatives. Representatives from selected business models were interviewed. Due to practical reasons, interviews were primarily carried out with currently operating initiatives.

There is a large variety of business activities supplying textiles to consumers that have the effect of reducing the lifecycle impacts of textile products. The scope of this study is, however, limited to activities which extend the active lifetime of textile products, primarily clothing, as far as possible by a single or multiple users.

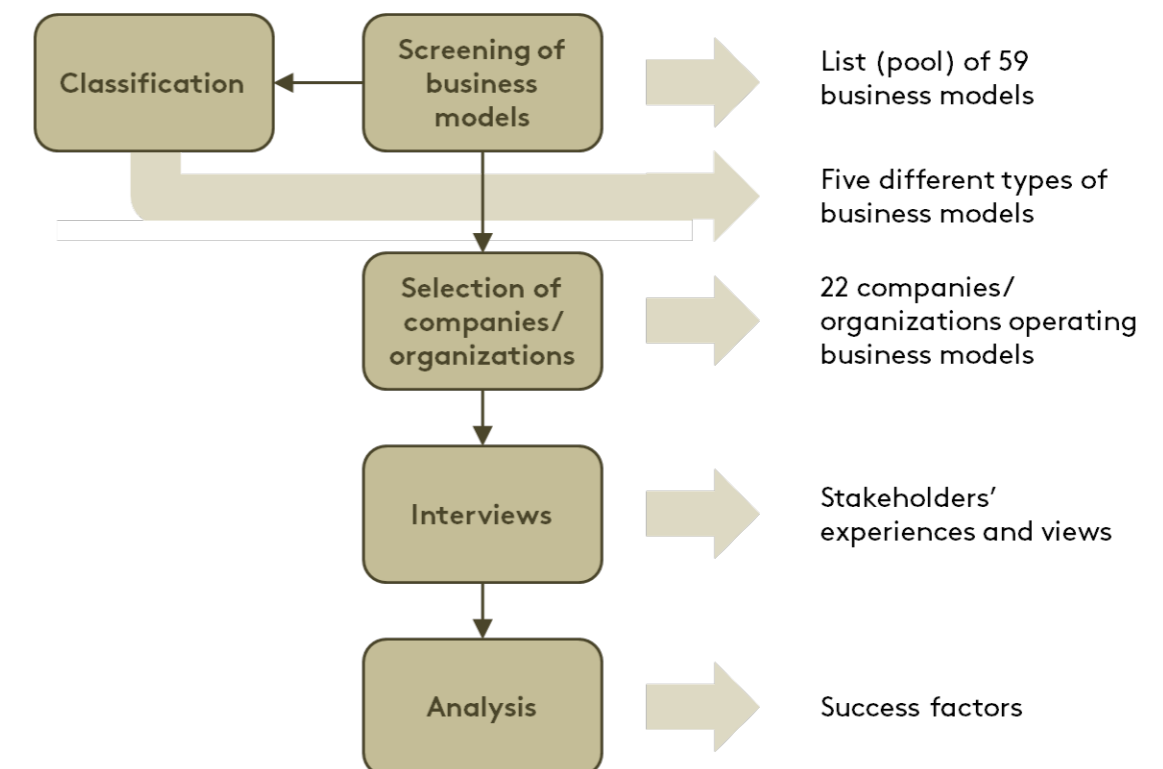
Not all such activities can strictly be defined as a business model in its own right. According to Teece (2010) the essence of a business model is that it "defines the manner by which the business enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit: it thus reflects management's hypothesis about what customers want, how they want it, and how an enterprise can organize to best meet those needs, get paid for doing so, and make a profit". In Teece's understanding then, a business model is conceptual, rather than financial (Watson et al., 2014).

This study is limited to business models that are distinct enough in the way they deliver value to customers and deliver (direct or indirect) profit to the business. Although the business models considered are activities that add value primarily by extending active lifetimes, an element or result of such business models may be products that are more suitable for repair and reuse (Watson et al., 2014).

1.4 method

The method used for this research includes screening of companies/organizations engaging in different business models supporting reuse, collective use and prolonged life-time of textiles; classification of different business model types; selection of companies/organizations; interviews with selected companies/organizations and analysis of their experiences and views, see Figure 1.

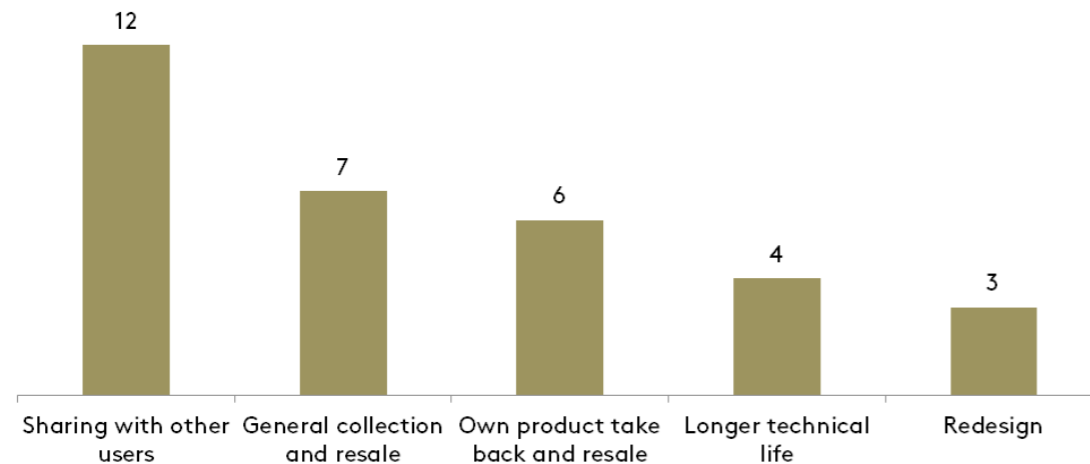
Figure 1 Schematic illustration of the method used for the research



To get a better overview and understanding of the variety of business models supporting reuse, collective use and prolonged life-time of textiles a screening of companies/organizations was carried out. The focus was given to Nordic companies/organizations. The screening resulted in a pool of 59 companies/organizations (see annex 1). The list should not to be seen as exhaustive but rather as a collection of examples that was used for the subsequent selection of interviewees. About 60 percent of the companies/organizations in the pool are Swedish; about 30 percent are from other Nordic countries and roughly 10 percent from outside of the Nordic region.

22 companies/organizations engaged in different business models for increased reuse, collective use and prolonged life-time of textiles were selected for interviews. The companies/organizations were selected from the pool of companies/organizations with the goal of covering all five business model categories identified in section 2.1 (illustrated in Figure 2).

Figure 2 Business model categories of the companies/organizations selected for interviews.¹



One of the goals of Mistra Future Fashion Phase 2 is to have a decisive impact on policy and practice which encourage systemic change of the Swedish fashion industry. Hence, emphasis was given on Swedish companies in the selection as illustrated in Figure 3. About 40 percent of the selected companies were brands and fashion companies and 60 percent were defined as other actors.

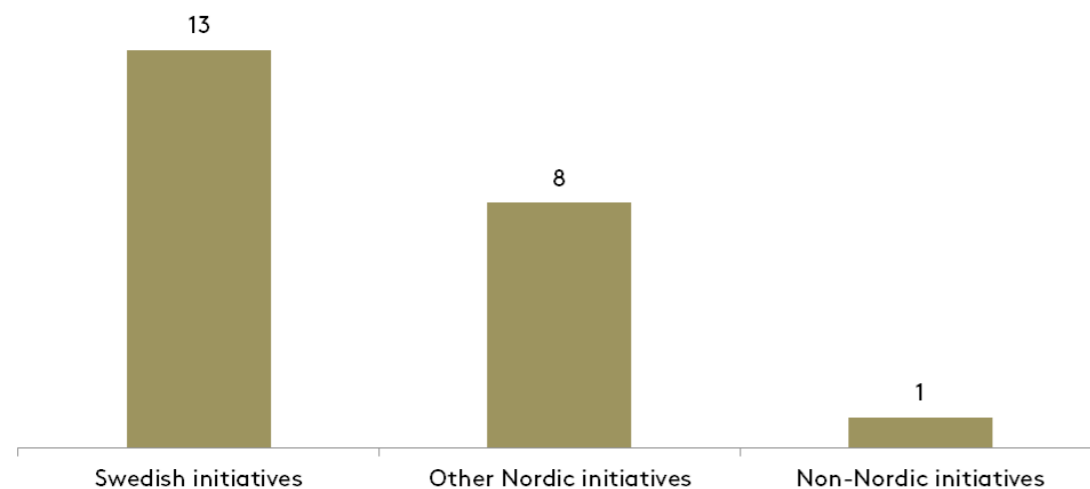


Figure 3 Overview of the origin country of the companies/organizations selected for interview

Telephone interviews were carried out with representatives from all 22 selected companies/organizations during June-August 2016 (see annex 2). A short overview of the companies and the initiatives they are engaged in are included in annex 3. The interviews were semi-structured taking their starting point in the interview guide provided in annex 4. The interviewers had the opportunity to follow up and elaborate further on additional aspects mentioned by the interviewees.

The analysis in this report is based on the input given by the interviewees.

¹ Some of the interviewed companies operate multiple business models/initiatives. This results in a higher number of business models (32) than interviewed companies (22).

2 mapping of business models

The 59 business models in the pool of business models supporting reuse, collective use and prolonged life time of textiles (see section 1.4) were classified into five different areas, allowing more explicit comparisons between business models in different areas and between business models within one area.

2.1 classification of business models

The initiatives/business models offered by the pool of companies/organizations were categorized into different business model types. For this purpose the classification of different business models developed by Watson et al. (2014) was adjusted to only include models which extend active lifetimes of products either by existing or via new users. This resulted in five business model types:

1. Own product take-back and resale

A company or brand is collecting textile products (primarily garments) that the company itself has put on the market. The collection is based on consumers returning the products (bring system). The most common way of take-back is in-store collection, but also other ways of collection are emerging. The quality of collected garments is often very high. The collected garments are re-sold (or donated), often on the national second-hand market, but can also be re-sold as vintage collections by the brand.

