Master’s Thesis

The Hive

The Missing Actor Between the Interior Designer and the Office Furniture Supplier

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Level: Second Level

Program: Innovation Through Business, Engineering and Design – Specialization in Design

Course code: 5DI74E

Date: 2023-05-25
Abstract

This paper presents a project done within the field of office interior design, which aims to create an efficient set of services that caters to the needs of the interior designer while procuring and implementing used furniture in their projects. The project was conducted in collaboration with Plym Projekt AB, an interior design company who introduced the thesis topic, and Easy Steps, sustainability-focused consultancy company. The collaboration involved regular sessions throughout the course of the thesis, including feedback, guidance and co-creation. During the past two years, the Plym has seen an increase in the demand for sustainable furniture options in the office interior design field. Since then, the company has been attempting to update its business model to provide its customers with a sustainable alternative, encountering obstacles along the way. In addition to a literature review, primary research was conducted, including stakeholder interviews and an end-user questionnaire. Upon empirical data, the authors identified a gap in the industry that is ideally suited for a new actor. The project results in the development of this new actor and its business activities through service design, proposing a set of services that will not only benefit the interior designer, but also its clients, furniture suppliers, and other stakeholders in the office furniture industry. Finally, the service is partially demonstrated through the prototype of a digital platform.

Keywords

Office furniture; interior design; circular economy; sustainability; service design.
Acknowledgements

We would like to thank professor and examiner Mathilda Tham, and our supervisors Miguel Salinas and Yan Ki Lee, for their time and dedication to tutoring us throughout this process. We would also like to express our appreciation for the collaboration of Louise Plym, from Plym Projekt, and Stephanie Bedin, from Easy Steps, who did not only contribute to the content but also mentored us during the project with such care. Besides, we would like to thank Juan Velasquez, who guided us through the first academic steps of a master’s thesis. We would like to especially thank our families and friends, who offered emotional and psychological support along the way. Finally, we would like to highlight our appreciation for each interview participant and questionnaire correspondent, who provided data upon which this project was developed.
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## Glossary

<table>
<thead>
<tr>
<th>Word/concept</th>
<th>Definition/referred in this paper as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability/sustainable</td>
<td>The short term of sustainability is primarily referring to the environmental sphere of sustainability.</td>
</tr>
<tr>
<td>Circularity/circular</td>
<td>Circularity is portrayed as one way to achieve sustainability. Circularity refers to resources and materials.</td>
</tr>
<tr>
<td>Circular Economy</td>
<td>The circular economy is a business model theory that includes a way of introducing activities that allow circularity.</td>
</tr>
<tr>
<td>Product-Service System</td>
<td>A circular economy business model. Its most common definition is the kind of business that transforms products into services.</td>
</tr>
<tr>
<td>Client</td>
<td>The interior designer’s client; the company that hires the interior designer’s services; the secondary customer (through the interior designer).</td>
</tr>
<tr>
<td>End-user</td>
<td>People who use the furniture; workers at clients’ companies.</td>
</tr>
<tr>
<td>Customer</td>
<td>The interior designer is the primary customer and their client, the secondary.</td>
</tr>
<tr>
<td>User</td>
<td>The user of the platform, not necessarily the customer, but also the customer’s client, and collaborators.</td>
</tr>
<tr>
<td>Actor</td>
<td>The new stakeholder proposed by the authors to provide the required services to fill in the identified gap in the industry.</td>
</tr>
</tbody>
</table>

### Furniture:

<table>
<thead>
<tr>
<th>Sustainable furniture</th>
<th>Used furniture</th>
<th>Pre-owned furniture: second-hand furniture, used externally.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inventory furniture: owned by the company, used internally.</td>
</tr>
<tr>
<td>Circular furniture</td>
<td></td>
<td>New sustainable furniture produced with recycled materials; designed to be modular, of easy disassembly; uses less resources.</td>
</tr>
<tr>
<td>New sustainable furniture</td>
<td></td>
<td>New sustainable furniture that is produced with environmental considerations, but does not fit within the circularity fraction of sustainability.</td>
</tr>
</tbody>
</table>

Unsustainable furniture: Furniture made in a linear way, or that does not consider environmental factors nor circularity.
1 Introduction

1.1 Project Description and Presentation of Results

This paper describes a master’s thesis project done within the office interior design field. The project is developed in collaboration with Plym, an interior design company located in Växjö, Sweden, with a specialty in headquarters and office interiors for large private corporations. Louise Plym wants to offer sustainable furnishing solutions to her clients, with a particular emphasis on the reuse of furniture. Easy Steps, a local consultancy company with a focus on sustainability policies, provides the project with sustainable and circular consulting expertise for this research.

The project development includes primary research, with interviews and surveys to understand the context and provide information to create a solution. Empirical findings suggest that clients are willing to incorporate pre-owned furniture into their offices. However, their expectations about the final cost can be challenging.

Nonetheless, the procurement process for pre-owned office furniture becomes more complicated, due to the unreliable availability of colors, styles, and amount of pieces, besides challenges regarding logistics (planning, transportation, and storage), which require time. As a result, it becomes difficult to predict the final results and the final cost. The additional time of the interior designer’s service may lead to equivalent overall costs.

The project attempts to solve the problems faced by interior designers when introducing sustainable furniture alternatives, especially pre-owned office furniture. That means, simplifying the process of purchasing office furniture for interior designers through a service that compiles all available furniture from multiple sources (pre-owned and new) in one place. This service provider would provide the interior designer with the necessary information to make sustainably responsible decisions, such as the furniture’s CO2 emission. In addition, transportation, storage, and assembling services will be available. This new Actor ultimately contributes to a circularity in the industry, advancing the circulation of furniture and promoting sustainable practices.
1.2 Personal Background and Motivation

This project is developed by Luciana Bohnert and Shiyi Jin as a master's thesis in Innovation through Business, Engineering, and Design with a specialization in design, at Linnaeus University Växjö. Luciana has a broad design background, having her bachelor’s degree in design for sustainability, while Shiyi has a traditional bachelor’s degree in industrial design. With two different design backgrounds, the students complement each other’s skills and knowledge and learn from each other in order to provide the best possible project results. The two students share the ownership of the project and are responsible for conducting the research, under a period of 20 weeks on a full-time basis. As master’s candidates, the authors see the project as an opportunity to contribute to the field of sustainable design and promote the circularity of furniture, both of which benefit the office furniture industry.

Given that promoting sustainability in this industry requires several disciplines to cooperate, a multidisciplinary approach has been used to bring together diverse skill sets and knowledge learned in their interdisciplinary master’s program. The experience in interdisciplinary teams with business and engineering students made it possible for the authors to have a better understanding of the disciplines. That allowed for them to apply their learnings about business and approach the topic of this paper with an overview of not only design but also business aspects. It is valid to highlight that the authors are not experts in business, therefore, the authors recognize the need for further research in the business parts of this project.

1.3 Aim and Purpose

The research aims to investigate the overall situation of the implementation of used furniture in interior design projects for corporate clients in Sweden. It has the goal to analyze the challenges of the interior designer and identify the opportunities for solving those challenges.

Based on the research findings, the goal of the project is to propose an effective way to provide the necessary support for interior designers during the procurement process.
of sustainable furniture alternatives. The objective is to simplify furniture procurement from multiple sources.

1.4 Field of Study and Delimitations

Target Group

The office furniture industry encompasses a variety of stakeholders, including interior designers, furniture suppliers, clients (companies hiring the interior design service), and end-users (the client’s employees, and users of the furniture). This project caters primarily to interior designers. Thus, it is limited to scenarios in which clients require interior design services, not accounting for those purchasing furniture directly from suppliers. The target group is interior designers with a specialization in office workspaces in the corporate sector.

Sector and Office Furniture

It does not cover the public sector (i.e. schools, universities, governmental facilities), the health sector (i.e. hospitals, health clinics, aesthetic clinics), the retail sector (i.e. stores, warehouses), nor the hospitality sector (i.e. hotels, restaurants) either. In this paper, the word furniture does not cover decoration items (i.e. curtains, cushions), office supplies (i.e. staplers, paper, pens), nor does it cover electronics and appliances (i.e. computers, televisions, coffee machines).

Sustainability, Circular Economy and Circularity

*Sustainability* is a word with a broad meaning, which makes it important to define. Although there are 3 aspects of sustainability (environmental, economic, and social), the paper uses the word *sustainability* as a synonym for environmental sustainability. When referring to economic or social sustainability, the term is explained. Environmental sustainability encompasses the term circularity, which refers to putting materials and resources into a loop. That means that circularity can be both
reusing a piece of furniture or recycling its pieces to produce something new. However, a piece of furniture can be done with a sustainable design, without it being circular. Jones (2008) defines the term sustainable design as the approach that is concerned with natural resource depletion and is interested in the Earth’s wellbeing. In this project, the reuse of furniture is considered a circular and sustainable practice, while new sustainable furniture is not necessarily circular, but can be. Therefore, sustainable furniture selection is used as an umbrella term for an interior designer’s selection of furniture that will cause less environmental impact, be it for circulating pre-owned furniture or by choosing the options with the least CO2 emissions.

According to the Ellen MacArthur Foundation, a circular economy is a business framework that addresses planetary issues (EMF, 2017). Although some sources claim that circular economy and circularity are interchangeable terms, this paper differs between the two concepts in this way: circularity is the mode on which resources are in, while the circular economy refers to the business models that aim to provide services that allow the circularity (circular mode) of products and resources in a variety of ways.

1.5 Research Questions

Primary research question:

- How to provide support for interior designers to implement environmentally sustainable office furniture in Sweden?

Secondary research questions:

- What is the interior designer’s responsibility in the sustainability of the office furniture industry?
- How do end-users perceive the use of pre-owned furniture in the office environment?
2 Background

2.1 Current Context in the Office Furniture Industry

The Swedish Federation of Wood and Furniture Industry estimates that Sweden’s total office furniture production in 2022 corresponded to 4.8 billion SEK, accounting for 17% of the total national production of furniture (Trä- och Möbelföretagen, 2022). That brings environmental concerns, including the CO2 emissions amount that the office furniture production is responsible for, which corresponds to 150,000 tons yearly (Research Institute of Sweden, 2019). The Research Institute of Sweden (2019) further highlights that after just a few years of use, office furniture is thrown away for becoming outdated, or because of business changes. Changes of which are dictated by trends, technology, and even world pandemics.

During the last 10 years, there has been a tendency for companies to downsize their office space due to the increase in maintenance costs of such facilities, as well as a trend of adopting activity-based workplaces (ABW), an office model that offers more flexibility while increasing productivity (Mellquist, 2016). Mellquist (2016) suggests that a surplus of unwanted office furniture is created every time a company decides to downsize, relocate, or restructure their office layout. These changes in the workplace have been seen on a larger scale during the Covid-19 pandemic, and since then, office spaces are no longer crucial, but a convenience (Falkman, 2020).

This surplus of pre-owned office furniture brings opportunities for circular business models to emerge. Besides, with the upcoming Corporate Sustainability Reporting Directive (CSRD), legislated by the European Union (EU), companies within the economic block are expected to get their sustainability performance reporting on track starting in 2024 (Official Journal of the European Union, 2022). These new sets of regulations also may lead to the emergence of new business models (Circle Economy, 2023). In Sweden, there are already signs of preparation from the corporate sector, which are also observed by interior designers and taken as an opportunity to work with the surplus of pre-owned furniture. More and more interior designers in the country are implementing pre-owned furniture in their interiors, which has transformed the surplus into an unreliable availability.
To address the low availability of pre-owned furniture, different stakeholders in the industry have been taking different paths. A common trend among suppliers, predicted by Besch (2005), is having business models that offer subscriptions for rental or lease of furniture, which allows furniture to circulate from client to client, also known as product-service system (PSS). As a business model under the circular economy, PSS is a solution comprising products and services that fulfill customer needs (Tukker and Tischner, 2006). Empirical findings imply that rental furniture companies that currently exist in the Swedish market are not large enough to provide the variety of furniture for clients to choose from. Subscription services may include logistics, assembly, and even long-term agreement for replacement and repair of furniture. That service often excludes or limits interior design companies’ roles in the process, which shows a need for yet another way to approach environmental issues and the challenges when implementing pre-owned furniture in interiors.

