Culture of Care

Fostering Circularity of Furniture

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CULTURE OF CARE

Fostering Circularity of Furniture

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Abstract

The rate at which the human race is exhausting the planet’s resources, a transition from a linear economy to a circular economy has become necessary. More importantly the success of circular economy is dependent on the consumer’s everyday actions and practices. This project looks to contribute to that smooth transition at a consumer behavior level of furniture consumption through market actions. It specifically focuses on the sustainable consumption of the sofas to be able to collect data and actionable insights so that it can serve as an example that can be applied to all types of furniture.

The project created a framework from literature review on consumer behavior of furniture, sustainability and circular economy. Furthermore, it used several design methods to collect and analyze the data, before arriving at the final design project. The resulting project is called the ‘culture of care’. Based on the collected actionable insights throughout the project, the culture of care project proposes several circular based market actions in the form of service design, product design and product-service design to maintain and repair sofas in the hands of the consumers.

Keywords: circularity of furniture, sustainable behavior, furniture consumption, care, repair
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1. INTRODUCTION

1.1 Brief Project Description and Presentation of Results

Furniture is disposed in unimaginable volumes caused by unsustainable practices. Interventions from a broader circular economy perspective is seen as a direction to solve for reducing the taking, making and disposing volumes of furniture. This challenge and responsibility are taken into consideration by several product and service companies to transition towards circularity of materials through circular business models. One such company is IKEA, who is also the stakeholder for this master thesis project.

The success or failure of circular business models is influenced by consumer’s everyday practices and actions. The design project focuses on finding concepts and ideas to bridge the gap between IKEA and its consumers for a more conscious furniture consumption. The scope of the project focused on solving for circularity of sofas based on a preliminary research on identifying that sofa is one of types of furniture that is disposed the most and also more often.

The resulting design project conceptualized and visualized different touch-points between IKEA and IKEA sofa consumers through service design and product design concepts. The project goal was to create a culture of care of sofas as a change behavior amongst the IKEA sofa consumers through the proposed product and service concepts. The reason being that the sofas can be maintained and repaired for extending the product life for a second life and beyond. This way to supplement circular business models such as second hand furniture sales, leasing and subscription.
1.2 Personal Background and Motivation

During the exploratory research phase of this project, I was mind mapping and educating myself on the circularity of furniture and what it ideally should looks like (see figure 1). There was a roadblock identified after the point of disposal of furniture. On further investigation through literature, survey with a random sample (see Appendix 1) and an observation at the recycle station, it was identified that large volumes of sofas among other furniture were disposed because they were worn out and wasn’t needed anymore and were destined for incineration or the landfill. There was a lack of insights and solutions against dumping or incineration of sofas that needs to be addressed and solved for. As a furniture designer and consumer, I felt responsible and nervous for the fast rate depletion of resources when only considering the sofas and its waste generation within the finite boundaries of this planet. This motivated me to solve by bringing together the furniture developers, suppliers and the furniture consumers in better cohesion towards a sustainable and circular consumption of sofas.

1.3 Aim and Purpose

Circular economy is successful when all the stakeholders of the cycle (see figure 1) are able to function sustainably from an environmental, economic and social perspective. The aim of the project is to contribute towards a transition from a high functioning linear economy of sofa consumption towards a sustainable consumption behavior through circular market actions and strategies. The purpose of the project is to innovate strategies to bring about change behavior amongst sofa consumers for conscious consumption which can also contribute towards smoother transition to circular business models for sofa brands and product companies.

This project is also made in collaboration with the circularity team of IKEA of Sweden. IKEA (Ingvar Kamprad Elymtaryd Agunnaryd) is a Swedish company founded in 1943. It is the world’s largest seller of furniture, operating more than 300 stores across the globe. They specialize in low-priced products, flat packing of furniture and undertake their own design work (Lewis, 2016).

The scope with IKEA for this project is to assess sofas and consumer behavior around care and repair of the furniture. This is so that they can cater to sustainable consumer behavior and needs of extending product life in the hands of the consumers and also in turn equip IKEA’s slow transition towards circular business models.
Interventions needed from industry, market and users to solve for this messy GAP

Figure 1: Mind Map for Circular Furniture
1.4 Delineation of Field of Study

Based on current consumption patterns, furniture went from being family heirlooms to simply seasonal and disposable items (Forlano, 2015). Although this attitude has been fueling the furniture industry from an economic perspective, this linear consumption of take-make-dispose (Lacy & Rutqvist, 2015) will not be sustainable in the near future. The reason being that the raw materials that are key to modern economic growth are at a risk of exhaustion in the coming 50 years (Lacy & Rutqvist, 2015) and secondly because industrialization and mining of raw materials is causing global warming. While the demand for products are rising with the rising population, large volumes of products are being discarded each year. For example, Europe accounts for 10 million tonnes of furniture discarded both by businesses and consumers every year (Forrest, Hilton, Ballinger & Whittaker, 2017) while the United States of America accounts for 9.8 million tonnes of furniture (Uysal, 2014) disposed every year.

Since the recent past, efforts are made to increase product lifespan so as to decrease waste as well as environmental degradation (Hebrok, 2016). The main challenge to solve is for a circular consumption of used furniture items or furniture parts at a mass scale so as to counter the large quantity of disposed furniture from being incinerated or buried in the landfill. The landfill is the least favorable option of waste disposal treatment while incineration is not considered to be circular at all (Uysal, 2017; Bocken, de Pauw, Bakker & van der Grinten, 2016).

When evaluating global warming impact in the life cycle assessment of furniture, the pre-manufacturing phase causes the highest environmental impact (Uysal, 2017). Therefore, post first-use scenario of the furniture recovery can have an impactful influence when developing a furniture product and evaluating its life cycle. Priority must be given for re-use or repair or re-manufacture from a circularity perspective to extend product life (Gunter, 2013).
1.5 Delineation of Project

Design for circularity has existed since many years but has gained momentum outside academia only now, after the European Union has laid emphasis on ‘Closing the Loop’ for product manufacturing in the European Commission of 2015 (Daae, Chamberlin & Boks 2018). Literature and studies around circular economy has extensive knowledge around the materials of science and economics. This knowledge would be more effective when actually practiced by the consumers in the desired way (Daae et al., 2018). The focus for sustainable design must also begin from the user perspective (Richardson, Irwin & Sherwin, 2005) and not simply from the product and life-cycle perspective (Uysal, 2017). Influencing people’s everyday activities and practices of consuming products and services in the desired way (as designed) increases the likelihood of the success of circular business models (Daae et al., 2018). For example, the environmental conscious clothing brand Patagonia provides repair guides, services, a second hand platform for Patagonia products and not simply as a product company.

Similarly, this project focuses to conceptualize and strategize a combination of product and service design ideas to influence the behavior around sofa consumption towards product life extension as well as material life extension. In this case, the project strives to better equip IKEA sofa consumers for conscious consumption and delay the product from reaching the landfill or for incineration.

1.6 Formulation of Question

How to extend the life of sofas for sustainable consumption models?
1) How to maintain sofa life in the hands of the consumers?
2) How to maintain sofa life for changing users?
2. THEORETICAL AND METHODOLOGICAL FRAMEWORK

2.1 Theoretical Framework

The following literature review was made in order to create a base of understanding of what sustainable consumption entails when it comes to a furniture company and a furniture consumer. It covers furniture consumption behavior, product lifetime and attachment, circular business models, circular product design strategies, emotional design and sustainable behavior change dimensions. The theory is used to create a framework that guides the design process (see figure 2).

According to Kotler & Keller (2012) consumer behavior while acquiring a product is consolidated into five chronological steps which are need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase behavior. The same can be applied to the consumption behavior of durable products such as furniture. Lihra & Graf (2007) mention the main reasons to consume furniture can be viewed as 1) need for new furniture for a new look, 2) need to replace old or broken furniture, 3) need to add furniture to an existing set-up and 4) fondness experienced for a furniture product. Bhamra, Lilley & Tang (2011) also explain consumption includes selection, purchase, use, maintenance, repair, disposal and recycling of product or service.

2.1.1 Purchase and User Behavior

Factors influencing the actual purchase of a product are price, quality, brand value, post sales service and payment facilities (Oblak et al., 2017). A study on buying behavior of furniture suggests that while acquiring furniture, people are looking at the experience of the furniture use once acquired and in use. Consumers view the furniture as an extension of their self and social identity (Ponder, 2013). Consumers are also said to be under immense pressure to keep updating their products in part or whole to keep up with their peers and family since it somewhat signifies personal success (Cox, Griffith, Giorgi & King, 2013). Fashion is also a major factor that influences the consumers purchase decision that can state their taste and style (Maťová, Kaputa, Triznova & Dovčíková, 2018).

Consumers rarely are seen considering environmental impacts when they are buying new or replacing old products with new before the actual end of furniture life. Cox et al. (2013) categorized product lifetime and product value as perceived by consumers into three categories: 1) Up-to-date products that are changed often for their look and change in technology. E.g. cushions, lamps and so on. 2) Workforce products that are reliable for a longer lifespan and discarded only when broken because they are valued for their service utility. E.g. large items of furniture. 3) Investment products that are perceived to be special, usually expensive, have to save up for the purchase and
Figure 2: Theoretical Framework
expect care while in use. E.g. Quality large furniture. These viewpoints are suggested to not be completely viewed as discrete classes for each and every product. However, they bring us better understanding of consumer outlook on furniture products while making purchase decisions or acquisition.