2. General collection and resale

A company or brand is collecting textile products (primarily garments and household textiles) regardless of who put the products on the market. The collection is based on consumers returning the products (bring system), primarily as in-store collection. Often the used textiles are collected regardless of condition, i.e. including worn-out and damaged textiles. The collection most usually takes place via a collection partner – either a charity or a business – who sells the textiles on global markets for reuse and recycling.

3. Sharing with other users

This group comprises models/initiatives where the same garment is shared among multiple users but not via traditional second-hand sales. This can comprise leasing or clothing libraries in which case the garments remain in the ownership of the business/organization running the system, or wardrobe sharing where the owner is a private citizen who lends or swaps their garments with other citizens, i.e. consumer to consumer (C2C) models. The access period for a single user can vary from short (i.e. costume hire and wardrobe sharing) to long (leasing). In some cases of leasing the leasing company is also the brand who has designed the product in the first place.

4. Longer technical life

This group of business models comprises models/initiatives which are based on extending the technical lifetime via design for durability/quality and for reparability and models where businesses offer repair services to consumers. In the latter case the repair services can either be offered by the original brand/producer or by a third party. There is a close connection between design for durability/reparability in this group and leasing of own brand under the previous group since it makes economic sense for a brand that is leasing their clothes, to design them to survive multiple users.

5. Redesign

Redesign concerns taking a textile product, either used or unsold, and making adjustments to it to produce a new textile product. The changes can be small (replacing buttons with a new style of button) or large (turning hospital sheets into shopping bags).

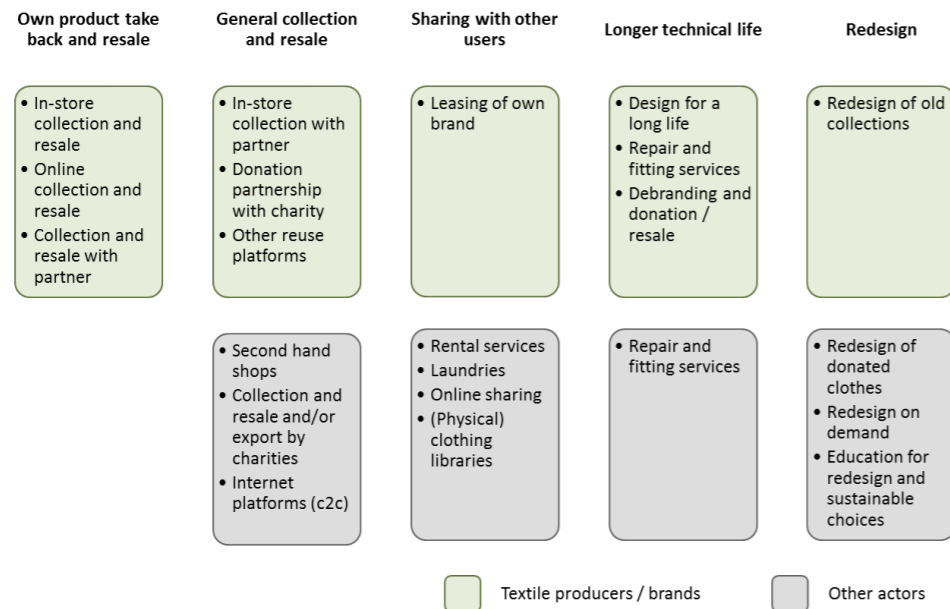


Figure 4 Overview of the identified five business model types and examples of different business models supporting reuse, collective use and prolonged life time of textiles

Except from the business model type Own product take back and resale, which is only applicable for traditional brands and fashion companies, all types include business models from both traditional brands (fashion companies) and other users, see Figure 4.

2.2 character of the collected business models

15 of the pool of in total 59 companies/organizations are engaged in more than one of the broad groups of business model/initiative described in section 2.1. Figure 5 illustrates how the initiatives engaged in by the companies in the pool are distributed between these business model types.

Sharing with other users constitutes the most common business model type among the collected examples. Together with General collection and resale and Own take back and resale it constitutes three quarters of all initiatives.

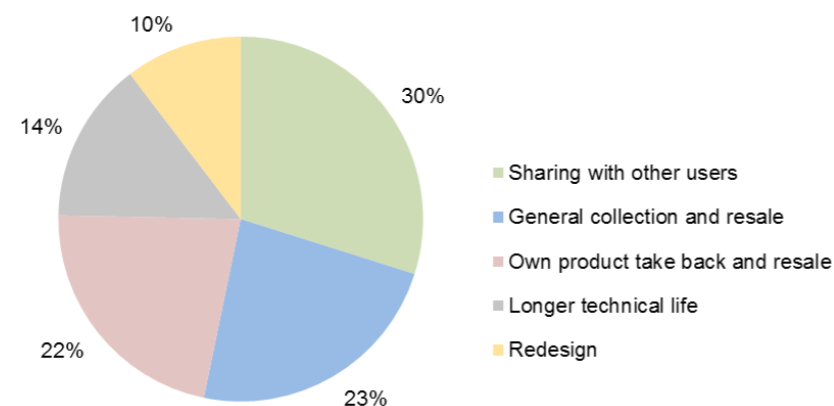


Figure 5 Distribution of the collected initiatives in regard of different types of business models for reuse, collective use and prolonged life time of textiles

Swedish and Nordic companies/organizations in the pool engage in all five business model/initiative types. The non-Nordic businesses in the pool engage in all but General collection and reuse.

3 stakeholders' experience and views

This section summarizes the results of the interviews carried out with representatives from the selected 22 companies and organizations engaged in business models supporting increased reuse, collective use and prolonged life time of textiles.

3.1 objectives

For half of the interviewed companies and initiatives, the business model(s) supporting increased reuse, collective use and prolonged life time of textiles represented their core (primary) business model.

For 64 percent of the business models the objective is to be directly profitable e.g. to generate profit. 18 percent of the initiatives stated that the objective of the business models is to be indirectly profitable, e.g. via marketing. 18 percent of the interviewees declared that the objective of the business models is solely environmental and/or social (non-profitable).

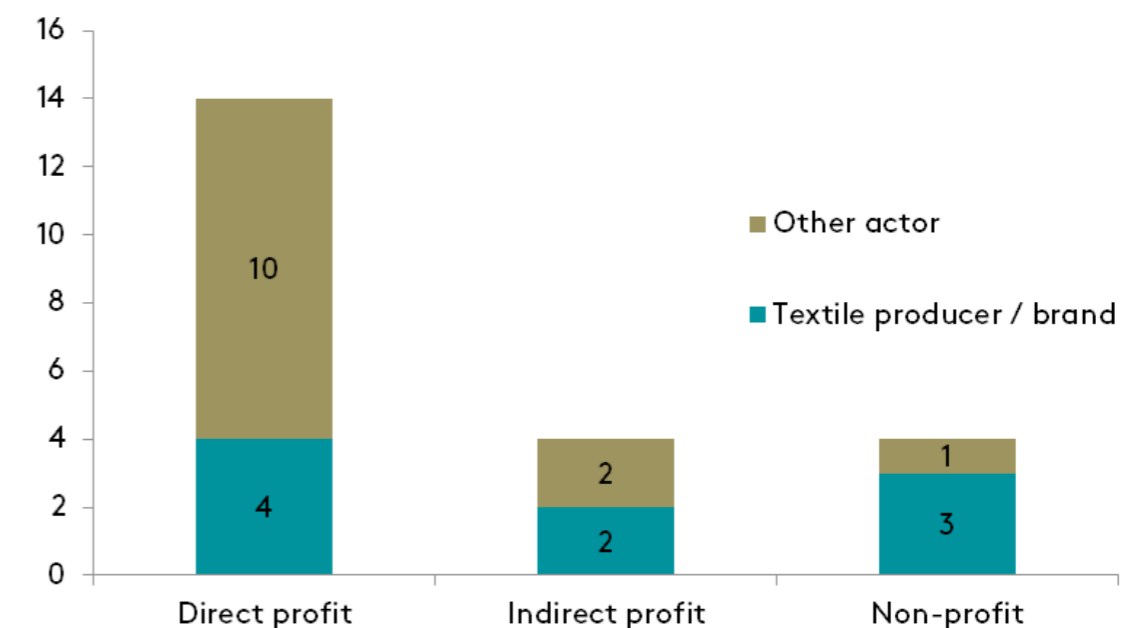


Figure 6 Overview of different types of actors (textile producer / brand and other actors) in relation to the objectives (direct profit, indirect profit or non-profit) of the selected business models

41 percent of the interviewed actors were traditional brands and fashion companies and the rest (59 percent) constituted of other actors. Profitability of the business models for increased reuse, collective use and prolonged life-time of textiles has higher importance for other actors than for traditional brands (fashion companies). Whereas 77 percent of the other actors state to have profitability as objective for the business model, the corresponding number for brands (fashion companies) is only 44 percent.

As illustrated in Figure 7 all business model types include business models with the objective of making profit. Four of the business model types include initiatives aimed at making an indirect profit and three business models types include initiatives whose primary goal was not to raise money but to give environmental improvements and raise awareness. Start-up clothing company AMOV for example, has created a platform where people can sell used AMOV clothing, but the company does not take a share in these sales – the aim is purely to ensure that their products live on as far as possible.