2.2 Collaboration

Plym Projekt AB is an interior and architectural design company based in Växjö, South of Sweden. Founder and interior designer Louise Plym always had the environment in mind, and the wish for the company to do its part towards sustainability in the industry. In the last 2-3 years, Plym has seen the opportunity to update the company’s services, by adding an additional sustainability offer on top of their current services. That has been done by the company on a small scale, by including pre-owned furniture in their interiors. However, they have noticed challenges that come when attempting to do so on a larger scale. Although pre-owned furniture is cheaper, Plym emphasizes that the extra work required to find, match, and certify furniture, makes the price of the service compensate for that of new furniture. The company recognizes that pursuing sustainable design requires approximately three times the work of a non-sustainable approach, but believes that is a small price to pay for reducing environmental impact. Nonetheless, her clients do not always feel the same way.

Easy Steps is a newly established consulting business that provides consultancy services in sustainability and circular economy.
Plym's journey through the implementation of sustainability in their interiors makes it the main case study (see Appendix I) for a thesis project, as well as the main contributor to the thesis project. Easy Steps’ founder, Stephanie Bedin, joins the project as a consultant that supports and provides information about the topics of sustainability and circularity. The collaboration allows the authors to co-create with the main stakeholder in the topic, an interior designer (Louise Plym), and a sustainability expert (Stephanie Bedin).
3 Theoretical Framework

3.1 Sustainability and Circular Economy

Sustainability and circular economy are two concepts that have emerged as a response to the increasing awareness of the negative impact of economic activities on the environment and society. The concept of sustainability entails the ability of current generations to meet their needs while preserving the capacity of future generations to meet their own needs, thus ensuring the long-term survival of humanity and the planet. Sustainability aims for the harmonious integration of social, economic, and environmental factors to attain a balanced and equitable world that fosters the well-being of all (Purvis, Mao and Robinson, 2019).

A circular economy is an alternative framework that addresses global issues. Its main objectives are to eliminate waste and pollution, circulate products and materials, and regenerate nature (Ellen MacArthur Foundation, 2017). The primary goal of a circular
economy is to establish a closed-loop system where waste is eliminated and materials are kept in use for as long as possible, either through maintenance, repair, reuse, remanufacturing, refurbishment, or recycling. The Ellen MacArthur Foundation created a circular economy system diagram (see Figure 1) based on Cradle to Cradle (Braungart and McDonough, 2009), which shows the complexity of a circular economy and its many segments that have their own roles to play. This framework is in stark contrast to the current linear economic model, which is characterized by a take-make-dispose pattern that results in the depletion of resources, environmental degradation, and social inequality (Kirchherr, Reike and Hekkert, 2017).

From their literature review, Geissdoerfer et al. (2017) have identified several relationship concepts between sustainability and circular economy. This paper chooses to use the theory of the subset relationship between these two concepts. This theory suggests that the circular economy is one of the solutions to foster sustainable systems (Seliger, 2007; Evans et al., 2009; Allwood et al., 2012; Bocken et al., 2014; Weissbrod and Bocken, 2017).

3.2 Strategies for Circularity

Bocken et al. (2016) propose a framework of strategies for the circularity of resources. With the objective of offering observations about “the current product design and business model strategies suited for the move to a circular economy”, the authors extracted concepts from the available literature (Bocken et al., 2016). The framework was built upon the works of Stahel (2010), Braungart and Mcdonough (2009), and Braungart et al. (2008), with the concepts of narrowing, closing, and slowing loops of resources (see Figure 2). The three basic strategies are:

- Narrowing flows: involves using less material per product and using methods for resource efficiency.
- Closing resource flows: involves recycling materials and resources to create a circular flow between post-use and production.
- Slowing resource flows: involves designing products that have a longer lifespan and utilizing service loops to extend a product's life through repair or remanufacturing.
3.3 End-user Acceptance

The end-user perception of pre-owned office furniture in Sweden is not widely studied. Mellquist (2016), who is currently one of Sweden’s experts on the topic, explored the topic for her MBA thesis. The paper’s aim was not only to find out the end-user's attitudes towards pre-owned office furniture but also to identify if their perception would be a challenge or if it would create opportunities. Mellquist (2016) concluded that “end-user attitudes are not a major obstacle to introducing pre-owned furniture in the office space”. However, functionality, aesthetics, flexibility, and price were factors that could influence decision-making. She identified two challenges in the industry, which also come with opportunities for one or several stakeholders in the industry. The first one is the surplus of furniture due to offices becoming smaller, which indicates a reason for reusing, rather than renting/leasing (Mellquist, 2016). The challenge mentioned by Mellquist (2016) is the lack of responsibility for the
furniture in the interior, which indicates the need for a new service, provided by an existing stakeholder in the industry or a completely new actor. This Actor could influence the reuse of furniture positively, and potentially boost the knowledge of the company about the subject, promoting its sustainability values (Mellquist, 2016). The study was conducted pre-Covid-19, leaving an opening to the question of whether the pandemic has influenced the end-user’s perception. The author does not focus on the interior designer, but rather on other stakeholders within the office furniture industry.
4 Methodological Framework

4.1 Research Methods

Interview

Interviews are used as a primary research method for acquiring in-depth knowledge of a specific subject (Muratovski, 2016, p. 61). They are a widely used research method and can be classified into different types based on the degree of structure. Structured interviews are characterized by predetermined questions and a script that follows a fixed sequence. On the other hand, unstructured interviews have no set questions and allow for a more flexible conversational format. Semi-structured interviews, as the name suggests, lie somewhere in between.

This research employs a semi-unstructured interview conducted to collect primary data from stakeholders (Hanington and Martin, 2019). This approach provides an opportunity to gather detailed and specific information that may not be available through literature reviews. It enables the researchers to explore participants' responses in-depth, possibly yielding more detailed answers and verifying their hypotheses, besides filling up the gaps in the available literature on the specific subject. For acquiring a wide range of perspectives 10 interviews were conducted, with interior designers, suppliers, and decision-makers.

Questionnaire

Questionnaires are a primary research method for gathering general information and quantitative data from a target group about a subject. According to van Boeijen et al. (2020) questionnaires are a helpful way to assess the end-user’s perception of a subject while gaining quantitative insight. The authors followed these principles in this research, creating a questionnaire comprising six sectors that adhere to the research direction standards. The questions were carefully designed to ensure clarity, conciseness, and ease of understanding, with a combination of open-ended and
closed-ended questions to allow personalized responses (McCombes, 2019). The authors conducted a pilot test to ensure the questionnaire's reliability and validity.

To update Mellquist’s (2016) survey on the end-user's perception of pre-owned office furniture in Sweden, a questionnaire was conducted to determine if their perception changed after 7 years.

4.2 Business Methods

Business Model Canvas

A business model canvas illustrates the explanation of how a company creates and delivers value, and how the company goes around its main activities (Osterwalder and Pigneur, 2010). This tool is used to frame the business’ information in a way that people from different backgrounds can understand. It consists of nine basic blocks within a frame that show the logic of how the business intends to profit. The main blocks are customers, offers, infrastructure, and financial viability (Osterwalder and Pigneur, 2010). The framework was used to portray the business for which the service proposed in this project was designed.

Market Analysis

A market analysis is a crucial element of business plans and research initiatives that evaluate a product's or service's viability (Coursera, 2022). It involves investigating and analyzing several market-influencing factors, such as customer needs, trends, competitors, and potential growth opportunities. The primary purpose of market analysis is to gain an in-depth understanding of the market to inform business decisions, strategies, and marketing initiatives (Visme, 2022). For background information about the topic of this project, market analysis was done to find out the current solutions in the office furniture industry.
4.3 Service Design Methods

System Diagramming (the service) process flow diagram

The process flow diagram, based on American National Standards Institute developed the standard, is a method that presents a graphical depiction of a system, systematically outlining the sequence of steps involved (Shelly et al., 2011). It provides an intuitive and visually representative means of describing and analyzing complicated processes, enabling enhanced comprehension and explication. Through concise illustration, flowcharts foster ease of understanding among individuals from diverse backgrounds, thereby promoting effective communication and facilitating collaboration (Nakatsu, 2009).

Customer Journey Map

The customer journey map (CJM) serves as a visual representation depicting the customer’s interactions and experiences while engaging with the product, which includes touchpoints, emotions, and desired actions (Miranda, 2021). CJM offers a structured framework for comprehending and visualizing the customer’s experience, encompassing five steps (Gergő, 2019). The authors have adapted these steps, tailored to the specific requirements of their project. Additionally, the authors integrate open-ended questions into constructing the CJM, intending to enhance its quality and usefulness:

- What exactly does the user do at this step?
- Are there other options?
- Which steps will the user feel more comfortable choosing?
- How to deal with the problems that arise?

Service Blueprint

The service blueprint is a method for the visualization of a service’s details, including the interactions between the *frontstage* and the *backstage* of the system (Gibbson,
25

Visual Sitemap

Sitemap is a hierarchical framework of the structure of a website, in the form of a diagram. Sitemaps do not only make the user’s navigation through the website more effective, but also help the programmed machinery of the website to easily execute functions such as the search engine (Michelangelo and Pasqua, 2020). There are two types of sitemaps: the visual version, which is a tool for the designer to use as a draft for the website prototype and to show clients how the website will flow; and the XML version is a GPS navigation tool for the program (MayeCreate, 2019). In this project, a visual sitemap was used to support the prototype and explain the flow of the platform through which a portion of the service will be provided.

Website Prototype

Website prototype is the kind reserved for service design, as a method to showcase services that are partially or completely offered online (Ulrich et al. 2019). While website prototyping can be done as a demonstration of how the website will look once it is live, it is often a navigable prototype that allows people to interact and test the features of the website (Experience UX, 2015). In this project, an interactive website prototype was developed with the primary intention of showcasing the online dimension of the service, but also with the objective of demonstrating the website’s appearance and ultimately, testing the concept with a potential user.
Concept Test

Concept testing is an experimental activity conducted to discover the users' perceptions and opinions of products or services that were developed (Ulrich et al. 2019). There are several ways of running a concept testing session, such as face-to-face and over the Internet (Ulrich et al. 2019). A concept test with the collaborators was conducted over the internet, where the potential user, an interior designer, could navigate through and interact with the platform where the service would be provided.
5 Data Analysis

5.1 The Circular Economy

A circular economy aims to achieve a regenerative system that minimizes resource input, waste, emissions, and energy leakage by slowing, closing, and shrinking material and energy loops. This is achievable through various strategies, including durable design, maintenance, repair, reuse, remanufacturing, refurbishment, and recycling. By extending the useful life of resources, a circular economy reduces the need for extracting new resources, minimizes waste generation, and improves resource efficiency.

Moreover, besides its environmental benefits, the circular economy also presents several economic advantages. It creates new business opportunities, fosters innovation, and generates employment across various industries. Additionally, a circular economy enhances resource security by reducing dependency on scarce or volatile resources, thus increasing the economy's resilience and mitigating its exposure to price fluctuations.

5.2 Four-Stage Order

A set of stages has been identified early in the project, following the logic of the Swedish waste management principles: waste prevention, reuse, material recycling and biological treatment, energy recovery, and disposal (Avfall Sverige, 2022). The stages were grounded in the strategies proposed by Bocken et al. (2016). The stages were later confirmed by interior designers, who have been putting the process into action. The stages are:

- **Inventory furniture** (stage A): the pieces of furniture already owned by the client, internally used in the company.
- **Pre-owned furniture** (stage B): the pieces of furniture that are owned by external actors, and are out in the market for sale.
● **New sustainable furniture** (stage C): the pieces of furniture that are produced with consideration to the environment, with data regarding CO2 emissions and material impact.

● **New unsustainable furniture** (stage D): the pieces of furniture that are produced with the least consideration to the environment, with no data regarding CO2 emissions or material impact.