2.1.1.2 Disposal Behavior

Several daily life practices influence the disposal of furniture by consumers such as re-doing household interiors, relocating, maintenance and receiving furniture as gifts (Hebrok, 2016). Another study suggested that the consumers feel trapped in keeping up to speed with frequent upgrades and hence replace with new products to not seem old fashioned (Cox et al., 2013). This is true in the case of products that are perceived to be out of date or disposable and can be purchased again without too much of a financial pinch. Hebrok (2016) also found some consumers prefer buying new furniture to refurbishing existing furniture due to comparative cost benefit. In the case of furniture perceived as workhorse product (defined under buyer behavior), they are usually handed down to second hand channels for re-use and are occasionally considered for re-paint or re-upholstery by the existing user.

2.1.1.3 Product Attachment and User Attitude

Purchase of furniture and home furnishing can be emotional (Maťová et al., 2018). The emotional bond is valuable to create product attachment that designers can help strengthen for long lasting person-product relationship. Frequency of replacement of consumer durables such as furniture is seen undesirable for sustainable consumption (Mugge, Schoormans & Schifferstein, 2008). Norman (2004) argues sometimes that the emotional design can be far more critical to a product’s success than its functional elements. A user’s response to everyday things are complex and have several determinants however some fall out of the hands of the designers and manufacturers (Norman, 2004). Norman (2004) defines the product experience into three levels 1) visceral: when something is perceived for its look and feel. e.g. pretty, sensuous and so on, 2) behavioral: when the product is perceived for its performance, function and utility and 3) reflective: when the product reflects one’s self-image. The appeal when maintained from all these three levels of experience of a product can maintain the love of the user towards the product.

Similarly Mugge at al., (2008) defines product attachment through four characteristics: 1) pleasure - that the product provides from its primary function, it’s quality and function that perform better than its competitive products, 2) self-expression- when the product’s personality through its appearance is similar to that of the user’s and hence creates an attachment between them; one that can also involve the user (to varying degrees) in creating the final outcome through product personalization, 3) group affiliation when owning or using the product associates the user to have desirable affiliation with others enhancing the part of oneself that needs to feel connected e.g. college sweatshirt, Harley-Davidson bike, and 4) memories which are developed independently on the product by the user. They are a challenge for designers to design products to create good memories however all these four can be used as strategies to design for long lasting relationship between user and product.
2.1.2 Sustainability, Circularity and Design

A study of consumption patterns is seen vital for sustainable development due to its high relevance to the increasing pressure on planet’s finite resources, climate change and non-biodegradable waste management (Atkinson, Dietz, Neumayer & Agarwala, 2014). Sustainable consumption does not have to simply mean consuming less. Sustainable consumption can be defined as consuming differently and efficiently, that supports the current and future generation’s needs of materials and services without causing irreversible damage to the earth’s ecosystem (Atkinson et al., 2014). Sustainable consumption includes several notions which will be analyzed in this section.

2.1.2.1 Circular Economy

Circular economy contrasts with linear economy that function in the traditional model of take-make-use-dispose (Bocken et al., 2016). The awareness of the environment evolved the idea of circular economy (Lacy & Rutqvist, 2015). Lacy and Rutqvist (2015) define circular economy to be where the company’s growth does not rely on extracting and consuming Earth’s resources, without reckless use of energy, without generating a continuous stream of products that reach landfills or damage the environment.

2.1.2.2 Circular Business Models

Accenture identifies five new business models for circular growth: 1) circular supply chain, 2) recovery and recycling, 3) product life extension, 4) Sharing platform and 5) product as a service (Lacy & Rutqvist, 2015). Similarly, Bocken et al., (2016) categorized the circular models based on resources cycles: slowing resource loops and closing resource loops that brings deeper understanding from a product perspective. Under the slowing resource loop the four circular business models identified are: 1) Access and Performance model that provides the products as a service without having to actually own the product e.g. car sharing, launderettes, 2) Extending product life where the products are recovered from its post-use residual value and is taken back for manufacturing e.g. automotive industry where they re manufacture parts, offering cash for electronics and sell refurbished electronics, 3) Classic Long Life Model where the focus is on delivering durable and high quality products supported with repair services e.g. white goods, luxury products, and 4) Encourage Sufficiency where product seek to reduce consumption through durability, upgradability, service, warrantee and reparability e.g. high service and quality brands such as Patagonia. Under the closing resource loop two circular business models are identified: 1) Extending resource value where waste materials become resources to manufacturing new products and forms of value e.g. collecting fishing nets and supplying as raw materials for carpets, 2) Industrial Symbiosis where the residual output of one process forms the feedstock to another process but must also benefit from the proximity of the two businesses.

2.1.2.3 Circular Product Design

Design for the environment and design for disassembly is considered for circular design of products. The goal for Design for Environment is to reduce environmental impact and thus must consider the entire life cycle of parts of the product as well as the whole, focusing on the disposal, use of certain materials in the product life cycle and
2.1.2.4 Design for Sustainable Behavior

Although designers are provided with tools for eco-design to reduce impact on the environment, the human interaction with products and their influence produces substantial environmental impact (Ceschin & Gaziulusoy 2016). Hence design research is now focusing on influencing user behavior towards sustainability through four basic principles: 1) make it easy for people to adopt a desired behavior, 2) make it harder for people to perform an undesired behavior, 3) make people want a desired behavior and 4) make people not want an undesired behavior (Ceschin & Gaziulusoy 2016). The preliminary steps while seeking solutions for reducing environmental and social impact through product or service design is through understanding consumer behavior (Bhamra et al., 2011).

The success of circular economy is either supported or hampered by the choices made by millions of consumers (Daae et al., 2018). A framework with nine dimensions of behavior change and four circular economy goals is developed by Daae et al. (2018) that provides a toolbox to innovate with products, services and communication for circularity. The four circular goals considered are maintenance, reuse, refurbish and recycle. The nine dimensions of sustainable tested and chosen are as follows: 1) Control – whether the consumer is given control of the designed sustainable be-
behavior to a relevant extent, 2) Obtrusiveness - whether the consumer's attention is drawn towards the designed sustainable behavior, 3) Encouragement - whether the consumer's sustainable behavior is encouraged, 4) Meaning - whether the designed sustainable behavior brings more meaning to the consumer, 5) Direction - whether the designed sustainable behavior is as per to the wishes of the consumer or not, 6) Empathy - where the designed sustainable behavior focuses on the user or on what others think of the consumer, 7) Importance - whether the designed sustainable behavior is considered important by the consumer or not, 8) Timing whether the sustainable behavior option is encountered by the consumer before, during or after the behavior and 9) Exposure - whether the opportunity for the designed sustainable behavior is exposed to the consumers frequently or rarely.

2.2 Methodological Framework

Taking a reflective redesign approach, the research process is theory informed and design-oriented problem solving (Aken, Berends & Bij, 2012). The methodological framework is divided into research methods and design methods, where the research methods are used to collect secondary and primary data and design methods are used for the design process, ideation and to innovate.

2.2.1 Research Methods

The following section discusses the methods used to conduct research. Literature review and case study was used to collect secondary data while methods such as unstructured interview, observation and questionnaire interview was used to collect primary data.

2.2.1.1 Literature Review

Any design project and supporting academic paper has literature review as its integral component to be able to collect and synthesize research on the problem area (Martin & Hanington, 2012, pg.112). The literature review helped form a base for understanding the furniture consumption as well as sustainable consumption of furniture by discussing topics such as furniture consumption behavior, product lifetime and attachment, circular business models, circular product design strategies, emotional design and sustainable behavior change dimensions.

2.2.1.2 Unstructured Interview

Considering the take, use, dispose process of linear economy, there lacks insights and solutions for reducing the disposing of furniture and stretching the use phase that has a considerable influence on reducing the pressure on the raw materials and waste management. The challenging situation does not only fall onto the makers of the furniture but also every individual that uses the furniture and their everyday practices towards maintaining the furniture. Therefore, I found it imperative to gain insights and opinion on the state of the furniture (condition of the furniture) at the time of disposal post us-
er’s use. The responsible authority of the local disposal station at Norremark in Växjö was identified a good place to gain first-hand information about the local furniture disposal options as seen at the local level. Therefore, an open-ended unstructured interview was used as a tool during the exploratory research phase to gather first-hand information, opinion and insights (Martin & Hanington, 2012, pg.102) observed by the project leader Anders Lundgren. Anders Lundgren is the project leader of technology and development unit at the Södra Smålands Avfall och Miljö (SSAM). SSAM is the waste management company that holds responsibility for the Norremark recycle station here at Växjö. The questions were open-ended to understand furniture disposal behavior of the local consumers, the type and condition of furniture kept for reuse and the goal of a reuse and recycle station for a municipality.

Insights from Interview - Södra Smålands Avfall och Miljö (SSAM) is a waste management company founded and owned by five neighboring municipalities of Lessebo, Markaryd, Tingsryd, Växjö and Älmhult. Their goal for 2025 is to promote and endorse sustainable activities and decrease waste collected for incineration by 25%. This since there are financial and environmental benefits due to reduction of incineration especially wood. For the very purpose, the reuse station was allocated and designed into the recycle station where products are segregated for chance to a second life. The furniture section of the reuse station encourages consumers to dispose furniture for a second life instead of it being thrown into the incineration pile. The reuse station is cleared into the recycle station everyday if the items are not collected by end of day. Typically, large furniture items such as beds and sofas are not picked up and hence go for incineration. The reason stated was that they are not economically feasible to be repaired, refurbished to be sold at an attractive price by the second hand organizations.

2.2.1.3 Observation

From the insights gathered from the unstructured interview, an ethnographic observation was made to further investigate the condition of the sofas and seating that were kept for reuse at the reuse station as well as the sofas dumped for incineration. This was made over three random days of the week to gain personal insights and data to be able to challenge the behavior and attitudes (Martin & Hanington, 2012, pg.120) as reported by Anders Lundgren.