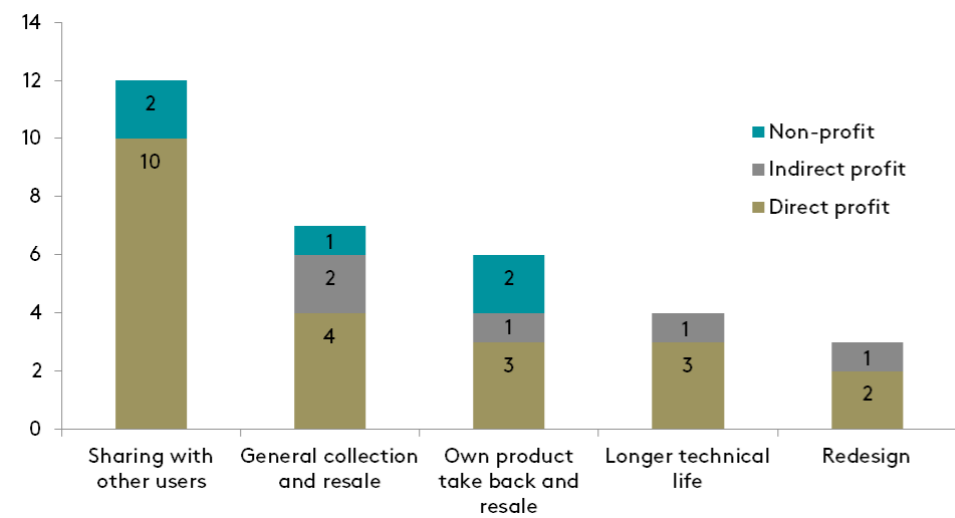


Figure 7 Overview of different objectives (direct profit, indirect profit or non-profit) of the different types of the selected business models

3.2 motivation for engaging

The interviewees mentioned different drivers for engaging in business models for promoting increased reuse, collective use and prolonged life-time of textiles. The motivations can be grouped into the following four categories:

- 1. Decrease environmental impacts of textile consumption**
Increasing efficiency in use per garment and overall reduction of textile consumption as part of a general corporate social responsibility (CSR) policy.
- 2. Creating circular flows in the textile value chain**
Increasing collection of used textiles and creating closed textile loops to secure raw material for new textile products in the future.
- 3. Direct profit generation**
Testing new business models/initiatives with the direct objective of making profit.
- 4. Miscellaneous**
All remaining stated reasons, including trying to change people's mind-sets, personal interest in fashion, social aspects and customer demand.

Different motivations for starting the business models were mentioned by multiple companies, resulting in overall 42 references from the 22 companies, see Figure 8.

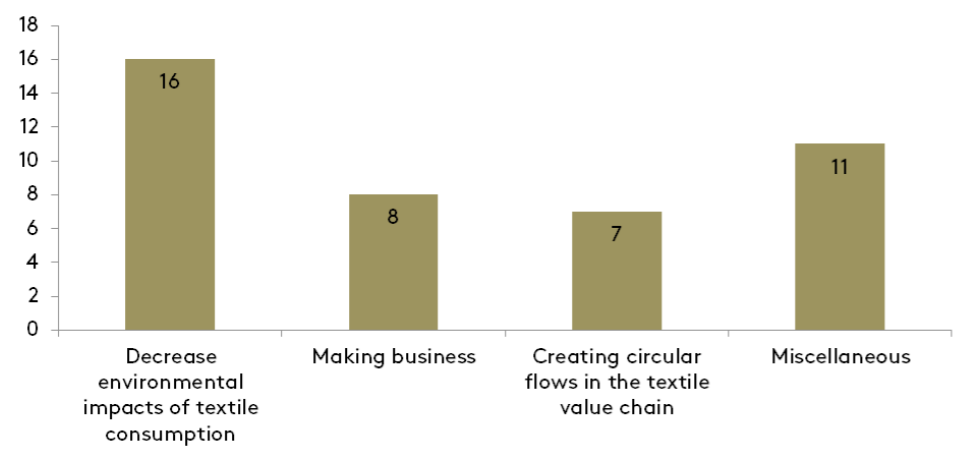


Figure 8 Motivation for introduction of the selected business models



"The primary goal of our second hand shops in municipal recycling centres is to postpone the end-of-life of a product until it is no longer usable – it's a resource agenda. In the process we also create green jobs. Another goal is to reduce the costs of waste treatment for our owners – the citizens."

Both traditional fashion companies (brands) and other actors stated that they wanted to change people's mind-sets and combat overconsumption promoted by fast fashion. One interviewee put it as that "people need smaller and smarter wardrobes".

"Other actors", i.e. those not from the fashion industry, in particular mentioned the need for a countermovement away from fast fashion and overconsumption. Several interviewees expressed their wish to do something different to their competitors, as a main driver in engaging in new business models.

Both brands (fashion companies) and consumers are becoming more aware of the large environmental impacts from the textile value chain. Reducing these impacts is the most often stated driver for interviewed companies (see Figure 7). It was a particularly important driver for engaging in business model types Longer technical life (71 percent of those engaged) and Own product take back and resale (54 percent). One interviewee expressed the wish to be "part of the solution – not the problem".

A further driver, particularly for those engaged in collection of used textiles, is to close the material loop with the long-term view of securing raw materials for tomorrow's production of textiles, as pressure builds on virgin sources.

Collecting and utilizing the used textiles for reuse and redesign is also driven simply by the wish to generate money and create green jobs. Traditionally this has enabled charitable organizations to provide employment to marginalized groups in society (social perspective). Other actors engaged in textile collection consider reuse and redesign as a way of postponing waste management of textile products and extending their active life time.

Interestingly, direct profit generation was not mentioned by any of the companies engaging in Longer technical life. In some cases, consumers have been the key driving force. One brand began offering a free repair service for their products in response to a growing customer demand for these services.

3.3 target audience

Two thirds of the interviewed companies had specific target groups or customer segments. Those that did not specify a target group were in particular charities engaging in General collection of used textiles for resale.

Women form the clear target group/customer segment for many of the companies/organizations. Re-Second, a Danish organization, that runs a C2C clothing library had until recently had exclusively women as customers. This reinforces itself because the few male members that have begun to join have very little clothing to choose from. In general young (age between 20-45), women are the main target group and user segment for Sharing with others business models, although some of the interviewees mentioned that male interest is growing.

Meanwhile, Jack & Jones, a clothing brand for men, decided to stop a used clothing collection initiative in their shops due to lack of engagement from its customers. A company selling luxury second hand online also found different behavior for their male customers: spending less time on browsing and instead being focused on buying a specific product type.

"We want to reduce the environmental impact of textiles and change people's mindset to see textiles as a resource. We see this as part of our responsibility as a producer. Engaging in collection of used textiles is also a strategic decision to secure future resources. Not only for recycling: reuse should be the number one priority."

Cases were found where the customer segment changed due to the new initiative. For example, the Danish Salvation Army initially focused on its core segment, elder women, when it launched a vintage and redesign shop, but found that the consumer segment but has shifted to younger women as redesign has become trendy. This also changed the range of redesign products they offer.

Houdini Sportswear found that the customer segment for its more newly adopted leasing and sale of pre-used outdoor clothing, were younger than the customers for their more traditional purchase and own model. This may be a combination of both greater awareness of environmental impacts and smaller budgets of younger people. Those few companies such as Nudie and AMOV who also had a higher male segment are mostly focusing on the younger segment that is more responsive to alternative business models.

Companies/organizations offering sharing models found that their customers are focused in urban areas. This may be a result of cultural differences but also simply that it is simpler to engage in sharing in higher population densities.

3.4 timing for start

The interviewees were asked if there had been specific reason(s) for starting the business models when they did.

"We started in 2002. Our founders worked in a shop selling ties. They heard some of their female friends talk about swapping clothes. They set up a website and there was so much interest that they quickly dropped selling new products."

Strong parallels to the answers regarding motivation for engaging in the business models (see section 3.2) were identified. Several interviewees mentioned, for example, that they were responding to a growing awareness in society, and/or in their own minds, of the environmental impacts of textiles. The industry was beginning to come under fire, both with respect to chemical use and environmental impacts but also working conditions, heightened dramatically by the Rana Plaza disaster in 2013.

Many interviewees mentioned being inspired by the growing wave of the sharing economy as characterized by AirBnB, Uber and a simultaneous shift in especially younger people away from ownership as a means for accessing products and for expressing their personalities. Several felt that the time was ripe to apply these models to clothing.

The growth of the sharing economy has itself been initiated in part through the establishment of social media which have provided the main media for sharing transactions. Both Re:Second and Closay, peer-to-peer sharing platforms in Denmark, also mentioned the economic crisis as a turning point. As the owner of Re:Second put it, the crisis made overconsumption taboo, and opened the door to new more social means for gaining access to clothing.

"The timing was associated with a growing political focus on resource efficiency and circular economy. This growing awareness gave us a lot of publicity because there weren't many other players out there. Now the area is more established and it's a question of who can design the best business model and find the right investors and marketing strategy."

"Sneakers have become a highly attractive commodity, and have attracted men to our site who have otherwise been much less interested in second hand. We see that as a really positive signal."

The gathering momentum of sharing economy and reuse and recycling of textiles increased knowledge of how to establish such initiatives, which also acted as a trigger point. The representative from Jack & Jones noted that they would have engaged in such initiatives earlier if the knowledge had been there.

3.5 financial support

A third of the interviewed companies have received some form of financial support during start-up and/or operation of their business model.

Support has included free access to premises, start-up loans, start-up funding [starta-eget-bidrag], state/municipal support from Studieförbundet and project funding, e.g. for development of concept or (limited) operation, from municipal, regional and state authorities.

The origin of support varies and includes financial support from state and municipal authorities, e.g. environmental departments, Studieförbundet (municipal and state financing), Försäkringskassan [starta-eget-bidrag] and the state-owned start-up partner Almi in Sweden and regional development loans in the case of Denmark.

There were three types of business models, for which companies had not received any financial support: Own product take back and resale, General collection and resale and Longer technical life. The actors engaged in these business models are larger companies, predominantly fashion brands and traditional textile collectors and therefore, either non-eligible or less interested in financial support mechanisms.

On the other hand two out of the three Redesign business models and half of the Sharing with others business models got financial support. These models are characterized by small start-up businesses. Such start-up businesses often have business models for extended lifetimes of textiles as their primary business model, whereas large established fashion and textiles businesses are more likely to adopt sharing, leasing, redesign etc. as secondary business models i.e. add-ons to their main business concept. As Figure 9 shows, it is companies/organizations for which extended lifetime models are central to their business model who have received most external support.

For the companies/organizations for which extended lifetime initiatives are central to their business model, these initiatives also overridingly need to make money. Therefore, unsurprisingly only one of the companies/organizations that have received financial support to engage in initiatives did not have a profit motive when adopting these initiatives.

Other less formal kinds of support were also received. AMOV a fresh concept brand in Denmark, had received sparring support with students from Roskilde University, while a C2C sharing initiative has primarily survived to date from income generated by holding lectures on the sharing economy and providing advice for other start-ups.