Stages A and B route back to the extension of products’ lifespans, within *slowing resource flows*, which involves the reuse, upcycling, and refurbishing of furniture. Stage C can also use strategies to *slow resource flows*, through the design of high-quality durable furniture. Besides, new sustainable furniture can also be made with strategies to *close resource flows*, by designing modular furniture that are easy to dis- and reassemble (Bocken et al., 2016).

The illustration below (see Figure 3) shows how the simplified order of procurement with multiple sources of furniture works. The first step is to do an inventory of the existing furniture in the client’s ownership and select the pieces that can be reused (with or without changes) to fulfill the client’s needs in the new interior. The second step is to check the availability of pre-owned furniture for sale. If the previous two stages did not fulfill the client’s needs, the designer looks into new sustainably produced furniture. If there are any remaining needs, the designer proceeds with the last option, new not sustainably produced furniture.

![Figure 3: The Four-Stage Procurement Order](image-url)
5.3 Interviews

Empirical findings show patterns in the topic, exposing the differences and similarities among stakeholders and the current reality in the industry. When questioned about current tendencies in the office furniture industry, downsizing, and remote work were frequently mentioned. According to a few interviewees, this phenomenon has been going on for around 5-10 years. Employers have been reducing their office space, as the cost of maintaining offices has been increasing, as well as flexible working (remote or hybrid), which was already a trend before Covid-19. Although companies have been downsizing, many opt to create a fun and cozy space that will give the employees the right atmosphere to optimize their work. But all these changes and downsizing come with a surplus of pre-owned furniture, which has been now introduced by some interior designers in the office sector.

When it comes to challenges when introducing used office furniture in new interiors, the designers have highlighted that working with pre-owned furniture requires a completely different process in comparison to the traditional way (see Figure 4). Furniture procurement is only one part of a complex interior design process. In this paper, traditional procurement process refers to the one when interior designers do not include pre-owned furniture (see Figure 5). In the traditional process, interior designers also select furniture by furniture, preferably from the same supplier, with the difference that new furniture can be bought at any time. However, when it comes to the pre-owned furniture procurement the process of purchasing is done throughout the project, for their availability is not reliable. This process is more time-consuming and demands meticulous planning ahead of time. The planning includes logistics, storage, and transportation, which suppliers have also mentioned. As just stated, the availability of products is a big challenge that influences not only the process but also the result and the budget. Both interior designers and suppliers mention that it is a challenge to find the right color, style, and amount of the product, which implies more work in searching and more money spent on the service, rather than on the furniture. Besides, the client’s incomprehension about the process leads them to assume that choosing pre-owned furniture will be cheaper. In the end, as some participants highlighted, everything goes back to the budget. Therefore, the initial challenge is the
cost, which is composed of the main underlying motives: availability, time
consumption, and logistics.

![Diagram of the procurement process when including pre-owned furniture]

**Figure 4: The procurement process when including pre-owned furniture**

![Diagram of the traditional furniture procurement process]

**Figure 5: The traditional furniture procurement process**

The interviews consisted of approximately ten questions, with the flexibility to modify the questions, which are elaborated according to each participant, within a time limit of 45 minutes. The interviewers started with an introduction of themselves, as well as their field of study, project brief, as well as the participants’ specific contributions to the research. All the participants have given consent for the recording using Otter, an AI-powered website that automatically generates transcripts. The interviewers would end by thanking the participants, with a promise to share their thesis paper with them. In order to keep personal data safe and fix misunderstandings done by the AI, editing was necessary. Therefore, all edited transcripts have been revised by the participants prior to the publication of this paper. The interview transcripts are available in Appendix II.

5.4 Questionnaire

Out of 144 correspondents, of which one did not meet the target group, therefore the questionnaire had 143 active correspondents. The results also show a high acceptance
among people who work in office spaces. The participants were from various sectors, including education, marketing, and public organizations (despite the project delimitations excluding projects in the public sector, their employees’ perceptions of the furniture are still relevant). Although remote work has been increasing, especially since the pandemic, 85.4% of the participants work in the office 3 or more days a week (≥60% of their weekly work time), while only 7.7% work in the office once to less than once a week, or remotely. According to the data, 97.2% of the participants are willing to use pre-owned office furniture. Although the results confirm the willingness of the employees to use more circular furniture in their workspaces, the decision-making is often done by companies’ board members, including the CEO.

The authors took ethical considerations, with clarity of purpose, confidentiality of responses, and contact information available to the participants. The participants were assured that their personal information would not be disclosed, giving their consent when proceeding. After closing the questionnaire, the authors used appropriate methods to analyze the results. Details of the questionnaire are found in Appendix III.

5.5 Challenges

Inventory Furniture

According to stakeholders, the simplest furniture to reuse is from the client’s own inventory. Desks and office chairs are specifically easier to reuse because most companies already have the right amount of them according to the number of employees. Besides, if the interior will be done in the same space and building as the client already is, minor refurbishing can be done on the spot. However, if there is an amount of furniture to be refurbished and it must be done at a facility, not all of the pieces should be taken to the restorer at the same time in case the client will need to use it in the meantime. In that case, the refurbishing must be done in a few pieces at a time.
Pre-owned Furniture

The biggest challenges come with pre-owned furniture. Interior designers have mentioned that clients are not always happy with the final cost when they choose to reuse furniture. They often expect that this choice will be the most affordable, which is not always the case. This is due to the fact that the designers spend more time searching for the right options of furniture and that time is costly. It is not always quick to find the right furniture, due to the unreliable availability of colors, styles, and amount of pieces. The lack of availability requires the designer to search various websites and suppliers, which does not only require time but also planning and logistics. Because it is not a constant variable, pre-owned furniture makes it difficult to predict the results and the final cost. The extra time, planning, and logistics will cost the client the money that would be spent otherwise on new furniture. And that is not an incentive for the clients (especially smaller companies), for most of them will have a budget. However, many pre-owned office furniture suppliers say that working with high-end furniture is easier, for they have a longer warranty date and superior quality. They also argue that when clients understand the value of getting high-end pre-owned furniture for the price of new pieces of furniture with inferior quality, they are excited about reuse. Besides the existing options of suppliers offering pre-owned furniture, there is a lack of knowledge about the solutions available in the market. That leads to furniture being disposed of by companies for not knowing how to put it back in the cycle or who to sell it to.

New sustainable Furniture

The challenges with new sustainably produced furniture are different. It comes to the information it carries, which is a concern for several of the interviewed suppliers. Although manufacturers have been better at reporting furniture information, the system itself fails to have a standardized way of measuring things such as CO2 emissions and material impact. The available methods and measurement programs work on their own standards, which leaves a gap for greenwashing. The idea of separating newly produced furniture into sustainable and unsustainable is to achieve the least environmental impact within the furniture selection. Without a standardized
measurement solution, the comparison between two furniture pieces is not accurate. This makes one more reason to choose to reuse internally or externally.

Key Challenges

In conclusion, the key challenges when implementing used furniture in interior design (each contributing to the final cost of a project, in one way or the other) are:

- Unreliable availability of furniture in terms of quantity, color, and style in the market;
- The time-consuming procurement process, which makes the service cost compensating for the costs of purchasing new furniture;
- Logistics complications, which involves transportation, planning and temporary storage of furniture during the project;

5.6 Market Analysis

It is common that each supplier has their own contribution to sustainability. That is the case of Input Interiör and RP. As a traditional furniture supplier, Input Interiör also tries to help clients who opt for purchasing pre-owned furniture. Their solution was Greenified, a company that sells pre-owned furniture from Input Interiör’s showrooms and clients. Besides being a pre-owned furniture supplier RP has approached sustainability in yet another way. They created a furniture inventory app, which assists companies in tracking their owned furniture over the years, helping to prevent unnecessary disposal of furniture.

Among the solutions, there is a company that assembles furniture from three suppliers on one website, called Place2Place. They gather available furniture from Sweden’s largest pre-owned office furniture suppliers RP, Rekomo, and Soeco (Place2Place, 2021). Figure 6 shows Place2Place’s solution in the procurement process. Detailed information about the market analysis is found in Appendix IV.
Figure 6: The furniture procurement process with Place2Place
6 Design Project

6.1 Introduction to the Concept

The gap in the office furniture industry exceeds adjustments and adaptations. The authors created a new actor to perform the required activities, services, and tools to support the interior designer’s needs during the furniture procurement process and beyond. Service design can be divided into behind-the-scenes, backstage, and frontstage (Miller, 2016). The concept presented is divided into these three main layers (see Figure 7). Behind-the-scenes is the organization behind, or the business model, which is where the concept’s information and main activities are illustrated. The service system, which shows the connections of its activities with collaborators and customers is backstage, where activities are performed far from the customer’s sight. The frontstage is the window that the customer has into the service, in this case, a digital platform through which the customer has access to the Actor’s services and tools (customer-platform connections).

Figure 7: The layers of the Actor
6.2 The Business Model

The business model canvas below (Table 1) presents the Actor’s basic information, upon which the service design was built. It is relevant to mention that it is a business method, and therefore outside of the authors’ fields of expertise. However, as an actor in an interdisciplinary industry, the main administrative and executive staff must be composed of a business team with experts in business-to-business (B2B) and supply chain, an interior designer/architect familiar with the corporate sector, a service designer specialized in digital platforms, and sustainability experts.

Table 1: Business model canvas

<table>
<thead>
<tr>
<th>Key partners</th>
<th>Key activities</th>
<th>Value propositions</th>
<th>Customer relationships</th>
<th>Customer segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture suppliers</td>
<td>Gathering all sources of furniture in one place; check all the information of the furniture; contact with suppliers and purchasing storing and transporting furniture, assembling furniture and deliver of the interior, creation of report and certificate, the connection between used furniture seller and buyer.</td>
<td><strong>What:</strong> an Actor that solves the customer's problem, which is how to have a smoother process when purchasing furniture for interiors using several sources (new and pre-owned). <strong>How:</strong> the idea gathers all the available options of furniture in one place, making it easier to compare newly produced and find pre-owned, in an agile, sustainable, and convenient way.</td>
<td>Get: furniture fairs, int. des. forums, newsletters, magazines, etc</td>
<td><strong>Who needs it:</strong> Interior designers whose clients are not willing to spend the same amount on pre-owned as they would on newly produced furniture. The time-consuming process of finding the right furniture is what often makes things expensive. Interior designers whose clients are not willing to spend the same amount on pre-owned as they would on newly produced furniture. The time-consuming process of finding the right furniture is what often makes things expensive.</td>
</tr>
<tr>
<td>Transportation companies</td>
<td>Outsource part of the staff</td>
<td></td>
<td>Keep: always offer convenience to the customer in the first place Grow: keep updated with new techs that will benefit the int. des. (CO2 calculation, furniture pass., certificate, etc)</td>
<td></td>
</tr>
<tr>
<td>Key resources</td>
<td>Design team Transport service</td>
<td>Channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation service Warehouse Team of experts Administration team IT and programmers Legal team Customer support staff</td>
<td>A digital service for ordering from different suppliers, with only one check out and more services upon subscription (digital); logistics from supplier-warehouse-client (physical); storage of furniture until time for delivery (physical); assembly of furniture (physical).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost structure</td>
<td>From subscriptions (plus and premium) and additional services (transportation, storage, assembling)</td>
<td>Revenue streams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>First few years: low fee prices for transportation, administration, storage and service (even lower for suppliers to join), and 5% over furniture. When it starts growing: put prices up a little.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3 The Service System

The service system encompasses three main stakeholders:

- The interior designer is the service customer, meaning that they are the ones to pay directly for the service, through subscriptions. In return, they receive services and tools that support their furniture procurement process, having access to several suppliers of several types (see Figure 8).
- The clients are part of the system through the interior designer. In return, they receive a more affordable sustainable selection of furniture for their new office interior.
- The furniture supplier is the main collaborator of the service, providing the furniture. In return, they receive publicity and connections for purchasing pre-owned furniture from corporates.