An ethnographic observation was conducted to observe the state of the sofas and seating that were kept for reuse at the reuse station as well as the sofas dumped for incineration. This was made over three random days of the week to gain personal insights and data to be able to challenge the behavior and attitudes as reported by Anders Lundgren (Martin & Hanington, 2012, pg.120).

Insights from the observation - All kinds of furniture are observed to be disposed. Sofas, couches, seating and beds composed a large proportion of the furniture seen both at the reuse section of the station and also in the incineration piles. The worn-out characteristics observed were discolored and thinning of upholstery, sinking cushions, tear, rips, stains and frayed stitches. Scratches and blemishes were observed on the wooden metal or plastic components of the items.
Figure 3: Post Use Sofa Condition
2.2.1.4 Questionnaire Interview

Based on the interview and observation conducted, I narrowed down the product scope to studying the sofas for further investigation on how to extend product life through maintenance since the maintenance is one of the top goals for circular economy. The observation also gave the probable product repair needs such as the rips, tears, stains, structural repair and so on that will arise from use in the hands of the consumer. However, to further the investigation on furniture maintenance needs and frustrations in the hands of the consumers, the questionnaire interview method was used. This was to gather the consumers’ attitudes, thoughts and expectations (Martin & Hanington, 2012, pg.140) on maintaining their sofa use and product life since extending the use phase has a positive influence on reducing waste and reducing consumption.

From the maintenance point of view, the questions were further divided into the care and repair perspectives of a sofa. Simultaneously, IKEA will also gain from these insights to better understand sofa consumers and attitudes towards sofa maintenance and extending product life. This since IKEA is conscious of the throwaway attitude that the traditional and long running IKEA business model has contributed amongst their vast furniture customer base.

The questionnaire (see appendix 2) had a mix of closed and open questions to gather information virtually from respondents. The respondents for this were chosen in India and China as they form two of the largest economies in the world at this point in time and shed light from a different cultural context. Although the respondent count was a mere 17 in each country, the qualitative nature of the information (see appendix 2) was very useful for ideation and concept generation from a global perspective.

Insights – The consumers expect the product to be designed in a way that it does not collect dust, easy to clean, where the stitches on the upholstery withstands regular use, is modular for easy mobility and whose quality of sponge does not flatten too early during use. In the case of repair needs, the consumers expect after sales service by the furniture brand and/ or company. Furthermore, the following illustration (see figure 4) gives a cohesive sofa maintenance practices and insights of the consumers.
Maintenance of SOFA

**clean**

How?
Vacuum and wash the covers

How often?
Clean sofa once a month or once in 3 months

Hire shampoo services?
Not usually

**repair**

What?
Restuffing of cushions or structural repairs

What do you do?
Get it fixed by someone

Figure 4 : Consumer Attitude & Practice for Sofa Maintenance
The research method of case study on EKTORP, was used to get an in-depth investigation (Martin & Hanington, 2012, pg. 28) using several sources to gain actionable insights on product issues and reviews from the consumers. The information and data collection was made through discussions and meetings with the circular team now and then as well through the access I was given to one of their InterIKEA customer review and rating application software (see appendix 3).

The case study was made to understand the customer’s point of view and assess on how to fulfill their needs and ease their frustrations when it comes to satisfaction with using IKEA sofas and also prolonging the use. In collaboration with IKEA, the scope for the project was to investigate the ‘condition’ of the EKTORP sofa post sale, to make assessment on what-to and how-to maintain the sofa through consumer insights to be able to extend the product life while also assess who and when to maintain the sofa.

As the situation stands now, IKEA stores have the recovery department in most of the warehouse stores across the globe. They take back to fix or restore products that can go into resale and reuse. However, in the case of the sofas, the sofas when returned immediately can be fixed for minor issues or is kept for resale as is. But when they come back after 1 year or more of use, they are not kept for resale but rather discarded to the recycling stations or landfills. Many a times the sofas can be easily fixed by replacing covers or some parts for a second life but due to the hygiene outlook on the product they are unable to resell the sofa from an IKEA store.

2.2.1.5 Case Study

Globally, the EKTORP is the highest selling sofa at IKEA (InterIKEA). The design is described to have a timeless design with rounded edges and fluffy cushions. The product has a 10-year warranty and stands as an ambassador for durability and softness of the IKEA series. The sofa comes with removable covers and cushions. The backrest cushions are reversible for a longer wear. The sofa structure is however standalone non modular in design. The following materials are used in making the EKTORP sofa, 1) sofa frame - 1.1) back and seat frame: fiberboard, particleboard, plywood, solid wood, polyurethane foam 1.2 lb/cu.ft., 1.2) armrest: hollow fiber polyester wadding, fiberboard, particleboard, solid wood, cardboard, polyurethane foam 1.2 lb/cu.ft., polyurethane foam 1.5 lb/cu.ft. 2) cushion - 2.1) seat cushion: non-woven polypropylene, high-resilience polyurethane foam (cold foam) 2.2 lb/cu.ft., polyester fiber balls, 2.2) back cushion: hollow polyester fibers, non-woven polypropylene.
Figure 5: EKTORP sofa
source https://www.ikea.com/se
Figure 6: Data Collection Process

CONSUMER INSIGHTS

Quantitative
  ↓
  Inter IKEA
  ↓
  software application
  ↓
  Sales
  ↓
  Most Sold

Qualitative
  ↓
  Primary Data
    ↓
    Inter IKEA
    ↓
  software application
    ↓
  Product Defects
    ↓
    Free Text
    ↓
  Malfunction & Defects

  ↓
  Secondary Data
    ↓
    Second Hand Sale
    ↓
  Product Reviews
    ↓
  Customer Solutions for product repair

  ↓
  Pinterest
  ↓
  Youtube
  ↓
  Blogs

Facebook
  ↓
quartermex.com
  ↓
  productreview.com.au
  ↓
  reddit.com
  ↓
  Pinterest
  ↓
  ebay.com
  ↓
  youtube.com
  ↓
  Blogs
  ↓
newsnow.co.uk
  ↓
  trovit.co.uk
Product Issues – Inter IKEA at the IKEA of Sweden maintains an on-line application for documenting customer review and ratings on product defect and malfunction at a global level. The application collects customer complaints at a product level from different global regions and at a country level. Based on the complaints (see appendix 3 & 5) for EKTORP, an analysis was made as shown in figure 9.

Post use condition – Insights were gathered on the look and feel of the used sofa from the online second hand portals such as facebook, gumtree.com, Ebay, youtube and several blogs (see appendix 4). The product description, repair issues and the pictures of the as-is sofa uploaded by customers on-line gave qualitative insight on the product. The customer comments and description of product condition for resale gave useful insights as well as validated the product issues and condition that was analyzed from the customer complaints (figure 7) registered with IKEA. Blogs and vlogs on the EKTORP product reviews were also captured for additional insights on customer recommendation for maintenance and DIY repairs (see appendix 4). Some of the key recommendations gathered were using fabric shavers for piling of the fabric, using steam irons to iron the fabric for a better aesthetic outcome after wash, refilling the cushions with extra polyester fibers to re-fluff the cushions, washing the slip covers once a week for the sofa to look its best and using hardware such as the L shaped corner joineries to strengthen weak joints.
Figure 8: EKTORP Product Issues with Use
<table>
<thead>
<tr>
<th>EKTORP COUNT</th>
<th>WHAT</th>
<th>ISSUES TO BE SOLVED ON PRIORITY</th>
<th>QUALITY</th>
<th>CARE</th>
<th>REPAIR</th>
<th>HOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>FILING OF FABRIC</td>
<td>improve fabric quality for frequent body friction and wash</td>
<td>recommended wash frequency</td>
<td>bobbling fabric shaver</td>
<td>replace cover</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>FRAYING OF STITCHES</td>
<td>stronger thread for stitches, wash resistant</td>
<td>sewing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>FLATTENING OF CUSHION</td>
<td>better quality foam, better quality polyfill</td>
<td>frequency of cushion overturn</td>
<td>replace foam, refill polyfill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>BROKEN FRAME</td>
<td>better quality material or structure</td>
<td>expert to fix, mend and assemble at site</td>
<td>expert or self to replace frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>TORN FABRIC</td>
<td>better quality material</td>
<td>sew patchwork, (patch stickers from behind)</td>
<td>replace cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>LUMPING OF CUSHION FILLING</td>
<td>better quality polyfill, better bagging structure</td>
<td>refill polyfill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>BROKEN ZIPPER</td>
<td>stronger zip</td>
<td>replace and sew new zipper</td>
<td>replace cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>DISOBIDIENT HARDWARE FITTINGS</td>
<td>easier and stronger design for assembly fittings</td>
<td>expert to fix, mend and assemble at site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>WEAK STRUCTURE</td>
<td>easier and stronger design for assembly fittings</td>
<td>expert to fix, mend and assemble at site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>TORN CUSHION LINING</td>
<td>better quality non-woven fabric</td>
<td>liquid resistant</td>
<td>replace lining</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>STAINED FABRIC</td>
<td>stain resistant fabric</td>
<td>wash instructions</td>
<td>DIY replace hardware kit (glue, wood chips, wood powder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>BROKEN HARDWARE</td>
<td>stronger hardware</td>
<td>better assembly directions,</td>
<td>expert to replace and fix at site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>FABRIC DISCOLORATION</td>
<td>quality check</td>
<td>wash instructions</td>
<td>replace covers, slip cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BROKEN WOOD</td>
<td>harder wood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SAGGING SPRINGS</td>
<td>crease free fabric (cotton blend percentage maybe)</td>
<td>wash instructions</td>
<td>steam iron</td>
<td>replace covers, slip cover</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>UNCONTROLLABLE CREASING OF FABRIC</td>
<td>crease free fabric (cotton blend percentage maybe)</td>
<td>wash instructions</td>
<td>steam iron</td>
<td>replace covers, slip cover</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>WORN OUT VELCRO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>BROKEN LEG</td>
<td>quality check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>BROKEN SPRING</td>
<td>quality check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CUSHION FOAM UNGLUED</td>
<td>quality check</td>
<td></td>
<td>glue together again</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>FRAYING NEAR STAPLES</td>
<td>quality check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SAGGING FRAME</td>
<td>structural test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SHRINKING OF FABRIC</td>
<td>shrink/stretch test of fabric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 9 : Product Issue Analysis
2.2.2 Design Methods

During this problem-solving cycle of the project, the following design methods discussed below was used to analyze, assess and recommend concepts to improve transition and performance (Aken, Berends & Bij, 2012) of circularity of furniture based on the secondary and primary data collected during the design research phase of this project.
2.2.2.1 Mind Maps

The tool of creating mind maps was used in several phases throughout the project. This method was used to map the circularity of furniture (see figure 1), the theories around circularity of furniture (see figure 2) and also the innovation process for maintaining EKTORP product life (see figure 9). It served as a powerful device due to its diagrammatic nature (Martin & Hanington, 2012, pg. 118).