Importantly, two of the interviewees found that financial support for business can be inconsistent. Supported start-ups risk having to return all financial support if they begin to make a profit during the period of assistance. This can discourage innovation.

"We had some problems with the mentor we were assigned via our business start-up fund. He signed a contract for telephone/internet services and for setting up of our website without consulting with us. We ended up walking out of the agreement and gave back the support we'd received."

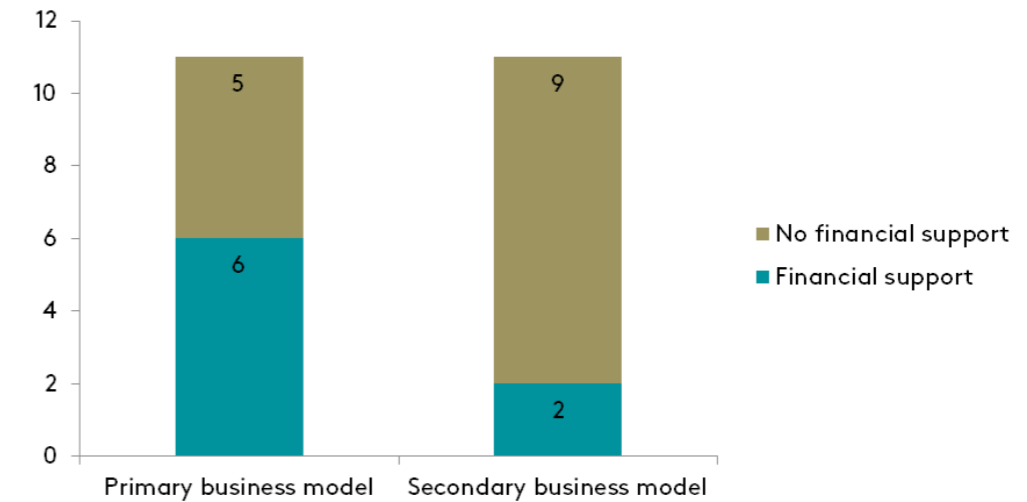


Figure 9 Overview of financial support for the business models in the 22 selected companies depending on the business models role in the companies (primary or secondary business model)

3.6 profitability

Figure 10 shows the current degree of profitability of the extended lifetime initiatives operated by the interviewed companies/organizations. As can be seen, the results are mixed. Six of the initiatives are already making a profit or breaking even without assistance. Others are only profitable or breaking even due to various means of support.

"We started in 2008. Today the sharing economy is widely accepted due to experiences with companies like Airbnb and GoMore. It's become mainstream and people have more trust in one another. It's now possible to make a viable business in sharing."

No less than five models are reliant on voluntary work or free materials (for example initiatives run by charities who receive clothing donations) to survive. Without this they would not be viable. Such models are very dependent on national policy with respect to voluntary work. Recent policies in Denmark, for example, which aim to get people more rapidly off social support, are putting such models at risk, even though the volunteers are gaining skills while engaging with these business models.

There are other examples where the models are only profitable because the owners/initiators are not drawing a wage from them; e.g. the Swedish clothing library Klädteket and the

renting company Rent-a-Plagg.

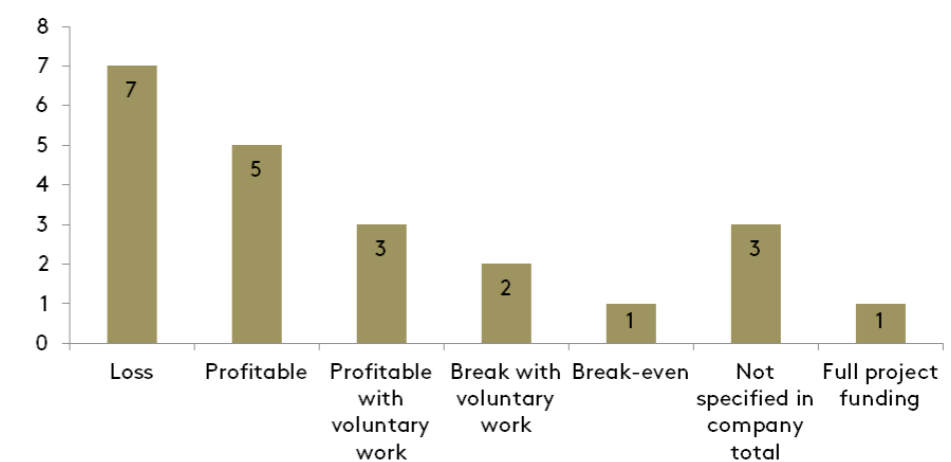


Figure 10 Current profitability of the 22 selected business models

Seven business models are currently making a loss. Many of the initiatives are relatively new, however, and expect better times in the near future: four additional businesses expect to break even or make a profit within the next two years.

Investments first need to be paid off before initiatives can break even, and several companies have been using the first years of income to reinvest in expansions. Danish Salvation Army made significant investments in sewing machines in their redesign shop and have also opened two new shops. Training of staff also takes resources but they expect break-even within the next year. Sharing company Closay and the second-hand initiative run by AffaldPlus have also reinvested money back into their businesses in order to ensure a more robust situation in coming years.

In two cases, initiatives failed during this delicate build-up period. Both Finnish Beibamboo's baby-clothing leasing initiative and Danish clothing library Chare say that they were close to breaking even at the point where their funds ran out and they were forced to stop the initiatives.

3.7 financial obstacles

As described above, there is a need for investments during start-up which challenges the business models during their initial periods. Securing private financing can be an issue for start-ups since investors and financial institutions often do not fully understand these new business models and how they work.

There are also a number of ordinary operating costs issues which challenge business models for extending life-times. Firstly, many of the models, e.g. like leasing, repair, redesign, require a high degree of labor. Labor costs can therefore be prohibitive, and as described above several of the companies engaging in them rely on voluntary work of staff or owners/initiators. This barrier is accentuated by the low production cost of new clothing due in part to cheap labor in Asia. This makes it difficult for business models requiring labor in Nordic countries to compete; and often their margin is significantly lower than their conventional competitors. One of the brands argued that their cost price is three times that of conventional new clothing.

Moreover, many of the companies must, or choose to, combine their models with higher quality clothing in order to optimize the model: sharing and leasing in particular rely upon clothing that can survive significant wear and tear from multiple users. Therefore, the raw materials – the garments – for the business models cost significantly more than fast fashion. This is a problem if consumers are not willing to pay a premium price. Moreover, due to the consumer segment they are focused on, the business models for extended life-time are often also offering organic and/or locally produced clothing within their model. Dutch MUD Jeans, for example, leases jeans produced in fair factories in Italy and Tunisia and made from organic cotton. However, the company has made the experience that the consumer is not willing to pay more than the standard price 100 EUR for regular jeans. This means their margin is lower than their competitors.

Logistics is also a cost issue for several of the business models. This is particularly the case for business models that primarily are engaged in exchanging garments between consumers or between consumers and the company, as e.g. in the case of MUD Jeans, Closay and online rental firm Curatorz. The brand Jack&Jones found that logistics including warehouse space is an issue for take-back systems that collect used clothing in hundreds of different stores. Curatorz is challenged with respect to logistics when picking up unsold collections from shops for resale.

As described above, the financial obstacles in the previous section are often only being overcome through companies/organizations access to voluntary labor, free materials, or value added tax (VAT) free status (charities). This could be assisted via sympathetic policy. Reducing VAT for leasing, second-hand and sharing would for example provide significant assistance. Reduced VAT has recently been given in Sweden for repair of clothing and if successful, could be expanded to include these other models.

"We didn't have a physical store, so we used postal services to send out baby clothes to the next user. Logistics costs were a key cause of our leasing model eventually failing. It also meant we couldn't expand to Sweden despite interest there. Today there are many more cheap logistics options than there were in 2010."



3.8 other obstacles

Figure 11 gives an overview of additional obstacles faced by business models for extended life time of garments. The obstacles are divided into four main areas: awareness and communication, practical obstacles, legal obstacles and, finally, technical and other obstacles.

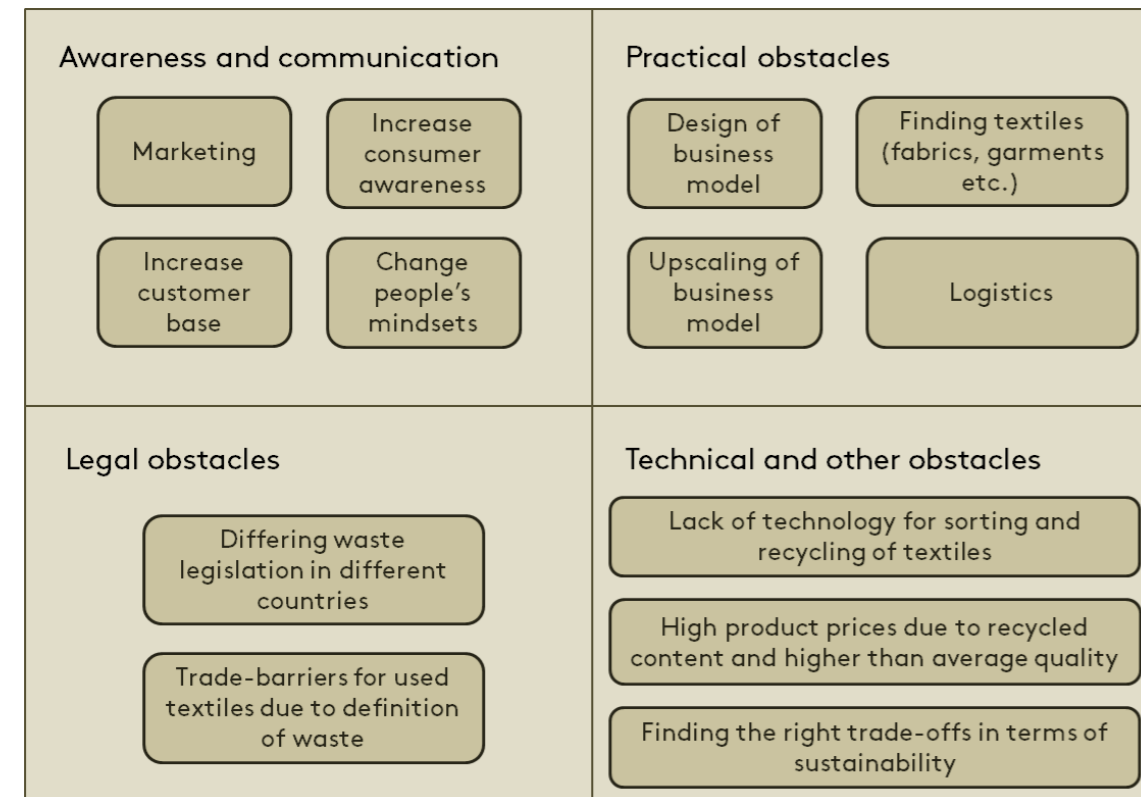


Figure 11 Identified other (than financial) obstacles for the 22 selected business models

Figure 12 shows the numbers of companies/organizations that mentioned these various types of obstacles. Most reference was made to practical obstacles, where logistics is dominant, as already identified earlier, particularly for business model type Sharing with others, but also for Own take-back and resale and General take-back and resale.