![Figure 8: The furniture procurement with the Actor](image)

The service blueprint (see Figure 9) shows the flow of activities of the three main stakeholders, having the interior designer’s furniture procurement process at the center. The figure shows the simplified steps of this process, which starts as the interior designer uses the platform’s tools to find pre-owned or new furniture that fulfills their client’s needs. A list is combined, containing a preview of sustainability information about the selection, which then is sent to the client to be approved. If it is approved, the client proceeds with the payment, otherwise, the process repeats until the list is approved. With an additional service pack that includes transportation and storage, the client may decide beforehand whether they want to hire the service or not. In that case, the Actor would take care of the transportation and the temporary storage of the furniture, with the assembly of the furniture and delivery to the company’s new office.
6.4 The Platform

The platform is the means for the customer to access the services provided by the Actor. Although the interior designer is the Actor’s customer, the platform is also used by their client, to complete the work done by the customer. That makes the interior designer the primary user of the platform, and the client its secondary user. Collaborators, such as suppliers and service providers, are also users to the platform, performing their activities far from the customers’ eyes. That makes the collaborators tertiary users of the platform.

Customer Journey Map

The elements of the service CJM are categorized into five steps (see Figure 10). It involves the inclusion of interior designers as central figures (in red) and clients (in blue) as decision-makers and payers during the furniture procurement process. The CJM framework encompasses several components, namely goals, user steps, user stories, touchpoints, and priorities. Within the context of the paper, goals refer to the main user activities, which are either services or tools provided through the platform and executed by the Actor through manual or programmed actions.
User steps associated with each goal in the user steps represent common touchpoints and activities that during the procurement process involving designers and clients (see Figure 11).

Moreover, to extract valuable and implementable information, user stories are developed based on these user steps (see Figure 12).

Following the establishment of user steps and stories, a prioritization hierarchy is set, taking into account the significance of each touchpoint and activity (see Figure 13). The prioritization is indicated by colored arrows, with the green arrows denoting the highest priority, and the yellow arrows denoting the lowest priority. The number on the arrow represents the relative weight assigned to each touchpoint and activity (number 1 has the most weight). By utilizing the CJM, the authors gain insights into users’ platform experiences, the factors influencing their decision-making, and the value attributed to each activity. Subsequently, these findings inform the identification and optimization of the most critical steps and functions to enhance the service provided to users.
Based on the CJM analysis, the authors identified the sequential steps in purchasing sustainable furniture through the platform. The flowchart (see Figure 14) shows the activities of the primary (interior designer) and secondary (client) users with person-machine interactions in the frontstage, as well as one of the collaborators (supplier) in the backstage, showing the relations between the main frontstage and backstage activities. After incorporating the activities related to suppliers throughout the service system, the process was simplified into eight main activities:

- Sign contract (all)
- Upload furniture (supplier)
- Search and select furniture (interior designer)
- Get list approved (interior designer) - approve list with estimate report (client)
- Place order (interior designer) - receive the order (supplier)
- Payment (client)
- Receive furniture (client)
- Get certificate with a final report (client) - get score (interior designer and supplier)

Figure 13: CJM prioritization process - link here.
Among these activities, the user flowchart revealed that the Sign contract and the Upload were added to the original process (see Figure 15). Sign contract ensures the security of four parties (Actor, suppliers, interior designers, and clients) involved in the purchase process. The contract between the interior designer and the client is done on their own terms and it does not concern the Actor. The contract signed between the client and the Actor includes the agreement of additional logistics services chosen prior to the start of the project, reserving the settings about the payment for the second client-Actor contract. If not agreed upon, the client is responsible for providing and collecting the furniture within the set timeframe. The contract between the interior designer and the Actor is done as the subscription is chosen. The contract between the supplier and the Actor encompasses provisions regarding return, payment methods, logistics, and other relevant aspects. Contract-signing relationships are shown below.

Contracts

Figure 14: User flowchart - link [here](#).

Figure 15: User flowchart - sign contract - link [here](#).
Input of Furniture

During the Upload of available furniture by the supplier, the platform offers two options (see Figure 16). If the supplier has their own sales websites, the Actor automatically synchronizes the content from their websites within the agreed scope of the signed contract. Alternatively, if the supplier does not have their own website, the Actor manually synchronizes the information the supplier provides. This information will be kept updated in real-time. Add Inventory for the interior designer is an internal input of furniture tool to be used in case the interior designer intends to incorporate the client’s existing furniture into the current project. The interior designer has the opportunity to add other furniture that may not have been found through the platform. By adding external input of furniture, the interior designer benefits completely of the sustainable furnishing report, by including all sources/inputs of furniture used in the project. In addition, the interior designer and the client have the possibility to reach the platform to get help finding suppliers that are interested in purchasing the client’s remaining inventory furniture.

**Figure 16: User flowchart - input of furniture - link [here](#)**

Furniture Procurement and List Approval

Recurring steps occur during the furniture search and selection phase and the listing approval phase (see Figure 17). The list is sent to the client with a sample of the sustainability report, giving the client the opportunity to take decisions over the sustainability numbers previewed in the sample. If the client is unsatisfied with the furniture list assembled by the interior designer or requires modifications, the list is returned to the interior designer for further adjustments until the client approves the
final selection. It is important to note that clients must sign a purchase contract (in addition to the first one) with the Actor before proceeding to the payment, ensuring a secure transaction between the parties involved. This second contract must be separated from the first one, due to the personalized options and requirements of each supplier involved. The order can be done before the payment has been made, as long as the payment contract is signed.

![Furniture search and selection](image)

*Figure 17: User flowchart - furniture search, selection, and list approval - link [here](#).*

**Order and Payment**

Once the client approves the list and the payment contract has been signed, the designer will get a confirmation of the order, while the Actor forwards the lists to the suppliers for preparation (see Figure 18). It is worth mentioning that reservations involving pre-owned furniture need to be completed within two weeks due to limited inventory availability, and this time may differ from supplier to supplier. The payment due will depend on the contract, therefore, the method and time of payment are personalized according to the needs of the client and the requirements of the suppliers.
**Report and Certificate**

A report containing estimate numbers concerning the sustainability of the furniture selection is assembled by the Actor. The report is then added to the framed certificate given to the client, with the signatures of the platform’s director and the interior designer responsible for the project. In addition, the Actor will rate the supplier and the interior designer based on the project outcome, giving them points for sustainability that are displayed on their respective profiles on the platform (see Figure 19). Both the points and the certificate can be used for the marketing of the stakeholders’ contribution to sustainability.

Figure 18: User flowchart - order and payment - link [here](#).

Figure 19: User flowchart - get report - link [here](#).
Website Prototype

A website prototype was done based on the sitemap (see Figure 20) using Figma, a website design software. The purpose was to demonstrate the digital dimension of the service, focusing in the experiences of the primary (interior designer) and secondary (client) users. The prototype included basic pages (i.e. about and contact) and complex pages (i.e. products and dashboard).

![Figure 20: Sitemap](link)

The sitemap gives the foundation to the website development process in Figma (see Figure 21). The construction of the website involved various elements, including headers, footers, sidebars, navigation menus, content areas, and dashboards for accommodating distinct users. Each element assumes a specific role in shaping the overall user experience and functionality of the website. For instance, the components positioned in the header may represent essential information and navigation options to users. Similarly, the footer displays copyright information, legal disclaimers, and additional navigational links. For more elaborate visual representations and pertinent hyperlinks, see Appendix V.
The logical architecture diagram (see Figure 22) serves as a graphical representation of the website’s structure and organization. The authors use it to provide a comprehensive overview of the constituent elements and their relationships for a clear understanding of the system’s composition. By visually illustrating the logical architecture, it shows how components and page elements interact and collaborate to deliver the desired functionalities.

Name

The Actor is dedicated to integrating office furniture from different suppliers to simplify the furniture procurement process for interior designers while
simultaneously serving as a sales channel for suppliers. Consequently, the business embodies the concept of a beehive, wherein suppliers are consolidated to achieve efficient utilization. Given the Actor’s target market is Sweden, selecting a brand name becomes crucial as it can imbue customers with symbolic meaning, aiding in service identification and the decision-making process, as Herbig and Milewicz (1993) suggested. Thus, the authors have proposed the name Bikupa, meaning “beehive” in Swedish. As a metaphor, the Actor’s platform represents a hive of suppliers, from which the interior designers harvest the furniture. The choice of a Swedish word that does not contain letters of the Swedish alphabet (ö, ä, å) prevents the display of irregularities or font compatibility issues that may arise from the use of foreign letters on international websites while preserving the original name of the Actor.

Concept Test

An online test of the digital service was conducted with the collaborators, Plym and Easy Steps. Plym, as an interior designer using the platform, shared the screen while navigating through the website. The interior designer went through the user journey through the prototype, exploring the free functions and going deeper into the paid version functions, such as the interior designer’s dashboard, decision-making participants commented on their preferences, gave suggestions, and pointed out what was good or bad in their opinion. The concept test resulted in notes (see Figure 23) for improvement, addition of functions, and modification of services.

Figure 23: Concept test
6.5 Actor’s Services and Benefits

The Actor offers a variety of services to support the interior designer and their client. That includes:

- **Marketplaces**: The main activity of the Actor is to program and manage the marketplaces, including pre-owned, new and services marketplaces. Both furniture marketplaces selections compose one list of furniture.

- **Sample report**: The sample report is programmed by the Actor to automatically assemble a preview of sustainability numbers of the list of furniture, including occasional additions of inventory.

- **One payment/check out**: The Actor is paid by the client through a single check out, distributing the payment among the used suppliers.

- **Final report and certificate**: Besides being programmed by the actor, the final report is also confirmed for more accuracy, to be added to the certificate. The certificate is a proof that the Actor gives the client, for advertising their sustainable furnishing choices.

- **Additional services**: To simplify the interior designer and supplier’s logistics, the Actor offers transportation and temporary storage of furniture. Another additional service is the assembling and placing of furniture according to the interior designer’s layout and instructions.

Table 2 shows an overview of the services available in the platform, a brief description of them, and which subscriptions (free, plus or premium) have access to them.

Table 2: The Actor’s Services

<table>
<thead>
<tr>
<th>Service/Tool</th>
<th>Description</th>
<th>Free</th>
<th>Plus</th>
<th>Prem</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 product marketplaces</td>
<td>Gathering of all available office furniture in two different marketplaces (pre-owned and new furniture).</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Service marketplace</td>
<td>Page to connect local skilled professionals with companies that need refurbishing services</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>General information</td>
<td>Brand, supplier, category, color, style, place of manufacture, and price.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
| Feature                                           | Description                                                                                                                                                                                                 | Available?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific information</td>
<td>Information about pre-owned furniture may include whether the piece has any damages.</td>
<td>No</td>
</tr>
<tr>
<td>Environmentally relevant information</td>
<td>CO2 emission estimate, materials, labels (if applicable), and location. It allows sustainability comparison between pieces of furniture.</td>
<td>No</td>
</tr>
<tr>
<td>Price comparison</td>
<td>For pre-owned marketplace. It allows the user to know how much a new one costs.</td>
<td>No</td>
</tr>
<tr>
<td>User dashboard</td>
<td>In their dashboard, the user finds several functions, such as the team hub, mailbox, projects, customer service, besides displaying information, such as their sustainability score.</td>
<td>No</td>
</tr>
<tr>
<td>Client’s dashboard</td>
<td>In the client’s page, they will find their mailbox, customer service, listing, etc.</td>
<td>No</td>
</tr>
<tr>
<td>Multi-source furniture list</td>
<td>List with all the furniture selected from pre-owned and new furniture marketplaces are added to a list, where the user can add their client’s inventory furniture, or furniture purchased outside of the platform.</td>
<td>No</td>
</tr>
<tr>
<td>Furniture sustainability report</td>
<td>An estimate of the CO2 emissions is calculated, considering how much is spared and produced, and the percentage of the furniture that is used (pre-owned + inventory) is shown.</td>
<td>No</td>
</tr>
<tr>
<td>Single check out and invoice</td>
<td>The user’s client can pay to all suppliers at once, through the platform.</td>
<td>No</td>
</tr>
<tr>
<td>Client certificate</td>
<td>The client gets a certificate based on the final furniture sustainability report, which they can showcase.</td>
<td>No</td>
</tr>
<tr>
<td>User sustainability score</td>
<td>The user accumulates points that indicate their performance in promoting sustainability in their projects.</td>
<td>No</td>
</tr>
<tr>
<td>Team hub</td>
<td>A page within the user’s platform where anything from pictures, documents and checklists can be shared with the team.</td>
<td>No</td>
</tr>
<tr>
<td>Digital assistant tool</td>
<td>It offers additional personalized settings, as the possibility to search for furniture automatically according to the project and the CO2-saving suggestion button that indicates the most sustainable furniture. It also includes notification of availability.</td>
<td>No</td>
</tr>
<tr>
<td>Assigned personnel</td>
<td>It would be available to the user during work hours for customer service.</td>
<td>No</td>
</tr>
<tr>
<td>Selling Used Furniture</td>
<td>Any company (including the client) can find a button in the website’s foot, where they can find nearby suppliers that are willing to purchase their used furniture.</td>
<td>-</td>
</tr>
<tr>
<td>Collaborator dashboard</td>
<td>The collaborator’s page consists of engines for adding their furniture or offering their services.</td>
<td>-</td>
</tr>
<tr>
<td>*Additional service (transportation)</td>
<td>All the transportation between “supplier-storage” and “storage-client” is done by the platform, in collaboration with a transportation company.</td>
<td>-</td>
</tr>
<tr>
<td>*Additional service (storage)</td>
<td>The storage of the furniture can be done during the time between purchase and assembly. The Actor has a collaboration with a storage unit company.</td>
<td>-</td>
</tr>
<tr>
<td>*Additional service (Assembling)</td>
<td>Assembling furniture services, which includes following all instructions and layout given by the interior designer.</td>
<td>-</td>
</tr>
</tbody>
</table>
The services provided by the new Actor are based on the needs identified in the research. Empirical findings indicate the need for a hybrid actor that takes the role of a procurement assistant and project facilitator to the interior designer. Table 3 lists the main services and tools and their benefits.