2.2.2.2 Image Boards

An image board (see figure 7) was made using the images of the used EKTORP couches that were uploaded online on various portals by customers for resale. This visualizing method was used to communicate and analyze (Martin & Hanington, 2012, pg. 100) the aesthetic condition for look and feel of the product which is intended for resale. This visual tool combined with the description and comments was useful in gaining insights as well as visualizing for concept solutions.

2.2.2.3 Contextual Analysis

Contextual design technique helped in prescribing a course of action for how to care or repair for the sofas from a consumer point of view as well as a company point of view after the themes and patterns of product issues that was analyzed during the content analysis. This technique synthesized concrete and explicit solutions (Martin & Hanington, 2012, pg. 44) to fulfill customer needs and ease probable frustrations for maintenance that will arise for the EKTORP sofa users (see figure 9).

2.2.2.4 Content Analysis

The qualitative data collected and documented by the inter IKEA application on product defects and complaints was analyzed in a systematic way using descriptive phrases (Martin & Hanington, 2012, pg. 42) such as piling of fabric, fraying of stitches, lumping of cushion and so on. These were created from the documented lengthy texts and content that was collected directly from the customers based on global regions and countries (see Appendix 5). The outcome of the analysis was then developed into a quantitative format of a bar graph (see figure 8).

2.2.2.5 Concept Sketching

Sketching is one of the most important tools used to communicate concept ideas amongst designers as well as with others (Rodgers, Green & McGown, 2000). The method of concept sketching (see figure 14 - 18) was used to create five different concepts that formed a collective whole for the resulting design project. The sketches were maintained to be partly unfinished in nature permitting them to be further developed as potential future design projects.

2.2.2.6 Concept Mapping

The resulting design project is communicated using a concept map (see figure 13) of several concept sketches mapped together as a collective whole to bring out a larger understanding and meaning. The map places cross links between the different concepts while also helps to articulate the individual concepts (Martin & Hanington, 2012, pg. 38).
3. CONTEXTUAL ANALYSIS

3.1 Innovate for Circularity of Sofa

The project addresses to solve and improve for circularity of furniture and in this case the sofas from IKEA. The success or failure of circularity of furniture is influenced by consumer’s everyday practices and actions. Sofa consumption is very well defined and organized until the purchase and use, however insights get unorganized when it comes to maintaining, repair and recycling of the sofas for making the sofas circular or delay its journey to the landfill or incineration. Maintaining the life of the sofa and reuse sits at the top of the circular economy goals and thus must be given priority. But the sofas most typically are incinerated or dumped before the actual end of furniture life when the consumers replace the used with new. This can be for several reasons such as change in their sense of style, relocation, change in sofa needs and unavailability of feasible and convenient repair options. While replacing the used with old, consumers are seen to not consider environmental impacts. Normalizing the use of repaired and maintained sofas from a socio-cultural perspective together with economic sense is critical towards circularity of sofas.

Based on the literature review from furniture consumption to factors that enable sustainable consumption, a framework was mapped (see figure 9) from which the sphere for innovation was further defined for concept generation and the resulting design project. The sphere is specific to solve for sofa consumption, to explore circular business models around circularity of sofa consumption and finally to bring about change behavior amongst sofa consumers to maintain the sofas, allowing them for resale, reuse and product life extension. The scope of circularity of furniture, circular business models and change behavior for the project is further analyzed below.

Sofas are considered to be mainly a workforce product and/or investment product that is valued for its look and feel, functional performance, durability, reliability and convenience of maintenance. Attachment to one’s sofa remain high when the sofa appeals to the consumer from all the three - visceral, behavioral and reflective factors. However, consumers can change their mind and detach themselves from the product after a premature period of use when any one or two of the factors stop appealing to the consumer. At this point of disposal by one user, the sofa must ideally be redirected to another consumer to extend product life from the circularity perspective. This potential for second use or product life extension was seen in sofas kept for reuse or thrown away for incineration during the ethnographic observation at the Norremark recycle station, Växjö. The sofas will usually need repairs or refurbishment before it is acceptable for second use. For the very reason that the sofa must appeal again to new consumers to the second user for its visceral, behavioral and reflective factors again. The image board of the product images of the used EKTORP sofas for resale helped in assessing and analyzing for its aesthetic condition to attract second users. Solutions to maintain and repair sofas to make the sofas look and function as good as new is analyzed to be critical towards circularity of sofas from a business as well as socio-cultural point of view. Innovations and solutions in this sphere can be ecologically very beneficial since it can reduce pressure on raw materials for making a new sofa from scratch as well as help in reducing waste collection from a municipality perspective.
Figure 10: Defining the Sphere to Innovate
Circular business models such as the access and performance model, extend product life model through refurbishment and encouraging sufficiency was analysed as directions for exploring during concept development since they require consumer participation and responsibility. The other business models such as classic long life, industrial symbiosis and material symbiosis were not considered for this project. The reason for not considering classic long life business model was because the project did not look at high end sofas but rather sofas that are bought in considerable big volumes by the consumers, while the industrial symbiosis and extend material value business model function at an industrial level and does not have direct consumer interaction for change behavior.

Circular design principles and factors are considered for designing and developing circular sofas such as design for dis and reassembly, durability, repair, upgradability, product attachment, design with recycled materials and recyclable materials (either for technological or biological cycle). The case study on EKTORP brought out recommendations for the product redesign for long life and quality check. But this project mainly focused on the issues that come up with use and after use. This is because the collective sofa user’s everyday practices and consumption can cause substantial environmental impact with maintaining of the product in its use phase. The extending of the use phase especially post first-use is seen to very critical from an environmental perspective and thus priority should be for repair and reuse of the product.

Changes in behavior and attitude towards conscious and sustainable consumption of sofas can help with smoother transition towards circularity options for sofa consumption. The design research for the project focused on the condition of the sofa in the hands of the consumers and also using the EKTORP as the case study to study IKEA sofas. The data collected helped to assess frustrations and expectations with regards to maintaining the sofa especially the EKTORP (see figure 9). This contributed to forming actionable and tangible insights for innovating concepts towards maintaining product life of the sofa. It was analyzed that although the consumers are responsible for conscious consumption of sofas by maintenance and reuse, consumers also need market actions and organization to encourage, motivate and give them control for such sustainable practices and actions. For example, the consumers expect the product to be designed for easy and low cleaning care but expect after sales services for the maintenance such as the repairing needs. (See figure 4).

3.2 Analysis with Case Study and Benchmarking

Based on issues raised by EKTORP sofa users, the consumers face several product repair issues that may not all be solved at the product design level but require services and products for repair and care during the use or after their use for product life extension. This is also considering for an IKEA, the material quality cannot always match material quality of those in high-end products due to their cost feasibility as well as mass quantity requirements to be able to be affordable for the many.

The need for product maintenance during and after use is especially important in the case for IKEA furniture. It was analyzed (see figure
Figure 11: Patagonia Brand Poster
9) through the actionable insights collected from the case study on EKTORP that consumers will require multiple touch-points and access through service design models or products that can encourage, motivate, direct and give them meaning to adapt to an attitude and culture of product maintenance and repair. This is seen imperative for the success of circular business models for sofa consumption. When the product is maintained and repaired under the responsibility of the consumers, they can be economically feasible. The reason being, organized refurbishment is economically viable only in scale and solving that challenge is seen close to impossible at this point in time where there are far too many variables to deal with such as innumerable types of sofas, unpredicted period of sofa use by consumers, unpredicted disposals, unorganized disposal options and so on. Thus, it is seen feasible from an economic perspective to handle the maintenance and repair at the consumer level before it can get redistributed and reused through new and innovative circular business models.

When addressing circularity of furniture, material research is usually the first step towards making products ecologically and economically sustainable. However, materials and processes for furniture has a long way to go as seen in the material specification of the EKTORP sofa. Thus, maintaining and slowing the life-cycle of the already unearthed non-sustainable materials can help immensely to creating a climate positive economy, especially by the furniture giant IKEA. A good example to analyze and compare with a brand and product company that encourages and motivates consumers towards the sustainable behavior of conscious consumption is Patagonia.