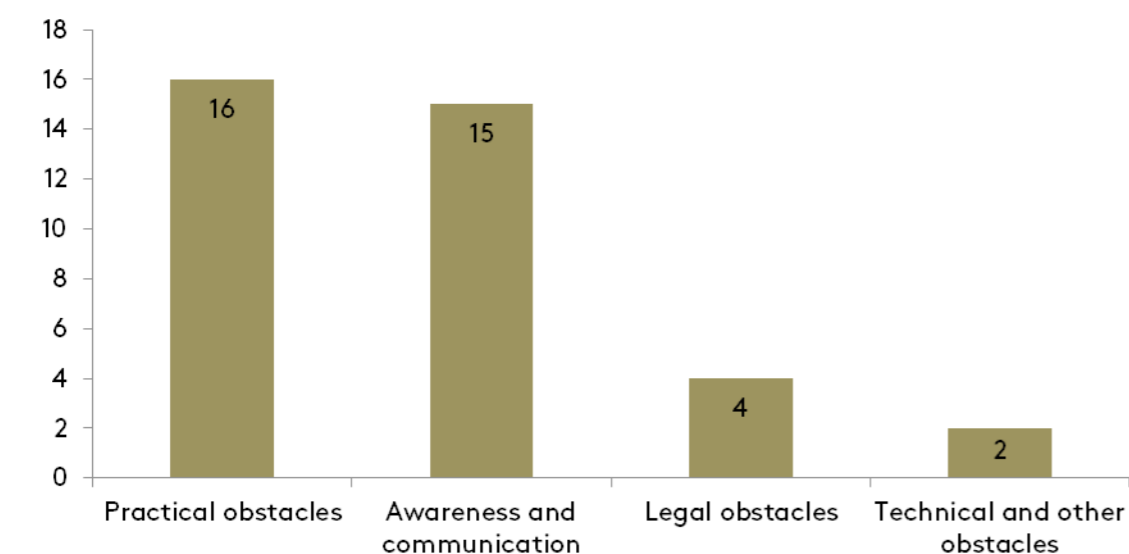


Figure 12 Distribution of identified other (than financial) obstacles mentioned by the 22 selected business models

The second most important practical obstacle is securing the right input materials, e.g. used textiles, fabrics and garments. Clothing library Chare, for example, found that some brands were worried about what supplying their clothing to Chare might do to their image, while others saw this as a marketing opportunity. The brand/designers supplying them were also inconsistent with price, delivery and quality making budgeting and planning difficult. As they and other clothing libraries, Klädoteket and Re:second found, lack of availability of a wide variety of clothing can reduce consumer interest.

"Creating a new business model from scratch is complicated - and we constantly find new areas that need to be improved. We aim to be a pioneer of change in the industry, but we're also very honest about not being perfect from the beginning."

"We had too little clothing in our clothing library for the first six months, which had major consequences for our customer interest, and slowed growth. We had problems getting interest from designers to donate their clothing. We underestimated what it takes to establish a brand and should have made more use of bloggers."

Close runner-up to the practical obstacles are issues concerning increasing awareness and communication. The most often mentioned obstacle in this area is to low consumer awareness both of environmental consequences of their behavior and the need to change mind-sets with respect to new ways of accessing clothing. This latter was named by seven companies/organizations including clothing libraries Klädoteket and Sabina and Friends, and skiwear hire firm Rent-a-plagg.

Communication was an issue both with respect to consumers but also company staff. Jack&Jones found that staff did not understand how to operate the in-store clothing take-back system properly and even staff high up in headquarters understood the initiative to be a campaign rather than a permanent system. Moreover consumers misused the bins filling them with rubbish. Beibamboo, meanwhile, found it difficult to communicate that they both sold and leased baby clothing. Presumably these kinds of communication problems will reduce as the models become more well-known as has happened for example with Airbnb and similar models. The Houdini Sportswear representative felt that communication on environmental consequences and alternative forms of consumption should be a coordinated effort by all parts of the fashion and clothing industry if it is to be successful.

"The bins we were using to collect customers' used textiles were problematic. Customers were throwing rubbish in them and the shops complained about the floor space they used up. In the future we'll collect over the counter instead. This will give the impression that the clothing still has value. A bin gives a feeling of delivering trash."

"Waste legislation differs from country to country: both in what is waste and who may collect it. We have been sued in Germany for collecting worn out textiles. There are also major barriers to the trade of reusable and recyclable products and materials between countries: both for delivering or obtaining recycled materials for our new products."

Legal obstacles were mentioned by both H&M and Jack&Jones in relation to their in-store used textile collection initiatives. They have both experienced problems maneuvering within the various legal definitions on legal ownership of waste in different countries in Europe and elsewhere which affects their right to collect used clothing some of which is non-reusable. Companies such as Houdini and Filippa K which only take-back their own clothing and only in a state that is ready or can be repaired for reuse do not experience such legal problems.

3.9 positive developments

"The Paris Agreement has in general raised awareness about the need for sustainable business. Also the new Swedish Action Plan for Sustainable Businesses."

When asked about policy initiatives and developments that support their business models, the interviewees primarily mentioned the recent political agendas at European and Swedish level regarding the circular and collaborative economies (five mentions each) and general increasing awareness for and interest in chemical control, repair, second-hand (five references). No specific policies were named in this context.

Two Swedish companies also stressed the discussion regarding the recent Swedish EPA proposal for the introduction of a Swedish extended producer responsibility (EPR) for textiles. Two companies made reference to the (since established) VAT reduction for repairs (from 25 percent to 12 percent) as positive developments in the policy area.

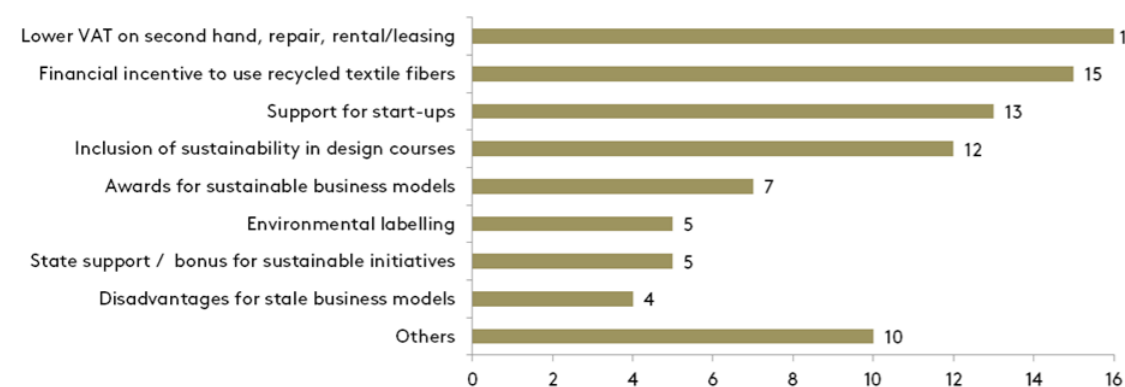
Several companies stressed a lack of regulation and policy instruments promoting business models for increased reuse, collective use and prolonged life time of textiles and that the process of increasing market share of such business models is too slow. According to some, it is individual businesses, and branch organizations, rather than government that are setting agendas for more sustainable fashion and textile production and consumption.

"It's unfortunate that while branch organizations such as Danish Fashion Institute and Dansk Mode og Tekstil are pressing a green agenda, the state government gave a completely opposing message by closing down the otherwise well-used Green Business Development Fund at end 2015."

3.10 beneficial policy instruments

Interviewees were asked what additional instruments could support their business models in the future. Figure 13 shows an overview of their responses.

Figure 13 References to beneficial policy instruments from the 22 selected business models



The three most often mentioned policy instruments were: Lower (or no) VAT on second-hand, repair services and rental/leasing business models, Financial incentives to use recycled textile fibers (instead of virgin textile fibers) and Support for start-ups. These three instruments correspond to more than half (51 percent) of the total references made. Lower VAT has since been adopted for repair of clothing but may be equally valid for leasing, renting and second hand. Both small start-ups and Beibamboo and Rent-a-plagg and larger companies like Filippa K were in agreement on this issue.

"A resource tax on new textiles could make a huge difference. There is currently little economic incentive to buy second-hand. We haven't changed our prices since 2006, but the price difference between our products and high street stores has fallen over this period as fast fashion gets ever cheaper."

In the case of financial incentives, measures such as resource taxes on virgin fibers were proposed. Myrorna noted that without such instruments a used T-shirt can cost just as much as a new one. Uniforms for the Dedicated noted that such incentives are already used in other sectors, for example, in penalizing high fuel-consumption cars. Some other novel tax incentives were suggested. Curatorz proposed economic incentives that penalized wastage in unsold collections, which can be reduced if the collections are donated for reuse.

Support for green start-ups do already exist but companies such as Curatorz and Klädoteket have found them difficult to match to the type of model being pursued by them. More tailor-made and accessible start-up support for textiles and sharing economy type businesses would be welcomed.