Table 3: Service benefits

<table>
<thead>
<tr>
<th>Service/Tool</th>
<th>Description</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 product marketplaces</td>
<td>Gathering of all available office furniture in two different marketplaces (pre-owned and new furniture).</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of procurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of comparison</td>
</tr>
<tr>
<td>Service marketplace</td>
<td>Page to connect local skilled professionals with companies that need refurbishing services</td>
<td>Ease of procurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inclusion</td>
</tr>
<tr>
<td>General information</td>
<td>Brand, supplier, category, color, style, place of manufacture, and price.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific information</td>
<td>Information about pre-owned furniture may include whether the piece has any damages.</td>
<td>Ease of comparison</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transparency</td>
</tr>
<tr>
<td>Environmentally relevant information</td>
<td>CO2 emission estimate, materials, labels (if applicable), and location. It allows sustainability comparison between pieces of furniture.</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of procurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>Price comparison</td>
<td>For pre-owned marketplace. It allows the user to know how much a new one costs</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of procurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of comparison</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>User dashboard</td>
<td>In their dashboard, the user finds several functions, such as the team hub, mailbox, projects, customer service, besides displaying information, such as their sustainability score.</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of communication</td>
</tr>
<tr>
<td>Client’s dashboard</td>
<td>In the client’s page, they will find their mailbox, customer service, listing, etc.</td>
<td>Ease of communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>Multi-source furniture list</td>
<td>List with all the furniture selected from pre-owned and new furniture marketplaces are added to a list, where the user can add their client’s inventory furniture, or furniture purchased outside of the platform.</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>Furniture sustainability report</td>
<td>An estimate of the CO2 emissions is calculated, considering how much is spared and produced, and the percentage of the furniture that is used (pre-owned + inventory) is shown.</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>Single check out and invoice</td>
<td>The user’s client can pay to all suppliers at once, through the platform.</td>
<td>Time efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convenience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incentive for client</td>
</tr>
<tr>
<td>Client certificate</td>
<td>The client gets a certificate based on the final furniture sustainability report, which they can showcase.</td>
<td>Incentive for client</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Client’s business advertising</td>
</tr>
<tr>
<td>User sustainability score</td>
<td>The user accumulates points that indicate their performance in promoting sustainability in their projects.</td>
<td>Interior designer advertising</td>
</tr>
</tbody>
</table>
| Team hub | A page within the user’s platform where anything from pictures, documents and checklists can be shared with the team. | Time efficiency  
Ease of management  
Ease of communication |
| --- | --- | --- |
| Digital assistant tool | It offers additional personalized settings, as the possibility to search for furniture automatically according to the project and the CO2-saving suggestion button that indicates the most sustainable furniture. It also includes notification of availability. | Time efficiency  
Ease of procurement  
Ease of comparison |
| Assigned personnel | It would be available to the user during work hours for customer service. | Time efficiency  
Ease of management |
| Selling Used Furniture | Any company (including the client) can find a button in the website’s foot, where they can find nearby suppliers that are willing to purchase their used furniture. | Input of furniture |
| Collaborator dashboard | The collaborator’s page consists of engines for adding their furniture or offering their services. |  |
| *Additional service (transportation) | All the transportation between "supplier-storage" and "storage-client" is done by the platform, in collaboration with a transportation company. | Time efficiency  
Ease of management  
Convenience |
| *Additional service (storage) | The storage of the furniture can be done during the time between purchase and assembly. The platform has a collaboration with a storage unit company. | Time efficiency  
Ease of management  
Convenience |
| *Additional service (Assembling) | Assembling furniture services, which includes following all instructions and layout given by the interior designer. | Convenience |

Table 4: Benefits definitions

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time efficiency</td>
<td>It takes less time to perform the activity with this function.</td>
</tr>
<tr>
<td>Ease of procurement</td>
<td>It is easier to find items, services, and information with this function.</td>
</tr>
<tr>
<td>Ease of management</td>
<td>It is easier to manage the project with this function.</td>
</tr>
<tr>
<td>Incentive for client</td>
<td>It leads the client to open for accepting used furniture in their projects.</td>
</tr>
<tr>
<td>Client’s business advertising</td>
<td>It gives the client information with the potential to be advertised.</td>
</tr>
<tr>
<td>Input of furniture</td>
<td>It brings more options to the market, allowing more furniture to circulate.</td>
</tr>
<tr>
<td>Inclusion</td>
<td>It includes actors in the industry that would otherwise be out of the spotlight</td>
</tr>
<tr>
<td>Ease of comparison</td>
<td>It is easier to compare items, services, and information with this function.</td>
</tr>
<tr>
<td>Ease of communication</td>
<td>It is easier to communicate with other actors with this function.</td>
</tr>
<tr>
<td>Transparency</td>
<td>It shows ethical considerations.</td>
</tr>
<tr>
<td>Interior designer advertising</td>
<td>It gives the interior designer information with the potential to be advertised.</td>
</tr>
</tbody>
</table>
7. Contextual Analysis

7.2 Certifying the Business Models in the Office Furniture Industry

Research reveals a gap within the office furniture industry that calls for the identification of a new actor capable of providing the required services, which can achieve resource management, long-term financial sustainability, and the creation of employment opportunities for the industry stakeholders. In the meantime, the Swedish market has shown its awareness of sustainable products’ benefits. That said, Sweden provides a favorable environment for promoting sustainable furniture and the procuring of pre-owned items (Swedish Institute, 2021). That gives the Actor a competitive advantage in the Swedish market.

However, the implementation of this new Actor requires collaboration and investment from multiple stakeholders, including suppliers, interior designers, clients, and logistics service providers, among others. Given the complex nature of supplier chains, widespread adoption and acceptance of the new service provider need navigation through these intricate networks. In addition, transparency is another factor in ensuring the credibility of the Actor and its initiatives, establishing clear criteria and monitoring mechanisms to certify. This requires the involvement of independent third-party organizations to collaborate and regulators to provide reliable certification and verification.

7.1 Ecological Implications of Office Furniture Consumption

According to research published by the Furniture Industry Research Association, the production of a standard office chair results in an average carbon footprint of 72kg CO2, while a standard desk produces 45kg (FIRA, 2021). In Sweden, the annual carbon dioxide emission attributed to office furniture amount to approximately 150,000 tons (Research Institute of Sweden, 2019). The European Environment
Bureau highlights that businesses and consumers in EU member states discard 10 million tons of furniture annually, most of which ends up in landfills or incinerators (European Environment Bureau, 2017).

Thus, reuse, recycling, and refurbishment can extend the lifespan of furniture and delay its disposal. By diverting furniture from landfills or incinerators, the environmental impact associated with disposal is effectively minimized. Additionally, promoting the use of pre-owned furniture helps reduce the carbon footprint associated with furniture production, shipping, and packaging. This reduction in carbon emissions contributes to the global efforts to mitigate climate change and its harmful effects.

7.3 Socio-Political Context of Sustainable Office Furniture

The Swedish socio-political context highlights the government’s commitment to the promotion of sustainability, although specific regulations for furniture reuse are still in their early stages. The Swedish Environmental Protectigency, known as “Avfallshantering”, serves as a significant policy framework that outlines the country’s waste management policies and set targets for waste reduction, recycling, and the promotion of reuse (Naturvardsverket, 2021). The government’s focus on the circular economy and the efficient utilization of resources aligns with the principles of sustainable furniture practices, encouraging the adoption of environmentally responsible approaches within the industry (Naturvardsverket, 2017).

7.4 Socio-Economical Context

Besides the Actor’s primary activity, to provide marketplaces to facilitate furniture selection from multiple sources, a marketplace for upcycling services is available to offer customers the option for reupholstering, repainting, or renovating used furniture. The service marketplace gives small local businesses the opportunity to grow economically, by advertising their work in the platform.
Programs that benefit society are collaborations that should be encouraged. Although it is not yet part of the Actor’s business model, partnerships with social and non-profit organizations with a focus on work integration of different demographics such as Atrium and Samhall. Such collaboration would help the Actor find qualified people to refurbish pieces of furniture, and the participants of the program to get jobs in their fields. The partnership could later open a trainee program for the revival of the skills that have been rare in the market in the last decades, such as upholstery.
8. Conclusion

8.1 The Actor’s Contribution

The Actor is an example of how businesses can take the role as change agents in a variety of industries. Although this project’s primary objective is to simplify the interior design’s procurement process when using multiple sources of furniture, the Actor contribution is not limited to the interior designer. The proposal in this paper also benefits other stakeholders, such as the supplier and the client, besides contributing to the industry as a whole, and to its journey towards sustainability.

Contribution Factors to the Interior Designer

- Time efficiency and ease of procurement: The Actor addresses challenges related to the time-consuming procurement process, by assembling all available furniture in one place and mediating its procurement;
- Ease of management: The Actor addresses logistics complications involving transportation, planning and temporary storage of furniture during the project, by offering the services as a facilitator.
- Incentive for client and client’s business advertising: The Actor’s services make it easy for the interior designer to convince their clients to choose sustainable options, by giving them tools (report and certificate) to overview sustainability numbers;
- Input of used furniture: With the Actor offering mediation between seller and buyer, it allows more furniture to circulate, addressing the unreliable availability of furniture faced by the interior designer.
Contribution Factors to the Clients

- Affordable sustainable alternatives: The Actor’s services to the interior designer may contribute to the affordability of sustainable furniture, which addresses the client’s main obstacle;
- Incentive for client and client’s business advertising: The Actor gives the means for the client to advertise and take pride in their sustainable actions, through the sustainability report and sustainable furnishing certificate.

Contribution Factors to the Suppliers

- Input of used furniture: Pre-owned furniture suppliers may be connected to businesses wanting to sell their furniture;
- Social-economic benefits: the inclusion of small suppliers give them the opportunity to grow in the market.