From a product material perspective, Patagonia uses 70 – 100% recycled materials for new products, they have several circular business models for repair, reuse and take back (see figure 11). To elaborate, they provide repair products and repair services for their customers through their program called Worn Wear (https://wornwear.patagonia.com/#). This program is also created to make it convenient for consumers to resell their Patagonia products and at the same time buy used products which are stated to be better than new (see figure 12). They even provide monetary credit to customers for reselling their Patagonia products and this credit can be used to buy new Patagonia products. These several market actions developed by Patagonia encourages and motivates conscious circular consumption as well as brand and product attachment amongst their customers. If the large furniture giant IKEA can create market actions and touch-points that encourage and motivate their sofa consumers to be able to maintain and repair their sofas for reuse, there can be a much larger impact through encouraging product attachment, reducing waste and extending life of IKEA sofas. This in turn can supplement existing or sprout new innovative circular business models by IKEA as a transitioning circular organization.

From this design process of research, understanding and analysis, this project hopes to create feasible and implementable concepts to bridge the gap between IKEA and IKEA consumers to bring about change behavior for care and maintenance of IKEA sofas. The project outcome strives to be extended and applied to other furniture and interior products creating a culture of care between both IKEA and it’s consumers, towards a smoother transition to circular business models and circular economy.
Figure 12: Patagonia Worn Wear Website
Source https://wornwear.patagonia.com/
4. DESIGN PROJECT

4.1 Culture of Care

The design project proposes a combination of concepts for IKEA, with products and services designed to endorse a ‘culture of care’ in this heyday of fast fashion and disposable outlook towards sofas. This culture of care can improve the performance of circularity of furniture. The concept map below illustrates five different design concepts to maintaining and fixing IKEA sofas at the consumer level through simple acts that are encouraged and motivated by several market actions that can be implemented by IKEA. The goal of the project is creating a culture of care of sofas amongst the large IKEA consumer base around the globe in many different contexts. The culture of care through these concepts is to encourage the societies to become responsible owners of their sofas who take repairing, reusing and sharing seriously. This way there is chance to slowly phase out the repetitive and excessive practice of take, make and dispose of a linear economy.
Figure 13: Concept Map of the Culture of Care
4.2 Concept Definitions

Each of the five concepts that form a collective whole of the IKEA culture of care project are represented and discussed below:

4.2.1 IKEA Station

**PROBLEM**
Majority of sofas get incinerated or end up in landfills because consumers don’t have access to products and organized services to maintain and repair their sofas that make economic sense.

**INSIGHT**
Several product issues that need simple repair tools and techniques can get discarded as waste before actual product life ends.

**OBJECTIVE**
To provide a space to create mutual support group for repair works

**PURPOSE**
To endorse a culture of care for sofas and furniture at a neighbourhood level, regional level or city level.

**GOALS**
Equip circular business models of furniture consumption.

**OPERATIONAL DETAILS**
Independently functions as a care and repair service station across cities, countries and the globe. The ‘IKEA repairs’ mobile workshop (illustrated below) can be an extension to this station for at home services.

The IKEA station is a space accessed using the IKEA family membership card creating a mutual care and repair support group for any IKEA consumer at a neighborhood level, region level or a town level. The space enables consumers to use the provided tools, machines and repair techniques in maintaining their IKEA furniture for extending product life through reuse or resale. For a quarterly or yearly subscription all members will have access to the strategically located IKEA stations for practical aid and guidance too. The space shall have a small operating team and hosting workshops to inspire and educate the culture of care for furniture. This concept illustrates a sofa repair station since the project focuses on caring for sofas. The added benefits of the IKEA station will be 1) it shall cater to second hand sales of the IKEA sofas for a refurbishment before the second owner’s use, 2) the station shall provide a platform for post sales documentation on product quality and use feedback, complaints and recommendations that can bridge the gap between the company and the consumers and 3) the station can also be used to receive delivery of the IKEA spare parts for replacement and repair work of the sofas.
Figure 14: IKEA Station

To Repair:
- ARMREST DEFORMED/ BROKEN
- BROKEN FRAME
- DEFECTIVE HARDWARE
- LUMPING OF CUSHION FILLING
- BROKEN ZIPPER
- DISOBEDIENT HARDWARE FITTING
- FABRIC DISCOLORATION
- FADING OF LEATHER
- PEELING OF LEATHER
- FLATTENING OF CUSHION
- FRAYING OF STITCHES
- LOOSE COVER FIT
- PILING OF FABRIC
- SAGGING FRAME
- SAGGING OF SPRINGS
- SCRATCHED LEATHER
- STAINED FABRIC
- STAINED LEATHER
- UPHOLSTERY COMING OFF FRAME
- WEAK STRUCTURE
- WORN OUT VELCRO
4.2.2 IKEA Repairs

**PROBLEM**
In several cultural contexts, repair work is not considered as DIY projects. Additionally, repair service is found convenient in many other contexts such as time constraints, differently abled people and skill sets.

**INSIGHT**
Consumers find themselves dependent on companies for their post sales services to help them with their product care and repair issues of especially bulky products such as the sofas.

**OBJECTIVE**
Ease transition to circularity of furniture.

**PURPOSE**
To endorse a culture of care for sofas and furniture by making it convenient for consumers to have at home services.

**GOALS**
Equip circular business models of furniture consumption.

**OPERATIONAL DETAILS**
The mobile workshop can function independently or it can be attached to delivery vehicles to be make the concept more economically and ecologically feasible.

The concept IKEA repairs is a mobile workshop that provides at home or close to home repair services for the sofa consumers. This workshop is made mobile so that it can reach people who prefer, demand or need this service come to them in order to repair or refurbish their sofas. The reasons for this could be that they are differently abled and live by themselves, they do not have the time due to busy schedules or they do not find themselves capable for the repair task. Hence this mobile service can benefit all types of consumers and in different contexts across the global IKEA market to maintain and repair their sofas at the convenience of their homes. In order to make this service more ecological sense, the vehicle/ automobile can be designed to run on biogas or other alternative green options.
Figure 15: IKEA Repairs

To Repair

- ARMREST DEFORMED/ BROKEN
- BROKEN FRAME
- DEFECTIVE HARDWARE
- LUMPING OF CUSHION FILLING
- BROKEN ZIPPER
- DISOBEDIENT HARDWARE FITTING
- FABRIC DISCOLORATION
- FADING OF LEATHER
- PEELING OF LEATHER
- FLATTENING OF CUSHION
- PRAYING OF STITCHES
- LOOSE COVER FIT
- PILING OF FABRIC
- SAGGING FRAME
- SAGGING OF SPRINGS
- SCRATCHED LEATHER
- STAINED FABRIC
- STAINED LEATHER
- UPHOLSTERY COMING OFF FRAME
- WEAK STRUCTURE
- WEAR OUT VELCRO
4.2.3 IKEA Care

**PROBLEM**
The care and repair products are needed often and must be convenient to access for consumers to buy and use.

**INSIGHT**
Travelling to the IKEA stores may not make sense to majority of the consumers when they have to simply buy care and repair products.

**OBJECTIVE**
Normalise the use of repair products to maintain furniture life.

**PURPOSE**
To endorse a culture of care for sofas and furniture by providing repair products at several strategic locations.

**GOALS**
Equip circular business models of furniture consumption.

**OPERATIONAL DETAILS**
The IKEA care vending machines are strategically located in malls, market places, communal spaces of large residential blocks. They are refilled frequently for its products time and again.

The concept IKEA care is a vending machine that retails care and repair products for sofas and other furniture products. The vending machines are to encourage and bring easy access to IKEA consumers to maintain and repair their product as and when needed. It can retail products such as glue, spot removal solutions, fabric bleaches and dyes, sewing kits, small hand tools, fabric shavers and so on. Their easy access and constant presence can be a reminder for consumers for simple furniture maintenance and repair solutions.
Figure 16: IKEA Care

Laundrettes

Malls

Residential Blocks

Inspiration

STRATEGICAL LOCATIONS

Fabric dye powder

Lint roller

typical hardware

tools

bleech

To Repair
- BROKEN HARDWARE
- BROKEN ZIPPER
- CRACKING LEATHER
- CUSHION FOAM UNGLUED
- FABRIC COLLECTS LINT
- FABRIC DISCOLORATION
- FADING OF LEATHER
- PILING OF FABRIC
- SCRATCHED LEATHER
- STAINED FABRIC
- STAINED LEATHER
- TORN CUSHION LINING
- TORN FABRIC
- TORN LEATHER
The concept Polyfill Refill is an equipment designed for customer use at the IKEA station. The polyester filler fibers clump overtime due to collection of dirt and moisture. The equipment consists of three functions, the dryer, the shredder and the motor blower. The equipment has a funnel to collect the clumped polyester filler fibers, air dried to remove all the moisture, re-shredded to a fluff and finally blown out through a snout to refill the cushion bags. Access to use this equipment can encourage and direct consumer needs to maintain the comfort and aesthetic value of their IKEA cushions and pillows. An added business opportunity for the station would be to buy and sell waste polyester filler fibers. This can motivate customers to make new cushions with recycled polyester fillers.
Figure 17: Polyfill Refill
4.2.5 Fabric Band-Aid

**PROBLEM**
Small rips and tears are common repair issues in the upholstery fabric of sofas.

**INSIGHT**
In order to get rid of small rips and tears, IKEA consumers have to change the entire covers and slip covers or just live with it. There is no in-between solution.