A further company also stressed the need for continuing support beyond the first two years of start-ups and focusing on ensuring that companies do not fail in the period immediately after funding ends. Under the conditions of some current financing pools, start-ups risk having to return all support should they begin raising a profit during the funding period; an event that would bankrupt them. Assistance needs to be redesigned so that support tails off as profits are raised.

Several companies noted the need for knowledge hubs that can assist companies with legal issues, advice on support funds and help them avoid common pitfalls with sharing economy business models.

"There are too many entrepreneurs that are beginning sharing businesses without really understanding what they're going in to. A knowledge hub or advice bureau could help start-ups avoid pitfalls."

The next three policy instruments most often referred to (28 percent of total references) are in one way or the other connected to providing and disseminating information: Inclusion of sustainability in design courses, Awards for sustainable business models and Environmental labelling.

"It was critical that our clothes could tolerate multiple users. Our clothes were rented out somewhere between 10-20 times. Whether a product can survive many users has often nothing to do with how expensive it is. It's about the type and thickness of material."

There were mixed feelings concerning labelling particularly with respect to quality and durability of clothing. Some felt that labelling could prove to be an effective tool in increasing the durability of products on the market. Others felt that it could be difficult to communicate a new label to consumers, in part due to a flooding of the market by different labels, and would be difficult to test and prove durability.

Companies like Nudie and Houdini call for tougher minimum standards for textiles (in durability and other issues like chemical restrictions). They do not feel that the responsibility should be placed on the consumer to make sustainable choices via using labels or otherwise. As Uniforms for the Dedicated puts it, in general companies can be expected to do anything that is permitted by law. Therefore, trailblazing and greener companies will always be undercut in price by companies that cut corners as long as it is within the law.

A need for regulative adjustments was mentioned in the "Other" group. Changes to, and harmonization of waste regulations to make it easier for companies to take-back used textiles without risking needing a waste collection permit was stressed by H&M and Jack&Jones.

"Responsibility should be taken jointly – we should spread knowledge so that people can make the right decision. We need responsible marketing, and policy that establishes carrots instead of sticks."



3.11 reflecting on stakeholders' experiences

Except for two brands, operating business models for increased reuse, collective use and prolonged life time of textiles 2010-2013 and 2015 onwards respectively, the companies operating such business models as their primary business model are "other actors" (as opposed to brands). The rest of the brands (fashion companies) operate such business model(s) only as secondary business models next to the traditional sale of clothes. With only one exception (enjoying full project funding) all companies operating the business models as their primary business model are aimed at making profit. This indicates that entrepreneurs and start-ups play a central role for initiating the shift towards more sustainable consumption models. At the same time, small and new companies are more volatile in the start-up phase than traditional (larger) brands (fashion companies), which may cover losses in other parts of the business and also can chose to test a secondary business model during a shorter period of time and still be able to cancel it if not successful.

Business models of the type Sharing with other users are highly overrepresented both in regard of being the primary business model and having profitability as the main objective. This reflects that the majority of the entrepreneurs and new start-ups (primarily "other actors" except charitable organizations) engage in these types of business models.

From the six primary business models for increased reuse, collective use and prolonged life time of textiles that has gotten financial support, five belong to the business model type Sharing with other users. The other two business models that have gotten financial support belong to the business model type Redesign. None of the interviewed transnational brands has gotten financial support, working as incentives and encouragement for introducing more sustainable business models for textile consumption.

The profitable business models are run by two charitable organizations with long experience in used textiles, two start-ups and one traditional textile producer. The business models of the type General collection and resale are overrepresented when it comes to profitability. Four out of five business models of the type Own product takeback and resale (reporting the financial results of the business models separately) make a loss. Additional three brands (fashion companies) engaged in General collection and resale, Longer technical life and Own product takeback and resale do not specify the financial profitability of their business models in the company totals.

High costs, e.g. for labor, location, communication, garments etc., is the main financial obstacle for the business models making a loss. Their main other obstacles faced by these business models are logistics, finding the right material(s) for the business model (e.g. fabrics, garments etc.) and to change people's habits and mind-set (customer behavior). The main obstacles (except financial obstacles) for both business models of the types Own product takeback and resale and Sharing with other users are logistics and to change customer behavior; and for business models of the type General collection and resale logistics and trade barriers.

4 Aspects of successful business models

The interviewed companies represent different types of business models with different stakeholders, motivations, approaches and experiences. However, the research enables us to ease out interesting points from the different lessons they have learned potentially helping other companies/organizations to build successful initiatives.

Half of the initiatives in this research are primary business models, i.e. the business models are central for the companies engaging in them. For the other half of the companies and organizations, particularly large well-established brands (fashion companies), the business models for increased reuse, collective use and prolonged life time of textiles are secondary and represent an exploration into new areas by the company.

14 out of 22 of the models/initiatives were intended to directly make a profit. Therefore financial profitability can be a measure of success for these. For four of the others, the initiatives were intended to indirectly lead to further profits for the company/organization via for example, giving the company a stronger environmental/ CSR profile and thereby attracting new customers. The final four initiatives had more altruistic aims, with focus on increasing awareness amongst customers and the general public on the environmental impact of clothing and that used clothing has a value that should be made use of after the first user is finished with it. Another measure of success here would be if the lifetime of textiles has been increased via increased take-back, reuse etc. Measures of success can therefore vary but include:

- Making a profit or break-even (if a non-profit company/initiative)
- Increased awareness/engagement from customers/citizens
- Increased active lifetime of textiles

Of the 14 initiatives whose aim was to directly bring in profits or break even, ten had achieved this, while four were still making a loss. Two of the latter, forecast that they would break-even and begin making a profit within the near future while the other two have since been abandoned. The own product take-back and resale has fared the worst of all model types with four out of six of these initiatives currently making a loss.

Models based on a longer technical life are also more often making a loss than a profit. Of the twelve sharing models, five are currently making a loss. General collection of used clothing for reuse and redesign are the models that are faring best. However, with such a small sample of each type of model, it cannot be concluded that these models are inherently more profitable.

Moreover, the approaches that have been used, even within the same group are widely varying. For example, sharing models including leasing of baby clothing, physical and online clothing libraries, sportswear hire, and C2C online sales, have very different approaches, platforms, products and customer profiles. Neither is it easy to distinguish between successful and less successful business models within the sharing group, other than that the two companies practicing leasing had so far not broken even.

Based on the stakeholder views from the selected business models for increased reuse, collective use and prolonged life time of textiles some potential success factors can cautiously be identified:

• Access to (free) materials

Business models sourcing their materials from donations are more likely to break even or make a profit, than models where the clothing central to the model has come at a cost to the company/organization.

• Access to volunteers

A number of business models have only broken even due to their ability to attract voluntary work, often due to charity status or because the initiative is community-driven. While this provides opportunities for more community initiatives that have both social and en

vironmental benefits, it also makes them vulnerable to changes in social and employment policy. Moreover, the potential for scaling up to play a large role in transitions of the way we gain access to clothing may be limited.

• Efficient logistics

Stakeholders stress that logistics is both costly and sometimes hard to scale up. Four out of seven models/initiatives that are currently making a loss, or have already failed mention difficulties and costs associated with distribution/logistics as a main challenge. Particularly the business model types Sharing with other users and Longer technical life (e.g. repair services) are depending of creating (cost) efficient logistic solutions.

• Finding the right material/garments

It is of particular importance to sharing type business models such as leasing, hiring, clothing libraries etc. which are not designing their own clothing to find sources of clothing which meet the needs of the business model in terms of style, durability, functionality etc. It is worth carrying out research and making good agreements prior to launching a model.

• Finding understanding from investors/financial institutes

Particularly in the start-up phase, new business models and initiatives may have trouble to get full cost coverage and do not have financial means to carry out marketing, quickly building a customer base and fully develop the business model. It is important that private or public financing is available to assist the business models during the first years and that the financiers can understand the particular issues faced by these new types of business models and their particular challenges.

• Good agreements with suppliers

The suppliers to a sharing business model need to understand the needs of the business since this business model type is fairly new. Quality and durability needs are key, but for some companies also issues like control of chemicals and use of organic or recycled/ recyclable material. It is also important not to be tempted to buy too much stock in the start-up period.

• Keeping the customer interested

It can be important for online sharing models to either rate clothing so that the highest quality is shown first, or tailor what a user is exposed to according to their previous preferences.

• Rapid establishment of the brand/business model

For clothing libraries and C2C sharing models supply of a sufficient “bank” of clothing or customers to share their own wardrobes is critical. A momentum needs to be gained rapidly. If growth is too slow and there is too little on offer, the existing customers will leave the business model. Therefore, using resources to rapidly establish the brand in people’s minds can be key. This may also involve changing consumer mind-sets.

• Time since establishment

The longer the time period that the model has been operating the more likely that it is breaking even or raising a profit. This is a fairly unsurprising result and illustrates perhaps a combination of the need for investment, and the time necessary to overcome teething problems.

Stakeholders testify that the first year(s) of starting a new business model for increased reuse, collective use and prolonged life time of textiles are very challenging financially. Several of the interviewees for example relay on other incomes. There is a high risk for many new start-ups to failing to overcome the “first tough year(s)”, optimizing the business model, creating a solid customer base etc.

Several of the interviewed companies state that there is a slow increase in consumer awareness and this is also stated as one of the reasons for introducing the new business models. At the same time, (still) low consumer awareness and the challenge of changing people's habits and mind-set (customer behavior) are stressed by a third of the interviewees as main challenges for their business models. (Too) slow increase of consumer awareness and acceptance of new ways of consuming textiles cause a risk for the business models for increased reuse and collective use of textiles.

5 conclusions and next steps

5.1 reflecting on the results

A wide range of business models for increasing the active life-time of textiles have emerged in recent years such as product take-back and resell, leasing, repair services, design for longer life, clothing libraries, second hand platforms, redesign etc. These have emerged in response to a number of factors. Not least an increasing consciousness both in the branch and amongst consumers of the need to address the environmental and social impacts of fashion. At the same time, the growing wave of the sharing economy as characterized by AirBnB, Uber etc. and a shift by especially younger generations away from ownership as a means for accessing products, inspired some to apply these concepts to clothing and fashion.