Contribution Factors to Sustainability

- Environmental benefits: For promoting the reuse of furniture, the Actor lowers the production of new furniture, reducing the CO2 emissions and energy consumption that the industry is responsible for. In addition, the reuse of furniture avoids the extraction of raw materials, conserving nature resources and decreasing the waste thereof;
- Socio-economical benefits: The business promotes small and local businesses, creating job opportunities and social alliances that could influence people’s lives, with projects such as labor market inclusion and trainee programs;
- Cultural benefits: The Actor has the potential to change the consumption culture in the Swedish corporate sector.
8.2 Directions for Further Development and Research

This thesis paper also aims to contribute to academic research regarding the reuse of office furniture in interior design, which is not a widely researched topic. It provides empirical data that can be used to broaden the knowledge not only in the design field but also in the fields that are involved in the subject of sustainability implementation in interior design. The authors have assembled suggestions for further development and research:

- Business aspects of the proposal (further development): Majored in design, the authors’ business knowledge is limited to what can be learned during the time of the project, therefore, there is a need for the development of the business aspects of the new Actor.

- Hållbar Interiör (further development): Presented in Appendix IV and soon to be the first interior certification in Sweden, Hållbar Interiör would be a good collaboration with the Actor. The authors believe the certification could be connected to the Actor’s sustainable furniture selection certificate.

- Social programs (further development): As mentioned in chapter 7.4, the collaboration between the Actor and social organizations for the work inclusion of people with disabilities, or people who have been far from the labor market for a long time, would be beneficial to society. A trainee program could be created in partnership with companies such as Atrium and Samhall, for acquiring furniture refurbishment skills at different levels.

- Furniture Passport (further development): The concept suggests that a piece of furniture is given an identity, in the form of a symbol, QR code, or a “passport” with all its information. Although the concept is still under development, one direction for improvement is to implement the use of furniture passports for any furniture that passes through the Actor’s business.

- Standardized CO2 Emissions Calculator (further development and research): The standardization of CO2 emission calculation is one of the obstacles brought by interior designers and suppliers in the interviews. Because there is no Sweden or EU-wide standard calculator, the comparison will never be accurate. A standard method for the calculation of CO2 emissions would benefit not only the Actor and the planet but also the entire industry.
● Refurbishing service stations (further research): Another gap in the industry that has been identified together with the need for the new Actor is the need for refurbishers of various skills, in special in upholstery. These craftsmen's skills have been slowly taken over by mass production, however, the increasing reuse of used furniture indicates a need for these skills in the near future. It is common that the refurbishing of a piece of furniture will require multiple skills, which indicates shows an advantage of having several craftsmen's services in one facility. That would provide convenience for the customer, lower CO2 emissions due to transportation, and potentially lower costs in comparison to the time-consuming alternative of taking furniture pieces from one facility to the other.

● Consumer behavior and attitudes studies (further research): The client’s incomprehension of sustainable choices implications is one of the major challenges mentioned by interior designers, and is only partially addressed in this paper. The authors suggest that consumer behavior studies could help interior designers understand the underlying reasons for that while creating strategies for inducing clients to make environmentally responsible choices.

8.3 Reflection

Luciana

Interdisciplinary teams are a reality outside academia and an essential element of innovation. Being around people from multiple majors and backgrounds, including professionals and experts, has given me insight into how the world is seen through the lenses of business and engineering. During the past two years, I have been especially exposed to projects which required knowledge of the circular business models and B2B. That has given me the tools, resources and connections to implement business aspects in my projects, including the master’s thesis.

Shiyi and I have worked in projects together for nearly a year prior to the start of this project. That gave us an insight into how we work as a design duo with other business students, and in a team with other designers. The experience we have gotten throughout this program allowed us to ground our thesis in the real-world context.
This project has shown me how a designer can be a change agent that positively intervenes in an entire industry. The process taught me about the service design field, including the business behind a service, UX and UI design. It also gave me a good insight on the current context of the office furniture industry as a whole, its challenges and how they could be overcome.

Shiyi

As a Master’s candidate in the Innovation program, I have gained a comprehensive approach to thinking through my academic semester of study. In addition to emphasizing innovation and aesthetics from a designer’s perspective, I also explored business target strategies and market positioning of services from a business standpoint. This interdisciplinary approach has not only enhanced my creative thinking and innovation abilities but also ensured the fulfillment of user needs and the generation of commercial value within a sustainable framework.

My thesis partner, Luciana, and I, who come from different design backgrounds, have collaboratively contributed to this project by leveraging our respective expertise and experiences. Through knowledge sharing and joint problem-solving endeavors, we have made contributions to this project.

However, certain challenges still exist. As I do not specialize in business, there are gaps in my knowledge and understanding in that area. Additionally, the inclusion of business-related considerations has somewhat limited my creative space as a designer. The practical of this project necessitates the incorporation of pragmatic factors, which further intensifies complexity. Therefore, striking a balance between practical concerns and the pursuit of the project’s objective becomes a barrier.
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**Interviews**


Input Interiör AB (2023). *Stakeholder Interview: Circularity in the Office Interior Design Sector (Supplier)*. 27 Mar. On-site [Växjö].


Soeco Kontorsmöbler AB (2023). *Stakeholder Interview: Circularity in the Office Interior Design Sector (Supplier).* 10 Mar. [Online].

**Figures**


**Websites and Software**


Appendix I: Collaborators’ Case Studies

Plym Projekt: Case Study

Background: Plym Projekt is an interior and architectural design company registered in 2015, located in Växjö. With 5 employees, the working style adopted by the company is flexible.

Brand positioning: Plym offers interior and architectural design for companies with commercial chains in the private sector. Their clients are described as forward-thinking and often have a large number of offices or stores.

Services: Their core business is interior design concept development, although they are also licensed to change the architectural layout inside the building. As an additional service, they can provide a graphic design package according to the concept.

Projects: According to Plym’s website, the company has conducted around 61 projects in various countries (Sweden, Denmark, Germany, France, China, the USA, Thailand, India, Australia, Indonesia, Malaysia, Vietnam, Taiwan, and South Korea).

Client needs: Plym puts the client’s needs as a priority. Their needs will change from company to company.

Sustainability implementation: The CEO and designer, Louise Plym has always had the environment in mind, and the willingness to do its part as a company. However, only recently has the industry shown signs of readiness for more commitment to environmental sustainability. Therefore, Plym made the decision to update the business to cater to the market’s needs for more environmentally sustainable interiors, which are forecasted to grow in the upcoming years. One way of implementing more sustainability in the service is to include pre-owned furniture as a furnishing option. That has been done on a small scale by the company. However, the process of using pre-owned furniture in interior design is much different from the traditional way (purchasing only new furniture) and brings challenges that should be addressed.

Role in the Thesis: Plym is the main case for the thesis project, and who came up with the topic and request. The company is also a stakeholder.

Sources: Face-to-face communication, online communication, company analysis (website), and interview
Easy Steps: Case Study

Background: EasySteps was founded in 2022 by Stephanie Bedin. It is a one-person company that provides consultancy in subjects related to sustainability and a circular economy. Its services include providing knowledge related to the circular economy, step-by-step guides to help clients, and templates to help clients organize work processes. As a young company, EasySteps is still under construction and right now dedicated to the development of a sustainability policy application.

Role in the Thesis: Easy Steps is serving as an external consultancy, providing valuable knowledge on current technologies, literature related to relevant topics, and theories for circularity and sustainability. They are not a stakeholder or case studies for the research but rather supportive partners providing valuable expertise and guidance.

Sources: Face-to-face communication, online communication, company analysis (website), and interview
Appendix II: Interviews

The interviews consisted of approximately ten questions, with the flexibility to modify the questions, which are elaborated according to each participant, within a time limit of 45 minutes. The interviewers started with an introduction of themselves, as well as their field of study, project brief, as well as the participants’ specific contributions to the research. All the participants have given consent for the recording using Otter, an AI-powered website that automatically generates transcripts. The interviewers would end by thanking the participants, with a promise to share their thesis paper with them. In order to keep personal data safe and fix misunderstandings done by the AI, editing was necessary. Therefore, all edited transcripts have been revised by the participants prior to the publication of this paper.

*Interviewer 1 and 2 do not necessarily refer to each author.*

Transcripts:

Interview 1: Indicum

Interviewee: participant 1
Stakeholder: interior designer
Date: March 9th at 16:00
Meeting: online (Zoom)

Interviewer 1

We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 1 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
How many employees do you have in the company?

Participant 1
Eight, including the CEO.

Interviewer 1
What are the recent trends in the interior design office, both in general and sustainably speaking?

Participant 1
So, one thing that’s not a new trend at all, but has been going on for about 10 years in Sweden, and also in other countries, is that you don’t have your specific place in the office anymore. You'll go to more activity-based. You'll probably hear this from a lot of architects, but it's really common to go from having your own office space to work in a more open office environment. And also having a flexible office or activity based office where you can choose. And then as I said, it's not new, but I think what's kind of new is getting back from the pandemic, people are now more used to working at home, or at a café, or other places other than the office. People also started to use video meetings, even more than before. So I think it has progressed the activity-based office into a binder. Now you can actually choose your workplace in the whole country or city. So that's a general trend that affects the smaller trends in the office is since you can choose where you want to work in many workplaces today. I think it's really common that the companies struggle to get the employees back to the office, because it's really comfortable to work from home or somewhere else other than the office to work. That makes the employer more aware that the office environment needs to look good, it needs to be really well functioning. So the companies get more aware that they need to have like an attractive workplace. But on the other hand, they also know that they can reduce the space. So the offices will be smaller, but they will be cozier and homey, more attractive in general. And that can mean things like having a ping pong table. We see a lot of offices that asks for a lot of plants, because they want
to be more cozy and homey. If you talk about circularity and environmental issues, I think that more and more of them are buying second-hand office furniture. They are more aware that it's possible to buy second-hand instead of newly produced. So I think the reuse of office furniture is maybe not a trend, but it's so many more people that are aware of it. If we go back three years, almost no one asked us, is it possible to reuse furniture? We could ask our clients do you want to reuse the furniture but they didn't ask us but now people come to us and ask "Can you help us reuse furniture?". So I think it's it has been a big change, over the last year actually.

Interviewer 1
The main aspects of our thesis is about reuse of furniture and the selection of furniture. So you said that they now are taking initiative to ask for it...

Participant 1
At least some so of course not everybody and not the majority. But more companies do that than before, I would say. And when we suggested to them, I would say that more companies are open to it and want to do.

Interviewer 1
That's really good. So you are already including second-hand furniture in your projects?

Participant 1
Yes.

Interviewer 1
And do you encounter any problems when you when trying to find second-hand furniture? How do you manage to do it?

Participant 1
Yes, of course. Unfortunately we do, but it also depends on how do you define a problem. Let's say it's a different process, working with second-hand furniture. The first thing that we do is to look at all the furniture they already have. For example, can we reuse it just as it is? Or we can reuse it with new fabric, or a new coating, or use the legs of the table with tabletop, for example. That kind of reuse is quite simple to do, because the client already have the things and if they can save the things that they have they see that they
can save money. Then the process is simple because it doesn't include so much. I mean, the only thing that the problem is in bigger projects, if you have for example 500 chairs in meeting rooms and we want to reupholster. We need to do it in steps because if we take away all the chairs at once, they will have no chairs for meetings. So maybe half of the chairs will be taken to be reupholstered and after when the first half is ready the second half is taken. So it's a lot of logistics involved. It is another way of working. As an interior architect, you are used to making the proposal for your client and the client says "yes, we want that", then you just buy it. But if you work with second-hand furniture it's not the same process, because we can't make the proposal and then start looking for the furniture. We need to see what's available and make interior concept out of what is available. So we need to change our process and we need to work in another way. And that's not a problem. It's just that you need to be aware and you need to do it and of course you want to use what the client already has. And then you want to buy reuse furniture if they don't have what's needed for them. And if we can't find things that are suitable that are used, then we need to buy new furniture. So in most projects that we work, we have all of these different categories and we also have some things that should be upholstered, or repainted, or refurbished in some way. Then it starts to be this big puzzle. So I think if you want to succeed in reusing furniture, you need to know that it's a lot of logistics and a lot of planning. And you need to have a project leader that controls all of these things because you have furniture from so many different places that should be they should come into the space at the same time and everything should stand at the right place and so on. So it's more about having control and be good at organizing, planning, I would say. But of course, sometimes the problem could be that you really want to have a red sofa because the red sofa would make everything look so much nicer and the interior concept would be stronger and you can't find it because what you have in your mind and what you have in your vision is not possible to buy second-hand because it's not available. And that could be a problem but at the same time if you work with a project and you can have like 80% or 90% reused furniture and you can buy one red sofa that is newly produced. I think that's a great project anyway. But I think it's a matter of planning and time because the time schedule working with reduced furniture is quite different for the architect, than if you would buy everything new.