**OBJECTIVE**
To not let the small rips to grow into big tears in the upholstery fabric.

**PURPOSE**
To endorse a culture of care for sofas and furniture.

**GOALS**
Equip circular business models of furniture consumption.

**OPERATIONAL DETAILS**
The fabric band-aids can be sold in store, in the IKEA care vending machines and online.

The fabric band-aid is a product idea to quick fix tears, holes and rips on upholstery fabric. The tape can have a layer of bioplastic on one side that helps patch the tear on the fabric. It can be cut to desired length, stretched across the tear and ironed for a minute in order to patch the tear or hole. It is recommended to be used on the underside of the removable covers. The tape shall be designed for several widths and basic colors.
Figure 16: Fabric Band-aid
4.3 Culture of Care for Circular Economy

The IKEA culture of care through these several actions and proposals, can cater to the growing world population needs of furniture by sustaining their products longer at the consumer level. For the culture of care to be a change in behavior of IKEA customers towards maintaining and repairing the products, the concepts will have to be developed, marketed and incentivized in a way to exercise and appeal to as many dimensions of behavior change which are – control, obtrusiveness, encouragement, meaning, direction, empathy, importance, timing and exposure to the services and products.

The IKEA station provides an organized space to the IKEA consumers for their cleaning and repair needs of their furniture. The space also forms an IKEA community and support group focusing on IKEA consumers (empathizing with the consumers), encouraging for maintaining product life and brings emphasis and motivation on leading a sustainable lifestyle. Similarly, the IKEA repair mobile workshop empathizes with consumers with home service needs and eases their repair frustrations for sustainable well-being and satisfaction. The Polyfill Refill concept leaves the consumer in control to re-fluff and refill their polyester filled cushions to become as good as new. The concept encourages consumers to embrace using used cushions since they can almost be entirely refurbished, it gives rational meaning and direction to the consumers instead of buying entirely new cushions. The communications, marketing and exposure of this concept by IKEA can motivate the users to use the service as and when they require. Similarly, the strategically located IKEA care vending machines and the products it retails like the fabric band aid, encourages and provides means to take meaningful responsibility to care and repair one’s furniture products.

From an optimistic point of view, the success of IKEA culture of care amongst the IKEA consumers, can snowball into many more innovative product and services ideas. The change behavior of care that each of the proposals can exercise, can potentially create huge markets in the future that can be economically viable and ecologically positive.
4.4 Design, Business and Engineering Interventions

The IKEA culture of care project consists of several concepts to bring the IKEA consumers more in control to be circular in using their sofas. For any of these concepts to be executed, a multidisciplinary teamwork is vital for its further research, value chain assessment, implementation, business model design, product or space-design, design-engineering, customer payment strategies, service design, social innovation and marketing. It is evident that no one discipline, or field can function alone but rather need combined knowledge for the validation and execution of the projects. The culture of care is quite a large scope of a project, however the concepts that make for the culture of care are tangible and can be understood for execution.

From a multidisciplinary intervention for executing the concept ideas, a trans-disciplinary role of team members is needed to innovate further for the culture of care project. The project has been able to distinguish the problem space and place the innovation sphere in perspective for circularity of sofas, but further multidisciplinary and trans-disciplinary team work on research and realization of innovative projects are vital to kick start this culture of care project.
5. SUMMARY AND DISCUSSION

The resulting design project called the culture of care is a project that presents a tangible collection of concept ideas through concept mapping. These concepts endorse the culture of care amongst IKEA sofa consumers to be able to maintain and repair their sofas for product life extension and delay it from reaching its final destination of incineration or the landfill.
5.1 Research Topic

Circularity of furniture was a very large field of research and problem solving with different aspects to solve for during the research phase of the project. The challenge was seen in narrowing down the problem definition to be able to ideate at a tangible level with a chance to innovate for a considerable impact. Therefore, the circularity of furniture was considered mainly from a maintenance and repair perspective in the hands of the consumers for problem solving. However, this is only one factor under circularity of furniture and thus cannot be considered entirely solved for circularity but rather a part of it. Furthermore, the project made a case study of EKTORP of IKEA and needs to make further case studies on several other sofas in their product range for further validation of the issues and malfunctions.

5.2 Further Research

When researching about circularity, the research directed the project to consider the consumer as being an enabler for circularity along with an organization. The project defined and established the sphere in which to innovate towards strengthening circularity of sofas with bringing a change behavior for maintaining sofa life in this heyday where sofas are considered as disposal products.

The sphere helped bring focus to ideate for concepts to enabling both the users and furniture companies be responsible for the product life. However further research is necessary to understand who and to what extent the users are willing to maintain and repair the furniture. The project looks at the user’s willingness from an optimistic point of view, although the real time situation requires to be further investigated.

5.3 Concept Realization

During the concept generation, the concepts were ideated by empathizing firstly from a consumer perspective and then was evaluated from a company perspective on the feasibility of the concepts by discussing the same with the circularity project leader at IKEA. The project is concluded by presenting the concept sketches in a concept map. The concept sketches were used to communicate the concept idea and permit materialization of each concept as separate future projects. The project time-frame did not allow for further concept realization and thus falls short for immediate execution. Additionally, the project was carried out by only the design competence and requires recommended multi-disciplinary team work which lacked in the project.

5.4 Circular Economy of Furniture

Solving for circular economy in furniture consumption is very vast and challenging. This project picked the use and pose-use scenario to research and innovate within. It hopes to bring a larger socio-cultural acceptance to expand and sprout more of the already established circular business models. For instance, this culture of care amongst the consumer level can smoothen the transition for large-scale product companies such as IKEA to transition to circular business models of services such as renting and leasing. However, this project looked only at the sofa consumption, and similar studies and research would be required for all types of furniture. Thus this project lacks insights for circularity of all kinds of furniture.
References


Maťová, H., Kaputa, V., Triznova, M. & Dovčiková, A. (2018). PURCHASING FACTORS FOR FURNITURE AND CONSUMER GOODS. University of Belgrade – Faculty of Forestry, Belgrade, Republic of Serbia
Appendix
Appendix 1

Disposal of Furniture

Hello there!

I am conducting a research for my master thesis to understand the reasons for disposal of furniture. This furniture item can be personally owned home furniture or office owned furniture. We have all disposed one or more furniture pieces at some point in our lives. I will really appreciate it, if you could take 5 mins of your time and fill in this questionnaire. Make sure to answer the questionnaire for ONE piece of furniture you have disposed. You are welcome to fill in more than once for more items of furniture and its reasons mentioned below.

Thank you so much.

* Required

1. What furniture item did you dispose? *

2. When you bought it, it was? *
   Mark only one oval.
   - New
   - Second Hand

3. For how long did you own it? *

4. Why did you dispose the furniture? (choose more than one reason) *
   Check all that apply:
   - I did not like the product
   - It did not suit my need anymore
   - It did not suit my way of living anymore
   - It was worn out
   - It was not easy to maintain
   - It was inconvenient to fix parts or replace parts
   - I did not know where to get it refurbished
   - It could not adapt to my new needs
   - It had parts and components that was irreplaceable when broken
   - It could be disassembled without damage
   - It could not be re-assembled back to function like it did before
   - Its disassembled parts were bulky to move

6. How did you dispose it? *
   Mark only one oval.
   - Sold it
   - Gave away to someone/ Donated
   - Left it at the curb/ next to the dumpster
   - Recycle Station for incineration
   - Reuse Station

7. Your Age *

8. City of Disposal *

Powered by Google Forms
Appendix 2

**Let's talk SOFA**

Hello there! As part of my master thesis project, I am looking to understand your care & repair rituals and practices of your sofa(s) in your current home. Could you take 10 - 15 minutes of your time today and fill this semi-structured interview below? Know that the consumer culture towards product life extensions is going to go a long way towards a sustainable future. Insights from you is key to paving that way. Cheers.

* Required

1. I want to talk about my * 
   - 3 seater sofa
   - 2 seater sofa
   - 1 seater sofa
   - Armchair
   - Couch
   - Other: ________________________________

2. How old is it? *

3. Can you share a picture of it? ?
   - File submitted:

4. Do you consider it to be a * 
   - Mark only one oval.
   - product that is changed often for its look and/or change in technology
   - product that is reliable for a longer lifespan and discarded only when broken
   - investment products that is special, expensive, had to save up for the purchase

5. Is it a * 
   - Mark only one oval.
   - leather
   - fabric
   - mix of leather and fabric

6. The legs are made of * 
   - Mark only one oval.
   - wood
   - metal
   - plastic

7. Did you buy it * 
   - Mark only one oval.
   - Online
   - Office

8. Where did you buy it? *

9. Do you clean your sofa?... * 
   - Mark only one oval.
   - once a month
   - once in 3 months
   - once in 6 months
   - once a year
   - never

10. How do you clean your sofa? * 
    - Check all that apply.
    - vacuum
    - wash the covers
    - Hire shampooing/ cleaning services

11. If I hire services...it is * 
    - Mark only one oval.
    - affordable and prefer this way.
    - expensive but I do it once in while
    - I don't hire cleaning service

12. Do you have rips, tears and fraying stitches on the product? * 
    - Mark only one oval.
    - yes
    - no

13. Do you have stains on the product? * 
    - Mark only one oval.
    - yes
    - no

14. Does your product need repairs like 
    - Check all that apply.
    - restuffing of cushions
    - seater spring replacement
    - structural repair

15. How would you deal with it if you did? *

16. Describe other issues with your product if any -

17. From care & repair perspective what are you looking for in your product to be functional?

18. What is your living situation
    - Mark only one oval.
    - Solo living
    - Single but sharing spaces
    - Couple
    - Multi-Generational Family (parents, in-laws)
    - Family with kids
    - Empty Nesters