In some cases the business models are the central element of new small start-up companies and organizations. In others, large traditional brands (fashion companies) have entered the arena engaging in initiatives like take-back systems, repair and sale of used textiles to complement their existing mainstream business models. While for the former, it is critical that the concepts themselves make money or at least pay for themselves, for the latter this is less essential. Some traditional brands (larger companies) experimenting with new (secondary) business models have the aim to make a profit from them whereas others have other key motives, e.g. improved image, a genuine wish to take responsibility for the negative impacts of the industry, and in the longer term securing raw materials. Not all interviewed companies engaging in business models and initiatives for extending active lifetimes are currently earning money from them. Of the 14 whose aim was to directly bring in profits or break even, ten had achieved this, while four were making a loss. Two of the loss-makers, however, forecast break-even and begin making a profit within the near future.

The initiatives face a number of financial obstacles, partly depending on the business model type. Models like leasing, repair and redesign require a high degree of labor close to the customer and labor costs in Nordic countries can be prohibitive. Moreover, the clothing which is central to sharing models needs to have high durability and therefore can cost significantly more than fast fashion. On the other hand the more they are shared between consumers, the lower the costs are per use. However, exchanges of clothing between consecutive users can require complex and costly logistics.

Financial obstacles are often only being overcome through companies/organizations securing access to voluntary labor, free materials, or value added tax (VAT) free status. This could be assisted via sympathetic policy. Reducing VAT for leasing, second-hand, leasing and sharing (as has recently been given for repair in Sweden) could for example provide significant assistance, as would social support policy that allows for periods of voluntary work.

Other identified obstacles such as low awareness and acceptance of alternative types of business models amongst consumers will presumably reduce as the models become more widespread. The same is true with respect to lack of awareness and understanding of the particular needs of these models amongst suppliers of clothing and suppliers of financial services. Here, it is critical that the business models reach a critical mass in the market, which is why targeted seeding and start-up funding can play such an important role.

Some general positive political initiatives and developments were recognized by companies and organizations, e.g. that circular economy and sharing economy (collaborative consumption) is rising on the political agenda. Moreover, several of the interviewees experienced an increased (general) customer awareness for and interest in chemicals, repair and second-hand. However, engaged companies and organizations miss further incentives and policy instruments such as already mentioned decreased VAT on second hand, repair, rental/leasing, plus financial incentive to use recycled textile fibers, support for

start-ups and inclusion of sustainability in design courses. A few companies also hope for minimum quality standards in textile products and their production rather than relying on consumer preference. Finally, companies/organizations engaging in take-back initiatives either for own resell or for sale/donation to others expressed a need for clearer regulation and guidance on who has the right to collect used clothing and textiles.

5.2 recommendations

In regards of the textile industry the overall Swedish environmental policy includes among other things an objective to minimize environmental and health problem caused by textile consumption (Naturvårdsverket, 2016). Business models promoting reuse, collective use and prolonged life time of textiles can contribute to this goal. In this context, the Swedish Environmental Protection Agency (EPA) has proposed support to sustainable business models by financial support for small and medium-sized companies in the textile and fashion industry (Naturvårdsverket, 2016). The Swedish EPA also proposes an information campaign targeted at consumers, increasing awareness of the environmental and health-related problems of textile consumption and more sustainable consumption patterns (Naturvårdsverket, 2016).

Stakeholders see a current lack of incentives and policy measures supporting business models promoting reuse, collective use and prolonged life-time of textiles. Moreover, the need for policy measures creating incentives for more sustainable business models are judged to exceed the measures proposed by the Swedish EPA, i.e. additional policy measures are necessary. Creating such incentives would most certainly accelerate the process of shifting to more sustainable consumption and supply patterns for garments and textiles. Before introducing policy instruments promoting reuse, collective use and prolonged life-time of textiles, the following questions should be addressed:

- What types of business models should be promoted?
- Do different types of business models need different kind of support/incentives?
- What actors should be included in the incentive schemes?
- What type of support/incentives is most effective?
- Changing people's habits and mind-set (customer behavior) generally takes time – how can this process be accelerated?

Meanwhile, a number of success factors for businesses/organizations under current conditions have been cautiously identified (see section 4), that might be useful to consider for emerging new business models for increased reuse, collective use and prolonged life time of textiles. These success factors include e.g. getting access to free materials, having access to volunteers, finding the right material/garments, making good agreements with suppliers, keeping the customer interested, rapid establishment of the brand/business model and finding understanding investors/financial institutes.

5.3 next steps

The collected data from stakeholders involved in business models for increased reuse, collective use and prolonged life time of textiles and the identified potential success factors has already served as important background information for Task 3.2.4 on identifying policies for support of such business models and will also feed in to Task 3.2.5, which includes impact assessment and recommendations of selected measures.

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annexes

annex 1

result of screening of different business models

In order to collect examples of different business models for increased reuse, collective use and prolonged life time of textiles a screening of relevant companies and initiatives was carried out. The result of the screening is summarized in Table 1.

Table 1 Collected examples of business models for increased reuse, collective use and prolonged life time of textiles

	Organization	Country	Type of business model
1.	AffaldPlus	Denmark	General collection and resale / charity
2.	AMOV	Denmark	Own product take-back / resale Sharing with others Longer technical life
3.	Arnlunds skrädderi	Sweden	Redesign
4.	Ateljé 43	Sweden	Redesign
5.	Beibamboo	Finland	Sharing with others Longer technical life
6.	Beyond retro	Sweden	General collection and resale / charity
7.	Blocket	Sweden	Sharing with others
8.	Boomerang	Sweden	Own product take-back / resale Longer technical life
9.	Byttemarked	Denmark	Sharing with others
10.	Chare Room	Denmark	Sharing with others
11.	Cissi och Selma	Sweden	Redesign
12.	Curatorz	Sweden	General collection and resale / charity Sharing with others
13.	Eileen Fisher	USA	Own product take-back / resell Longer technical life
14.	Emmaus	Sweden	General collection and resale / charity
15.	Erento online	Sweden	General collection and resale / charity
16.	Filippa K	Sweden	Own product take-back / resell Sharing with others Longer technical life
17.	Frelsens Hær	Denmark	Redesign
18.	Got2get	Sweden	General collection and resale / charity
19.	G-Star	The Netherlands	Own product take-back / resale
20.	H&M	Sweden	General collection and resale / charity
21.	Haglöfs	Sweden	Own product take-back / resale
22.	Houdini	Sweden	Own product take-back / resale Sharing with others

	Organization	Country	Type of business model
24.	Jack and Jones	Denmark	Own product take-back / resale
25.	Kirkens Korshær	Denmark	General collection and resale / charity
26.	Klädbiblioteket	Sweden	Sharing with others
27.	Klädoteket	Sweden	Sharing with others
28.	Klättermusen	Sweden	Own product take-back / resale Longer technical life
29.	Levis	USA	Own product take-back / resale
30.	Lånegarderoben	Sweden	Sharing with others
31.	Martinson	Sweden	Sharing with others
32.	MUD Jeans	Holland	Sharing with others
33.	Myrorna	Sweden	General collection and resale / charity
34.	Naturskyddsföreningen	Sweden	Sharing with others
35.	NOMO Jeans	Finland	Longer technical life
36.	Nudie Jeans	Sweden	Own product take-back / resale Longer technical life
37.	Orkan Lia	Sweden	Redesign
38.	Patagonia	USA	Own product take-back / resale Longer technical life
39.	Peak Performance	Sweden	Own product take-back / resale Longer technical life
40.	Polarn o. Pyret	Sweden	Own product take-back / resale
41.	PRAG	Denmark	General collection and resale / charity
42.	Rags to riches	Sweden	General collection and resale / charity
43.	Rebelle	UK/Germany	Redesign
44.	Red Cross	Sweden	General collection and resale / charity Redesign
45.	Remanns	Sweden	Sharing with others
46.	Renosyd	Denmark	General collection and resale / charity
47.	Rent-a-plagg	Sweden	Sharing with others
48.	ReSecond	Denmark	General collection and resale / charity Sharing with others
49.	Sabina and friends	Sweden	Sharing with others
50.	Share Your Closet	Denmark	Sharing with others
51.	ShareWear	Sweden	Sharing with others
52.	Stadsmissionen	Sweden	General collection and resale / charity
53.	Stormberg	Norway	Own product take-back / resale
54.	The Cirqle	Sweden	General collection and resale / charity
55.	Tradera	Sweden	Sharing with others
56.	Trendsales	Denmark	General collection and resale / charity Sharing with others
57.	Uniforms for the dedicated	Sweden	Own product take-back / resale
58.	Urban outfitters	UK	Own product take-back / resale
59.	Vigga	Denmark	Sharing with others

annex 2

list of interviewed companies and initiatives

Interviews were carried out with representatives from 22 companies and initiatives engaged in business models for increased reuse, collective use and prolonged life time of textiles. Table 2 gives an overview of the interviewed companies and initiatives.