Interviewer 1
I imagine. Does the budget also change? Is it sometimes more expensive to use second-hand furniture for being time-consuming?

Participant 1
Usually the client needs to pay the architect more money because it's more time-consuming. The architect works more hours, but usually they save money by reusing what they have or buying second-hand furniture instead of newly-produced furniture. So, I wouldn't say it's more expensive as a total cost. As an architect, I need to convince them that you should pay me more and less for the furniture. And of course not everybody wants to do that.

Interviewer 1
And do you see any resistance towards certain second-hand furniture kinds, for example, chairs?

Participant 1
Yes, I would say that there could be two reasons why they don't want to have it secondhand. I mean, one is aesthetics and one about it being worn out. So I think it could be like two different reasons. I think for example, office desks, people in general are really positive to reusing them because they don't get worn out. They look almost the same after ten years or five years as they did when they were new. And they are also the kind of furniture that doesn't have that much aesthetics in itself from the beginning. So it's more like a standard product. So if we have like cabinets, tables and things that are more standardized, it's easier to make people want to reuse them. If you have upholstered furniture, for example, sofas or lounge chairs or something like that, they could have more expression in them. And then the expression needs to be exactly right for the client for the project and the interior concept. So I think that could make it harder. Also, some clients are a bit afraid that it would be worn down or they think that "it may not last much longer, if it already has five years, it could break after two years, but if I buy a new one I know that I can have this sofa for 10 years".

Interviewer 1
Who are your suppliers?

Participant 1
For second-hand are Rekomo and RP. They are the two companies that we work most with, but there are others as well. But the reason why we work mostly with them is because they are the largest companies for second-hand furniture. And usually in bigger projects, there are so many things that need. Last year I worked with a project that had over 9000 furniture pieces and interior products in the same building. It was a quite large building, so if you need a big amount, then you need to go to suppliers that have a lot of furniture. Therefore it's harder to work with smaller suppliers that don't have these warehouses with stock.
Interviewer 1
What about newly produced furniture?

Participant 1
Oh, there are so many but we work a lot with the Swedish manufacturers. So for example Lammhults and Abstracta. But there are so many, so many different brands that we work with. But at Indicum we have a lot of clients and a lot of projects we do are for municipality and government, their offices and so on. And then we need to follow up the framework agreement. So you can say that we work with the manufacturers that are available in the framework agreements. And it's a lot of Swedish manufacturers.

Interviewer 1
So, do you have any other suggestions to promote sustainability in this industry?

Participant 1
Yeah, actually. One thing that we work a lot with at Indicum is a project called Hållbar Interiör. Have you heard of it? If you translate it, it's sustainable interior, but in Swedish. It is a project that we started in 2018. We got the foundings from Vinnova, which is the Swedish Governmental Agency for Innovation Systemsation. And the goal of the project is to have to develop sustainability, certification for interiors, like you have for example, BREEAM and LEED for buildings. We want to have the same kind of certification but for interiors. So that is something that we work with, with around 30 other companies, that are involved in the project. And of course, I mean, we always try to make our own interior project as sustainable as possible. And sorry, I don't remember the question. Did I answer your question?

Interviewer 1
It was, if you had any suggestions to promote sustainability, but Hållbar Interiör was a good answer.

Participant 1
Yeah, and the reason why we wanted to have this kind of certification is because we think it's good. If you work in office space and you want to redecorate and you want to have a new interior, if you know it's possible to have a certification connected to environmental topics, I think that could be a push in the right direction for the clients to make more sustainable choices if they can say like, oh, okay, if we do this, this
is better than if we do that. And also, we wanted to encourage them to reuse furniture. That's also one of the like, large things that is important in certification that you should have a higher score. If you reuse furniture. That's something that we wanted to highlight.

Interviewer 1
Yeah. Do you do any projects outside of Sweden?

Participant 1
We don't actually have clients outside of Sweden but we have worked with a Swedish company that does eye surgery, and they have clinics in Norway and Denmark. So we have done their clinics in some Norwegian cities, and I think Denmark as well. But mainly, we only work in Sweden.

Interviewer 1
Talking about the health sector. Are they willing to have second-hand furniture also or is it a different story with them?

Participant 1
No, it's really hard to work sustainable with hospitals and health clinics, because everything needs to be sterilized with alcohol. And it's hard to find it when you need to have certain products that are suitable for that. So I think that even if it is possible to reuse their furniture with I think that in general they are more skeptical about reuse of furniture in the health sector. So we actually haven't done it when we have worked with hospitals. It's not a big sector for us, we mainly work with offices and education like schools and universities, so not so much hospitals. But I know it's hard because they have very high demands and everything needs to be really high quality.

Interviewer 1
That makes sense. So, in your opinion, which sector is the one that is the most accepting of second-hand furniture?

Participant 1
I think office spaces. Hotels and restaurants care a lot about how it looks because they want to attract customers. So I think aesthetics is super important, they are not willing to compromise with aesthetics. It is
more important for them to have a nice surface then that it is really sustainable. And we already talked about the health sector. So I think office spaces are one step ahead of the other sectors.

Interviewer 1
It also adds up to their whole company, the sustainability side of their company. They can also advertise that.

Participant 1
And also a lot of companies are aware that the new EU directives. The EU is going to have like new laws in a couple of years that says that all companies need to declare a lot of things and they need to be aware of what they buy and what they own. And that also includes the interior. So I think a lot of companies are aware of this and have already started with the process.

Interviewer 1
That was really good.

Interviewer 2
Yes. We didn't expect that more and more clients are willing to use second-hand furniture.

Participant 1
Yeah, but it is still more common that we suggest it to them than they suggest it to us. But every step in the right direction I think. I don't know if you know anything about these framework agreements on furniture that the Swedish government and the municipalities have, but before they were only for newly produced furniture, but for like, one, almost one and a half years now, there has been a framework for buying reuse furniture and also for reupholstering and those kinds of services connected to reusing furniture. So I think that has really increased in public offices and universities. Before the framework agreement, it was really hard to do it if you were a public organization, a municipality, a university, or something like that. It was not impossible, but it was kind of hard because you were supposed to use the framework agreement if you wanted to buy furniture, and then you needed to explain or do a more complicated procurement if you wanted to buy second-hand furniture. But now they can use the new framework agreements, and I think that's really good.
Yeah. What is the name of this agreement?

Participant 1
Yeah, yeah. The governmental one is called Kammarkollegiet. The web page is Avropa.se. And the one for the regions, which is for the hospitals and the municipalities, is called Adda.se. And there you have agreements for like if they want to buy toilet paper as well, or plasters and so on. Everything they buy they go through those agreements. There are some agreements that are specific for furniture and also second-hand furniture.

Interviewer 1
That's really good to know all that. So you are based in Stockholm, right?

Participant 1
Yes, right. Yeah, I'm based in Stockholm, but the company that I work for has an office in Uppsala and one in Stockholm. So we are four people in Uppsala.

Interviewer 1
And are most projects that you do around Stockholm or everywhere in Sweden?

Participant 1
Yeah, but most of our projects are definitely in Stockholm or Uppsala, but we have we have done the fire station in Lulå. And we also have a project in Malmö right now. So we have, we have done some projects in Göteborg as well.

Interviewer 1
So, we would like to thank you for your time. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers
Bye, have a nice day!
Interview 2: Murman

Interviewee: participant 2
Stakeholder: interior designer
Date: March 10th at 12:00
Meeting: online (Microsoft Teams)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 2 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
How many employees do you have at Murman?

Participant 2
We are both interior designers and architects, building engineers, so when it comes to interior design, we are 13 and as a whole, we are 35.

Interviewer 1
What are the recent trends in the office interiors that you see and like the most common style that your clients look for?
Participant 2
It's the ongoing trend is this with aktivitetsbaserade kontor (Swedish). Activity Based working place in English. So that's the general fact that the clients they need to reduce the space so it's a combination of to adapt to the new situation after the pandemic, and also to adapt to the new price levels, for rents etc, and their electricity bills that has increased so on. So it's a combination of that you go from a biggest space to a smaller and then you also in the same time, change the way you work. You go from this personal desk to this cooperating activity-based working place which you will have had you have seen this for the 10 years now, but this is still something that is number one. Do you know about the activity-based working place?

Interviewer 1
Yeah, we have been this concept but we hear a lot about this trend of having smaller spaces because people are working from home more and more. And flexible working space.

Participant 2
So this is something that still is going on. And then we have seen since maybe three years, that the issue of sustainability has been really increasing. So now there are more and more clients that wants to buy secondhand furnitures. It's quite new that the customers are educated before we had to educate the clients. And now they know that we have to work connected to again that 2030 Which many like governmental organizations has signed up for, they need to deliver the fact that they actually are changing and do something when it comes to sustainability. So secondhand furnitures is one of the biggest things what they want.

Interviewer 1
What are the most common requests that you hear in terms of sustainability?

Participant 2
It's more like that they have decided, you know, there's also always a CEO when you have this corporate union that ever they need to make a decision. So usually the client have made the decision that we have to we want to buy reused furniture but they don't know what it means when it comes to the process, as you speak about the the model you are working with. We have to explain for the current clients how does this this process looks like because it's quite a big difference from if you just buy new furniture and then you deliver it. So the problem is more like, how does this work? They have quite like lower expectations, like
how is this model or this process going on and how does it work? If you are, like a government, how you say mean the governmental organization, you have rules for how to buy furniture and which furniture you can buy. And then because this work project I'm working with now it's a big municipality. It's the stop before Uppsala. So when it is coming in the municipality house. We are buying secondhand furniture for the whole house, which has around 250 people working there. You need to consider into the legal aspects of how and which furniture you could buy. So we have to help the client how to buy the second furniture because they have never done that before. It's in total is another process. You need companies that do not only deliver the second-hand furniture, but that can offer other services, such as upcycling and renovating the furniture. And then when it comes to the transportation, you have to consider if it is done by electric cars. There are a lot of aspects that need to be thought about. So there's quite a big difference as usual. It's like the system behind it. That's what we have to educate our clients.

Interviewer 1
It is quite recent that governmental organizations can actually buy secondhand furniture, right?

Participant 2
Totally new. It was the before so we had to make our own framework. In that sense, the way it looks now, it's not going to work. Because then you have to have a company that does the upcycling, another company that does the renovation and another company from which you can buy furniture, which is a lot of work for us.

You have to be a project leader. But in our case we have Senab, Input interior, etc. They are those companies that deliver the furniture. Senab is is quite ahead when it comes to having this service. They also provide, through another company, information about the CO2 emissions for example.

Interviewer 1
Where do you find the second-hand furniture? Is the furniture from these three suppliers usually?

Participant 2
The suppliers are RP, Rekomo and we also get furniture from showrooms. We bought quite a lot of furniture from showrooms. You have to be super quick because now everybody works this way. So the furniture disappears quite quickly. But those three are the main suppliers. Senab they are kind of project leaders for us. For example, if we look for a sofa with a red textile, they will check and then if it is available, they will
buy it for us. As you already know, the problem is that the process of buying furniture is throughout the whole project. So the project with the big building, we did it in three phases, floor by floor. Now in this case, we still haven't found some of the furniture for one of the floors. They're gonna move into the office in a couple of weeks. So in the limited time, you look for the suitable furniture and you need to be patient. You want to buy the best thing and sometimes you wait too long. Before, you just make a list of things that need to be bought and they are bought. But now the purchasing is done throughout the whole process. I have been working on this project for a year.

Interviewer 1
How much time does it usually take if it's secondhand?