19. What city, country do you live in?

20. Age
### Appendix 3  
**Sample of Complaints**

<table>
<thead>
<tr>
<th>Item No</th>
<th>Item Name</th>
<th>Supplier No</th>
<th>Rec. Unit</th>
<th>SYW</th>
<th>SAMS - Line Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201715</td>
<td>Cushions filling collapsing</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201731</td>
<td>ISSUE: cushion filling cover has degraded</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201807</td>
<td>had to change price because it is purchased item online for $750. barre: 14809306</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201906</td>
<td>The cushions (5) seat of the sofa are falling. Cx had back cushions replaced in the past at the store.</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201908</td>
<td>2 of the seat cushions are sinking and a couple of them are flat. Pa for exchange</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>CA</td>
<td>201913</td>
<td>customer states that the sofa is sinking in and he had only had it for a year. I couldn’t add it via receipt but the order number is 212760-761.</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201701</td>
<td>thanks, customer is requesting accommodation</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201711</td>
<td>Sofa has split into two pieces and nailed the cover. Request pick-up and redelivery of item. Customer has been replaced, warranty swap/replacement.</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201729</td>
<td>SP - cushions are flat</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201733</td>
<td>Customer stated that the center/corner of sectional is damaged has cracked/peeling wood. PICTURE Request.</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201735</td>
<td>Seat pads flat</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201736</td>
<td>Even... store 04 reg 7 tran 13/07-05 - Cx... cushions are no longer firm on Ektorp....approved by Edgar JG</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201737</td>
<td>seats flat</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201738</td>
<td>Customer states that the sofa is sinking in and he has only had it for a year. I couldn’t add it via receipt but the order number is 212760-761.</td>
</tr>
<tr>
<td>00230223</td>
<td>EKTORP NNN frm c4 lining cloth NA</td>
<td>18871</td>
<td>US</td>
<td>201740</td>
<td>even ex cushion has a hole frame cracked when cx screwed ball into cover 200025764 Mike approved for cx to bring back damage parts 08-10-10 I had to adj the price to reflect itself</td>
</tr>
</tbody>
</table>
Appendix 4  post-use condition

IKEA Ektorp 2 seater sofa and Ektorp footstool, dark grey.


IKEA Ektorp 2 seater sofa and 3 seater sofabed.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. All covers removable for machine washing.

IKEA Ektorp 3 seater sofa.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.

IKEA Ektorp 2 seater sofa.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.

IKEA Ektorp 3 seater sofa with chaise longue.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.

IKEA Ektorp armchair.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.

IKEA Ektorp large corner sofa.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.

IKEA Ektorp 3 seater sofa.

- Use of feet: 6 years old. Needs to be cleaned. Dust cover. Good condition. Covers are needed to keep the sofa in good condition.
Appendix 4  
post-use condition

Ikea Ektorp 2 seater sofa
PRICE = 158 (pre-sale) + 197 SEK

Assessment:
Better design to encourage customers to disassemble products for care when moving
Cover resistant fabric for ease of washable and ease of aesthetically new

Ikea Ektorp 3 seater sofa and chaise
PRICE = 259 (pre-sale) + 597 SEK

Assessment:
Better design to encourage customers to disassemble products for care when moving
Cover resistant fabric for ease of washable and ease of aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 119 (pre-sale) + 496 SEK

Assessment:
Better design to encourage customers to disassemble products for care when moving
Cover resistant fabric for ease of washable and ease of aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 158 (pre-sale) + 496 SEK

Assessment:
Better design to encourage customers to disassemble products for care when moving
Cover resistant fabric for ease of washable and ease of aesthetically new

Ikea Ektorp 3 and 1 seater sofa
PRICE = 188 (pre-sale)

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Ikea Ektorp 5 seater and sofa bed
PRICE = 319 (pre-sale) + 1315 SEK

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 159 (pre-sale) + 496 SEK

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 159 (pre-sale) + 496 SEK

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 158 (pre-sale) + 197 SEK

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Ikea Ektorp 3 seater sofa
PRICE = 119 (pre-sale) + 496 SEK

Assessment:
Cover resistant fabric for ease of washable and aesthetically new

Appendix 4

reviews

3. The cushions get bent out of shape

Because they're foam, the cushions of the couch tend to get bent out of shape easily. Like they form a curve after sitting on them for awhile. But that's easily fixed by flipping the cushions around, or swapping their positions - especially on the sectional.

4. The fabric MIGHT pill

We've heard that some people found the Grey slipcover piled (got little balls of fluff and lint). Honestly, we didn't have that issue until very recently - and only VERY minorly. Like hardly noticeable.

An easy solution to that would be to get one of those sweater defuzzers and use it as necessary.

The sofa looks best when I wash the slipcovers every week, but I don't wash weekly unless we're having guests or somebody spills something. It looks pretty good with every other week, and I can stretch it to three if I need to. But that's still way more time than I want to spend maintaining a couch.

I like my sofa. I love the look of the white. And I know I can buy new slipcovers or dye the ones I have or cover the couch with blankets to protect it. But what I really want is to not be high-maintenance about my furniture.

My sofa may have been cheap, but I can't believe how much it's costing me. This thing should have come with a maid.
Appendix 4  customer repair solutions

My 3 must-haves for IKEA EKTORP furniture are:

- A garment steamer to remove the wrinkles. You will want one of these right away because the slipcovers come with creases from being folded. I use the Conair Extreme Steam Fabric Steamer with Dual Heat.
- I was so impressed at how white our bath towels came out of the wash after using Oxiclean White Revive Powder so I tried it on the slipcovers with regular laundry detergent and bleach and I was really happy with the results.
-Lint rollers are a must for white slipcovers. Really though, everyone should be using lint rollers on their furniture on a regular basis. The lint from clothing and blankets is noticeably more prevalent on white slipcovers, but it’s on all furniture (obviously).

After washing, I throw the covers in the dryer on the damp setting. This is important so that the covers don’t shrink. I put the covers back on the furniture a bit damp and use a spray bottle with warm water to spray the wrinkles and smooth them flat with my hand. That pan is optional but, again, necessary.
Appendix 5

### Filling of Fabric

<table>
<thead>
<tr>
<th>Filling of Fabric</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabric of Inside Middle Cushion is planned, some bolts with lines in it</td>
<td>Not happy with solid fabric coming away from the arm - just like material.</td>
<td>Puck - one of the cushions is eggy and customers wished to get a new one</td>
<td>Joint stopped</td>
<td>Fabric cracked. Refund to customer, cushions in store.</td>
<td>Cushions disintegrating inside cushion covers 2 frames.</td>
<td>Fabric zipper or cushion cover</td>
<td>One of the arm has a cover not causing the arm to be loose</td>
<td>Quality Issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality Issue - Pulling for first wash. Deemed quality Issue; Pulling for first wash.</td>
</tr>
</tbody>
</table>

### Filling Frame

<table>
<thead>
<tr>
<th>Filling Frame</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiffness in one of the seating cushions - the cushion is not the usual quality. It is contained - customer has requested a replacement seating cushion for a 2 seater sofa.</td>
<td>Frame is broken and the seat/cover underneath is failing apart - item has guarantee of 10 years at the time, cushion filling collapsing</td>
<td>Frame is broken and the cover/cover underneath is failing apart - item has guarantee of 10 years at the time, cushion filling collapsing</td>
<td>Customer purchased sofa in April but both seat cushions have sagged in the middle - customer says they haven't used it exclusively but P&amp;K family says &quot;seat is in line&quot;</td>
<td>Custom cover and arm item for 3 months zip came off after washing</td>
<td>Custom cover and arm item for 3 months zip came off after washing</td>
<td>Custom cover and arm item for 3 months zip came off after washing</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td></td>
</tr>
</tbody>
</table>

### Cushions began to attract lint and ball up.Job

<table>
<thead>
<tr>
<th>Filling Frame</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cushions began to attract lint and ball up.Job</td>
<td>Customer purchased sofa ready for new sofa arriving in two weeks when the sofa came in and could not get covers on. The sofa has been split along the edges and stitching has come away from the valance.</td>
<td>Being a pick for a new inner from the set/Up and the cushion that the stitching has collapsed in the centre.</td>
<td>As one second hand arm is inside that is broken</td>
<td>Broken part request: refund. &amp;202516192 higher to 202516192 exchange</td>
<td>Customer states that right arm is starting to lose shape and cushion is no longer contained.</td>
<td>Customer states that right arm is starting to lose shape and cushion is no longer contained.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td></td>
</tr>
</tbody>
</table>

### Height in seat. The arm is unknown, but the fabric is starting to pull. Determined to be a quality issue - exchanging for customer

<table>
<thead>
<tr>
<th>Filling Frame</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiffness on 2 seater sofa is coming away. Put on to a refund cover and payment for new covers taken using this.</td>
<td>Customer states that the centre/ corner of sectional has damaged and has created/splitting wood.</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td></td>
</tr>
</tbody>
</table>

### Fabric pilled badly even though not put in dryer

<table>
<thead>
<tr>
<th>Filling Frame</th>
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<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
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<tbody>
<tr>
<td>Stiffness on 2 seater sofa is coming away. Put on to a refund cover and payment for new covers taken using this.</td>
<td>Customer states that the centre/ corner of sectional has damaged and has created/splitting wood.</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td></td>
</tr>
</tbody>
</table>

### Quality, article clogging at seams after one wash

<table>
<thead>
<tr>
<th>Filling Frame</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upholstery and splitting (PVC)</td>
<td>Customer states that the centre/ corner of sectional has damaged and has created/splitting wood.</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Cushion fall apart after first wash. Deemed quality issue: Pulling for customer</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Customer states that one cushion is breaking and the other is not</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td>Quality issue - Pulling for first wash. Deemed quality issue; Pulling for first wash.</td>
<td></td>
</tr>
</tbody>
</table>

### Quality: 3/5/7/9/11/13/14/15 - One of the cushion covers has damaged along the seam when customer tried to iron the cover