Table 2 Overview of the companies and initiatives selected for interviews

	Organization	Interviewee	Origin	Web page
1.	AffaldPlus	Henrik Bro Andersen Manager	Denmark	www.affaldplusbutikken.dk
2.	AMOV	Kasper Eis CEO and Founder	Denmark	www.amovapparel.com/amov-concept
3.	Beibamboo	Nina Ignatius Founder	Denmark	www.beibamboo.com/
4.	Chare	Susanne Krogh Petersen Director	Denmark	www.facebook.com/charerom/
5.	Curatorz	Tiffany Donner Nilsson VP Sales & Operations & Shirley Å Johansson CEO & CTMO	Sweden	www.curatorz.com
6.	Filippa K	Elin Larsson Sustainability Director	Sweden	www.filippa-k.com/leasethelook www.filippa-k.com/se/filippak-world/collect www.filippaksecondhand.se
7.	Frelsens Hær	Jette Skov Moderator	Denmark	www.redesign.nu/
8.	H&M	Cecilia Strömblad Brännsten Sustainability innovation responsible	Sweden	www.hm.com/se/garment-collecting
9.	Houdini	Mia Grankvist Marketing	Sweden	www.houdinisportswear.com/se/sustainability/houdini-repair www.houdinisportswear.com/se/sustainability/houdini-rental www.houdinisportswear.com/se/sustainability/second-hand

Organization	Interviewee	Origin	Web page
10. Jack and Jones	Kerli Kant Hvass Sustainability Project Manager	Denmark	www.jackjones.com/dk/da/home?gclid=CPux1rbU888CFQLicgodN38Lvg
11. Klädoteket	Louise Eriksson & Sara Habte Selassie Founders and members of the board	Sweden	www.kladoteket.se
12. MUD Jeans	Bert Van Son Founder	Netherlands	www.mudjeans.eu
13. Myrorna	Emma Enebog Sustainability Manager	Sweden	www.myrorna.se
14. Nudie Jeans	Eliina Brinkberg CSR manager	Sweden	www.nudiejeans.com
15. Orkan Lia	Karolina Svensson Founder	Sweden	http://orkanlia.se
16. Red Cross	Annelie Nyqvist Redesign workshop leader	Sweden	www.redcross.se/behover-du-var-hjalp/kreativt-skapande/
17. Rent-a-plagg	Magnus Sellberg Sustainability & Sales	Sweden	www.rentaplagg.se
18. ReSecond	Claus Skytte Founder	Denmark	www.resecond.com/
19. Sabina and friends	Unni Warner Markets	Sweden	http://sabinaandfriends.se
20. ShareWear	Henrik Selin Intercultural dialogue Swedish Institute	Sweden	http://sharewear.se
21. Trendsales	Eva Kemp COO	Denmark	www.trendsales.dk
22. Uniforms for the dedicated	Michael Lind Head of sustainability	Sweden	http://uniformsforthededicated.com

annex 3

short descriptions of the selected business models

Interviews were carried out with 22 companies and initiatives operating business models for increased reuse, collective use and prolonged life time of textiles. This annex includes a short overview of the business models.

AffaldPlus

Name of company	AffaldPlus
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Plusbutikken
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

AMOV

Name of company	AMOV
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input checked="" type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Beibamboo

Name of company	Beibamboo
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Chare

Name of company	Chare
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Curatorz

Name of company	Curatorz AB
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Sky closet
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Filippa K

Name of company	Filippa K
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Lease the look / leasing In store collection Filippa K second-hand store
Business model type(s)	<input checked="" type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Frelsens Hær

Name of company	Frelsens Hær (Danish Salvation Army)
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Redesign CPH
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input checked="" type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

H&M

Name of company	H&M
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Houdini

Name of company	Houdini
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input checked="" type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Jack&Jones

Name of company	Jack&Jones
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Give Back. Reuse and Recycle
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Klädoteket

Name of company	Klädoteket
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

MUD Jeans

Name of company	MUD Jeans
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input checked="" type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Lease A Jeans
Business model type(s)	<input checked="" type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Myrorna

Name of company	Myrorna
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Nudie Jeans

Name of company	Nudie Jeans
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input checked="" type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input checked="" type="checkbox"/> Longer technical life <input checked="" type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Orkan Lia

Name of company	Orkan Lia
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input checked="" type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Red Cross (Sweden)

Name of company	Red Cross (Sweden)
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	Redesign workshop
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input checked="" type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Rent-a-plagg

Name of company	Rent-a-plagg
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

ReSecond

Name of company	ReSecond
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Sabina and friends

Name of company	Sabina and friends
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

ShareWear

Name of company	Visit Sweden & Svenska Institutet
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	ShareWear
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

Trendsales

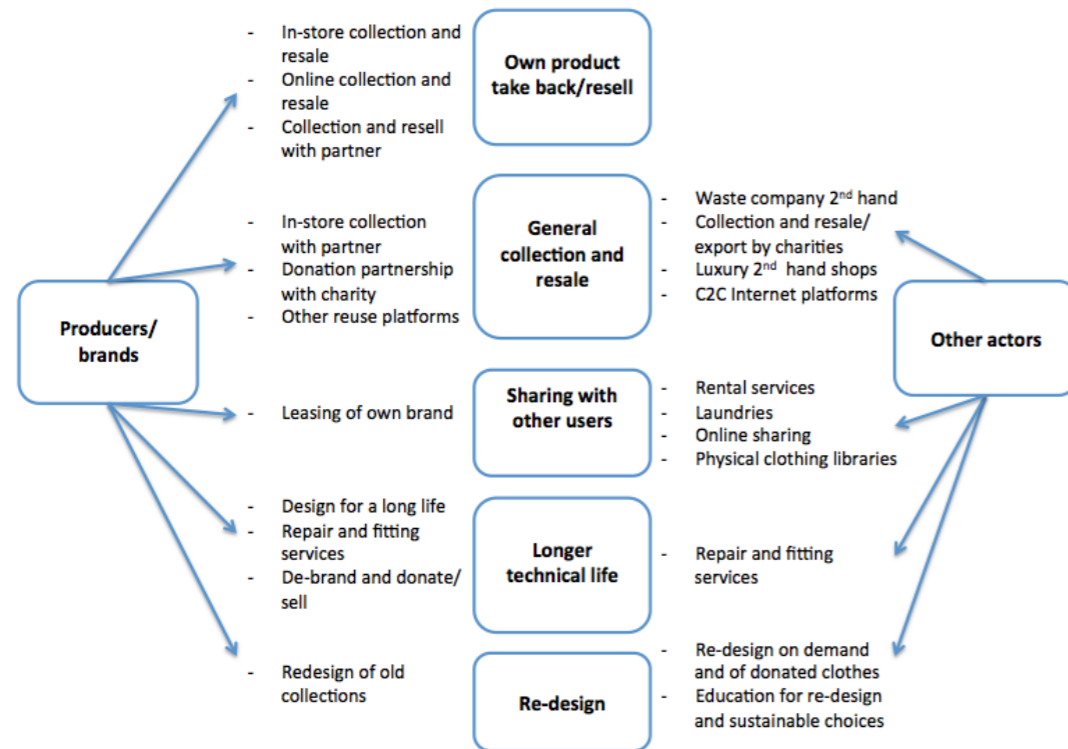
Name of company	Trendsales
Type of actor	<input type="checkbox"/> Textile producer / brand / fashion company <input checked="" type="checkbox"/> Other actor
Origin	<input type="checkbox"/> Sweden <input checked="" type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input type="checkbox"/> General collection and resale <input checked="" type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input checked="" type="checkbox"/> Primary (main or only) business model of the company <input type="checkbox"/> Secondary business model of the company

Uniforms for the dedicated

Name of company	Uniforms for the Dedicated
Type of actor	<input checked="" type="checkbox"/> Textile producer / brand / fashion company <input type="checkbox"/> Other actor
Origin	<input checked="" type="checkbox"/> Sweden <input type="checkbox"/> Other Nordic country <input type="checkbox"/> Country outside the Nordic region
Name of business model(s)	The rag bag
Business model type(s)	<input type="checkbox"/> Own product take back and resale <input checked="" type="checkbox"/> General collection and resale <input type="checkbox"/> Sharing with other users <input type="checkbox"/> Longer technical life <input type="checkbox"/> Redesign
Business model's role	<input type="checkbox"/> Primary (main or only) business model of the company <input checked="" type="checkbox"/> Secondary business model of the company

annex 4

interview guide opportunities and obstacles for new business models



1. What is the type of business model/activity relevant to the above diagram (including all subcomponents)?
2. Is it the aim that the model/activity will create profit?
 - Direct profit?
 - Indirect profit via improved PR/CSR?
 - No – is a not-for-profit organization with social/environmental goals
3. Please describe the business model/activity
 - how it functions,
 - the consumers role
 - how each partner gains economic or other value
 - how the product's life is extended
 - end of life for the product
4. How did the business begin - where did you get the idea from?
 - new start up but inspired by others
 - developed from existing more traditional business model
 - expanded model from other kind of products over to textiles
 - were approached by partner etc.

5. Do you have any specific customer profile with this business model? Do you see trends in your customer base (e.g. certain age, gender, profession, interests etc. of the customers)?
6. Why now? Any particular developments that meant that this was a good time to launch such a model?
7. Have you had any financial/other assistance in start-up and/or running phases and who has provided this (e.g. central government funding, branch organizations, innovation networks etc.)?
8. Is the business model breaking even/making a profit?
 - If yes how many months has it taken to break even?
 - If no what is the projected breakeven point?
9. What is the financial perspective for the next year(s)?
10. Has the model/activity already been dropped/failed? If so why (see also the questions below)?
11. What are/were the largest economic obstacles to breaking even?
 - what are the most critical cost components
 - what lies behind these and what if anything is inhibiting income
12. Are/were there additional obstacles/challenges that you have been facing in the model? E.g.
 - legal
 - regulatory
 - organizational
 - competitive
 - lack of customer awareness
 - logistics
 - product development
13. Have there been policy developments over the past few years that have assisted your business model? Have there been developments that have inhibited your model?
14. Would any of the following policies directly or indirectly assist your business model/activity?
 - VAT reductions/removal for second-hand goods and repair services and leasing?
 - Government funding pool for start-up investments in new business models within textiles.
 - Financial support for second-hand sales in city centres (by second hand businesses and/or high street retailers
 - Long term unemployed wage subsidies earmarked for sustainable business models plus tax benefits for social enterprises.
 - Resource tax on new textiles
 - Financial assistance and demands for inclusion of sustainable design
 - Courses in design schools.
 - Label (Nordic Swan, Higg Index or otherwise) with durability information/criteria
 - Minimum warranty periods for (certain types of) clothing/textiles
 - Knowledge hub and advice bureau for start-up of new business models
 - Sustainable business awards for new business models in textiles
15. Have you alternative suggestions for new or adjusted policy, new or adjusted regulations that could directly or indirectly assist your business model? Think e.g. of policies/initiatives that could
 - reduce costs for you
 - increase costs for 'bad' models
 - increase access to consumers
 - increase awareness of consumers
 - increase cooperation with other actors
 - set minimum requirements which give advantages to your model



Mistra Future Fashion is a research program that focuses on how to turn today's fashion industry and consumer habits toward sustainable fashion and behavior. Guided by the principles of the circular economy model, the program operates cross disciplinary and involves 50+ partners from the fashion ecosystem. Its unique system perspective combines new methods for design, production, use and recycling with relevant aspects such as new business models, policies, consumer science, life-cycle-assessments, system analysis, chemistry, engineering etc.

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