<table>
<thead>
<tr>
<th>Filling Frame</th>
<th>Praying of Stitching</th>
<th>Flatness of Cushioning</th>
<th>Broken Frame</th>
<th>Torn Fabric</th>
<th>Lining of Filling Cushion</th>
<th>Broken Zipper</th>
<th>Enshrinement Hardware Fittings</th>
<th>Weave Structure</th>
<th>xmlns to Cushion Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please exchange one similiar cushion and the two cushions tried using this ironed.</td>
<td>The cushions are failing after 9 months; Customer purchased couch back in March. Customer has been calling customer service for two weeks. Giving a part cost; giving customer covers from a</td>
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<td></td>
</tr>
</tbody>
</table>
### Appendix 5

<table>
<thead>
<tr>
<th>Fabrics on white forest</th>
<th>Broken Hinges</th>
<th>Fabric Discoloration</th>
<th>Broken Wood</th>
<th>Broken Legs</th>
<th>Sagging Frame</th>
<th>Shrinking of Fabric</th>
<th>Broken Springs</th>
<th>Staining Near Staples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stained</td>
<td>Joint hinge bent</td>
<td>They washed it and it came out differently</td>
<td>25-PQ connector is bent</td>
<td>Customer states the leg of the couch is broken, please spare part just the leg (1) only. Thanks Melody</td>
<td>Damaged - stock cover started to look up</td>
<td>Ekторp warranty issue, spring broken</td>
<td>3/15/19 at 14:39:52</td>
<td>Customer returning a sofa frame that the pint was too near the edge of frame and split - MC issued to replace.</td>
</tr>
<tr>
<td>Stained</td>
<td>Spring of the frame has been hooked out</td>
<td>Customer bought a white sofa cover but after following the washing process it changed colour.</td>
<td>Velcro does not last</td>
<td>Support beam in the middle of the base has snapped off - customer ordered both but only received one</td>
<td>Customer is stating that there is a quality issue with the sofa. Delivery on 1/16/2016. The base in the sofa</td>
<td></td>
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</tr>
<tr>
<td>Back cushion cover has a small oil spot.</td>
<td>Fedex looks out from under the sofa</td>
<td>Washed cushions covered and faded color on the back part by Debina ref vouch for resident</td>
<td>Velcro fastener does not hold</td>
<td>Support beam in the front broke Martina</td>
<td></td>
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</tr>
<tr>
<td>Customer wanted to exchange stained cushions</td>
<td>Hinge broken - cheek Step 1</td>
<td>Issue: sofa has dirt and color is faded. Resolution: 2/1/14</td>
<td>Velcro does not last</td>
<td>Support beam in the front broke Martina</td>
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<tr>
<td>Hinge of the backrest cracks</td>
<td>NEW EXCHANGE washed it and the color and material appears diff on</td>
<td>Broken middle strip</td>
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<tr>
<td>Stain on cover</td>
<td>15: discolored job</td>
<td>15: discolored job</td>
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<tr>
<td>Stain on Covers</td>
<td>Spring bracket broken</td>
<td>Discolored after washing - wgw</td>
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<tr>
<td>Stains</td>
<td>Springs are broken</td>
<td>Slight dislocation with noth discussed wgw</td>
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<tr>
<td>Stains</td>
<td>MM spring broken</td>
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<tr>
<td>ISSUE</td>
<td>DESCRIPTION</td>
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<tr>
<td>Seat cushion cover has 25 cushions</td>
<td>The cushions were item stitching coming apart on the frame. The fabric was peeling off the frame 10 yr ago but still under warranty. Customer purchased in 11/2015. Note: where you sit, you can see three different sections. Customer is requesting pictures and I will send. Thanks, MARC</td>
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<tr>
<td>Customer exchange for covers that &quot;pilling&quot;</td>
<td>Customer states there is a hole with the legs where the fabric was peeling. Customer has already tried replacing legs. Customer requested to do for new one. Thanks, Angel.</td>
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<tr>
<td>Cushion cover is pilling</td>
<td>Customer needs new cushion since purchase cushions have been purchased in 2009 receipt Customer purchased ektorp customer cooshens from a different couch. Customer is requesting pick up replacing feet and a replacement due to the quality issue, 15 yr warranty. Customer states there is an armrest on del 13/28/12 (dec) recpt info 313-19-84</td>
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<tr>
<td>Customer exchange for cushions</td>
<td>Customer states there is a hole with the legs where the fabric was peeling. Customer has already tried replacing legs. Customer requested to do for new one. Thanks, Angel.</td>
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<tr>
<td>Cushion cover is sagging</td>
<td>Customer states there is a hole with the legs where the fabric was peeling. Customer has already tried replacing legs. Customer requested to do for new one. Thanks, Angel.</td>
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<tr>
<td>Cushion cover is torn</td>
<td>Customer states there is a hole with the legs where the fabric was peeling. Customer has already tried replacing legs. Customer requested to do for new one. Thanks, Angel.</td>
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</tr>
<tr>
<td>FILINGS OF FABRIC</td>
<td>FRAYING OF STITCHES</td>
<td>FLATTENING OF CUSHIONS</td>
<td>BUCKED FRAME</td>
<td>TORN FABRIC</td>
<td>LUMPING OF CUSHION FILLING</td>
<td>BUCKED ZIPPER</td>
<td>CONSIDERED HANGMAN FITTINGS</td>
<td>MEAS STRUCTURE</td>
</tr>
<tr>
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</tr>
<tr>
<td>poor quality pilling fabric really bad</td>
<td>fabric suctions are missing/compressing. back with recovery, and deemed to be a quality issue.</td>
<td>customer states the back cushion is not holding its shape. pm was not a replacement. pull new one</td>
<td>customer states the back cushion is not holding its shape. pm was not a replacement. pull new one</td>
<td>customer states the back cushion is not holding its shape. pm was not a replacement. pull new one</td>
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<td>customer states the back cushion is not holding its shape. pm was not a replacement. pull new one</td>
</tr>
<tr>
<td>loose stitching on the surface / discolored</td>
<td>customer states that the sofa is sinking in and he has only had it for a year, i couldnt add it via script but the order number is 215-766-761 thanks customer is requesting accommodation</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
<td>cushion has small crack</td>
</tr>
<tr>
<td>after 3 months, heavy wear on the backrest</td>
<td>seam was coming apart</td>
<td>leg and wood underneath is falling apart</td>
<td>leg and wood underneath is falling apart</td>
<td>leg and wood underneath is falling apart</td>
<td>leg and wood underneath is falling apart</td>
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<td>leg and wood underneath is falling apart</td>
<td>leg and wood underneath is falling apart</td>
</tr>
<tr>
<td>after washing, stuff forms</td>
<td>pillowcase to the seam torn, 25-01 armrest broken</td>
<td>customer states that the sofa is sinking in and he has only had it for a year, i couldnt add it via script but the order number is 215-766-761 thanks customer is requesting accommodation</td>
<td>customer states that the sofa is sinking in and he has only had it for a year, i couldnt add it via script but the order number is 215-766-761 thanks customer is requesting accommodation</td>
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</tr>
<tr>
<td>after washing, stuff forms</td>
<td>a cover from the pillow cushions at the seam</td>
<td>154 flat cushion s/p flat 3656107</td>
<td>completely sat through</td>
<td>completely sat through</td>
<td>completely sat through</td>
<td>completely sat through</td>
<td>completely sat through</td>
<td>completely sat through</td>
</tr>
<tr>
<td>bed and seats worn out after a short time</td>
<td>cover seam torn</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
<td>cushion has come through, have messed, lumped in, wgr</td>
</tr>
<tr>
<td>bed and seats worn out after a short time</td>
<td>cracked the seam</td>
<td>the cushion is not fully filled with the cotton and is uneven</td>
<td>the cushion is not fully filled with the cotton and is uneven</td>
<td>the cushion is not fully filled with the cotton and is uneven</td>
<td>the cushion is not fully filled with the cotton and is uneven</td>
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<td>the cushion is not fully filled with the cotton and is uneven</td>
<td>the cushion is not fully filled with the cotton and is uneven</td>
</tr>
<tr>
<td>bought only in may and strong pilling</td>
<td>settle break in, grip is torn off</td>
<td>pillow set through</td>
<td>pillow set through</td>
<td>pillow set through</td>
<td>pillow set through</td>
<td>pillow set through</td>
<td>pillow set through</td>
<td>pillow set through</td>
</tr>
<tr>
<td>FILLING OF FABRIC</td>
<td>PAVING OF STITCHES</td>
<td>PLATFORMING OF CHASSIS</td>
<td>BROKEN FRAME</td>
<td>TORN FABRIC</td>
<td>LUMINOS OF CHASSIS FILLING</td>
<td>BROKEN ZIPPER</td>
<td>DISOBIDIENT HARDWARE FITTINGS</td>
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</tbody>
</table>
| **R/R the cushions became broken** | **WGW - seam defects, can not be installed** | **Canvas cushions filling in corners are defective and the left are not to go back properly; customer has except but cannot pull out. Bought June 2011. Customer would like to come in and look at it. Thanks, Texas.** | **Customer states the back cushions are falling apart and sagging, cushion requiring replacement for basts. Product: Thanks Erin** | **Canvas have broken out** | **Defective seat cushions w/o all warranties. Will be flattened out** | **Defective seat cushions, cushions have started sagging in after 3 years. Product was sunking in after 3 years. Customer is stating there is a quality issue with cushions and the arm seat. The cushions are flat and the arm seat has all become lumpy and the sofa is really deflated. ** | **PILING OF FABRIC FRAYING OF STITCHES FLATTENING OF CUSHIONS BROKEN FRAME TORN FABRIC LUMPING OF CUSHION FILLING BROKEN ZIPPER DISOBIDIENT HARDWARE FITTINGS**

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**Appendix 5**