Participant 2
I cannot say it exactly. The thing is that the process is different. Maybe double. And then it's important what I have found out that you have to work in different phases like step one, step two step three parts of the building because I cannot find furniture for the whole house. So we had to take it floor by floor. It would be impossible in this country to find that much furniture you really need. And then we have to store the furniture in a space.

Interviewer 1
Can you manage to get 100% secondhand furniture or you need a backup.

Participant 2
If we have to have a backup. We can’t make sure in the beginning because I've never worked with such a big project before. We had to buy cabinets for 250 people and we couldn’t find second-hand, so we had to buy new ones.

Interviewer 1
Where did you buy the new furniture from?

Participant 2
We bought them from Senab, they helped us buy all the second-hand and new furniture. They deliver the furniture and put it up, they do everything. Without them, the process will be super messy.
Interviewer 1
Does second-hand furniture affect the budget?

Participant 2
It’s not cheaper. Our client in this project knew this already because they are very experienced, so they knew that they didn't have expectations, but there are studies. A Swedish organization has made a pilot project about their own office space. And they said it was 30% cheaper. But the thing is that the furniture cost is cheaper, but our work time costs more. So in that sense, it's more. So, some studies point out that it is cheaper. But in that case, I think they didn't have that much help for an interior designer. So you shouldn't expect that it's cheaper. But what we have experienced is that the client gets more expensive furniture. It's the furniture with the brand, then if we would have bought a new one, they would never be able to have that furniture because it's more than double the price. So our clients were very surprised that they got this nice furniture for the price they did.

Interviewer 2
As you mentioned the contract before, if it takes a lot of time and energy to search the second-hand furniture during the project, will you change the budget in the end?

Participant 2
No, the thing is, we had a budget from the beginning. But after that, it will be changed. So I guess it's different from project to project. Sometimes it happened. This is what it's gonna cost if you employ us. But in this case, which is usually when it comes to big companies or governmental organizations you have a budget but then it costs extra per hour if the project is not ready. So usually the project is not ready when it's supposed to be ready, and everybody knows that, so it costs money.

Interviewer 1
And you were talking about logistics and electrical cars. Do you also take that into consideration? Do they take everything that is related to the project into consideration to make it more sustainable?

Participant 2
Yes. But that's an interesting point because we had it in the agreement, and said it would be electric cars. And then our client found out that they didn't use that. So you need someone to make sure that everybody's doing what they say. Because some people try to cheat.

Interviewer 2
From your project, which furniture is more easily reused?

Participant 2
In this case, we could reuse the desks because most desks follow a standard so they can have a telescopic possibility. So if you want a longer table, you can make it longer and they can make it shorter and nowadays everybody goes from big desk to small desk. Because you don't have the space anymore. And we had the good luck that they had a lot of those desks that it was possible to with these telescopic legs. So we have reused around 200 desks, the feet, and the surface, then we cut the tabletop to make it smaller, and added a new frame. So in that sense, you prevent a new desk from being produced and save the planet. That was easiest to reuse, the furniture in the house. Especially if you have a lot of desks and chairs, so we can reuse those items. The table top is also very good that you can do it very easily in-house. But we had a lot of them so we sent them up to the factory and then down again to the office. But the less transportation the better.

Interviewer 2
Do you have something else that is hard to reuse except for curtains, that you mentioned before?

Participant 2
The carpets, all the carpets are new in our case. That's also impossible to find. And then it's hard to find second-hand lounge chairs in the same place if you want a couple of them in the same look. It's quite impossible to find more than two in the same textile when it comes to lounge seating. We also found it very hard. We thought we would have a group of lounge chairs here like five and a group is impossible to find.

Interviewer 1
So besides the things that you cannot really reuse. Do you have any textile products that Senab helps you find that are more sustainable?

Participant 2
We found the exact carpets from the exact brand, but they bought it and sewed it. Then we had to find the carpet with the best sustainability certification, which is cradle to cradle and I couldn't find it but I found Cradle to Cradle silver. So because you have to make a material concept, and the concept has to be suitable for secondhand furniture so it has to be more flexible. It cannot just be pink or blue. Work has to be given more opportunities. I had to find a carpet which is connected to the concept and I have to find a curtain connected to the concept which has the best certification. And when it comes to carpets, it's like a developed field in the business. They have done a lot of work when it comes to sustainability. But when it comes to textiles and curtains, they're really behind. So the textiles are like a black hole. It's really hard to find textiles which are good. I guess all the coaches' textiles are bad for the planet, but some are less bad.

Interviewer 1
So do you have sustainability tips or recommendations that you would like to share?

Participant 2
Yes, certainly. As you work with this model, it's good to know that when you talk about the circle, its when you have to buy the furniture very early, the whole process, which is totally different from how you work when you buy new stuff. That's really a key factor when it comes to this circle and sustainable interiors. And then it is good to know that you cannot know exactly how it's gonna to be. Because you have to buy what's out there, right? So your mindset has to be like, I'm surprised, sort of like blue. Why don't you put the blue in there like and then when we put the blue there we can move those green up to the other part of the house. So you have to refurbish now with them actually. Because you have no control of what's going to be out there. What is possible to buy and the customer needs to know that it's not going to be expected how the interior concept is presented. So this is totally awesome news for me and for the business. It is also more enjoyable. It is also stressful, of course. On the one hand, we get stressed because we cannot find what we are looking for, but on the other hand, sometimes we can find something that is really cheap. So yes, it is a different way of working.

Interviewer 1
And what are the biggest challenges that you think the company faces when trying to use second-hand furniture?

Participant 2
I think the hardest is when it comes to picking up the numbers for how much carbon dioxide we save for the planet. We don't have a tool yet. There is this OneClick connected to 3d models which is on the market and I know a lot of the firms use it. We don't have that knowledge yet. So we have to actually re-educate whole staffs. And this is what we are doing now. It's totally a challenge. Because now the landlords have legal demands when it comes to sustainability. And then they contact us to draw the house so they do the interior. And then they need us to say how much do we save CO2 for the planet? Like we have to be precise with the numbers when it comes to carbon dioxide. But we can not really do it yet. So we are now trying to figure out how we're going to do it. Because the demands on us are getting higher and higher when it comes to sustainability which is really good but we feel that we will learn a little bit by doing. That's quite tricky actually. And it's also super tricky because if you have to buy something new, a lot of the companies are greenwashing and they are really good at it so you get super confused. And in the end it's like I don't know what to choose because they say this is the best and they say that is the best. And it's especially when it comes to textiles. It's hard because it's like so much with chemicals and so much in the textiles that we can’t know. So the lack of knowledge is the biggest challenge we have to really educate ourselves now.

Interviewer 2
You mentioned that there were 3d models which is connected to you can choose the carbon dioxide. What's the name of that?

Participant 2
It was called One Click. But there are other programs as well. I know One Click is not the cheapest. And that's the future probably, that it's going to be. I can already see on Rekomo’s website that they put something like “if you buy this furniture, this is the cost, this how much CO2 saved”, but this we're gonna see on every product. And then you can choose easily. So we have to also communicate that to our clients, which we don't do today.

Interviewer 1
So, we would like to thank you for your time. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers
Bye, have a nice day!
Interview 3: Soeco

Interviewee: participant 3
Stakeholder: supplier
Date: March 10th at 16:00
Meeting: online (Zoom)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 3 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
How many employees does Soeco have?

Participant 3
We have 48 employees.

Interviewer 1
Who are your customers usually, and what do they do? Are they the final clients or architects/interior designers?
Participant 3
If you want to divide our customers into segments you could say 50% of what we sell is to municipalities, and certain governmental institutions, and the other 50% is to private companies like Ericsson, Sony, Skanska, and some banks, and also some small companies. It's everything from one employee to 100,000 employees that buy from us.

Interviewer 1
Do you see any difference between having contact directly with the customer or through the interior designer, in terms of their choice of furniture?

Participant 3
I think it's more and more now that serious companies have to look into the fact that they have to purchase recycled products as a part of what they buy. And some people just tried to buy 100% recycled products, but it varies.

Interviewer 1
What furniture is most common to reuse, among your clients?

Participant 3
The most common products are office chairs, height-adjustable tables, and conference chairs and tables.

Interviewer 1
So what is your opinion on the implementation of circularity and sustainability in the office furniture sector?

Participant 3
I think it's madness the way it has been done before. We've only had a contract with the government for eight months and before that, they were not allowed to sell (their furniture), they had to throw it away. So it's recent, and it's very important that things are not thrown away because they usually buy very high-quality furniture from good producers. It's worth taking care of it, both for the sake of taxpayers and for the environment.

Interviewer 1
What is the average warranty time that most office chairs have among your suppliers?
Participant 3
It's common that they have a five or seven-year warranty on a new office chair. And if we have changed the coil and reupholstered the chair, fixed it, we're not afraid of giving them more years.

Interviewer 1
Have you seen an increase of people asking for re-upholstering and upcycling of furniture from the last two years?

Participant 3
That is 50% of our business. We're different from the others. If you're calling other companies in this business, most of them buy stuff, clean it off, and sell it again. But we have 12 upholsterers in-house, three furniture carpenters, a welder, and a blacksmith. So we can produce, upcycle, or do whatever you want, and really customize everything.

Interviewer 1
What are the main challenges that you encounter when you do the upcycling and recycling job?

Participant 3
The main challenge is companies that do not pay the correct salaries for their employees, or maybe not paying taxes the way they should. We come across that sometimes. But otherwise, it is a challenge to find upholsterers because this is a skill that has been forgotten in Sweden. So it's quite difficult to find people with these skills. Now we are lucky because a lot of people that came from Syria during the war have these skills so we have trained them to do it in the Swedish way. But there are only two places where you can get educated in this, one in the very north of Sweden, and one in Stockholm. So there will be a big demand in the future.

Interviewer 1
Is it your customers who look for sustainable options or do you try to convince them to buy more sustainably?

Participant 3
We sell sustainable products, so we try to get the customer not to buy new ones. So our offer is from the beginning to sell recycled furniture and, for instance, if they ask us for 200 Kinnarps chairs and we only have 180 in stock then we might buy 20 More from Kinnarps to complete the order. We don't say “no” to an order, but usually we have enough in stock so that we can supply them with everything recycled. Maybe we change tabletops to be new, that could be the case, but otherwise, it's recycled.

Interviewer 2
You said you have all services in-house. What if there is a missing piece of furniture that is not manufactured anymore?

Participant 3
We 3D print them.

Interviewer 1
Do you have any contracts with interior architects or interior design companies?

Participant 3
No, we don't have direct contracts with them. But some municipalities that we have contracts with, have contracts with certain architects and then we work with them.

Interviewer 1
What are the municipalities that you have contracts with?

Participant 3
Basically all municipalities in Sweden. So we have a contract through Adda, which separates contracts with the big municipalities like Gothenburg and Stockholm, and so on. We have a contract now through an NDA. So we basically have all the ins and outs of the Swedish government in a separate contract, which is 700,000 employees so there's a big market.

Interviewer 1
Did you have all these contracts before the change in the framework, the one that allows now the governmental institutions to get furniture secondhand?
Participant 3
No, these contracts are new, most of them. Some municipalities we have had contracts with for seven years. That's the oldest contract we have. And actually, the private sector is more willing to buy secondhand than municipalities and the government. And it should be the other way round because they are the ones wanting us to reuse and recycle.

Interviewer 1
Yes!

Interviewer 2
When you have upholstered furniture that is dirty or has stains, do you clean it?

Participant 3
Yes, because we have cleaning services as well.

Interviewer 2
And what if they don't like the color of the furniture they have, do you change it?

Participant 3
Yes. We do both. We have a big stock of more than a hundred thousand pieces of furniture, but we also can take the customers' own furniture, refurbish them, repaint or redo the lacquer or put new upholstery on them. So we do all of this as a service. Or maybe just clean furniture.

Interviewer 1
Where are you based?

Participant 3
The biggest office is outside Lund, and our second biggest is in Jönköping. And we are expanding to Stockholm and Gothenburg right now.

Interviewer 1
Do you do the logistics and transportation? And in a sustainable way as well?
Participant 3
Yes.

Interviewer 2
What about price and budget?

Participant 3
The customers that we have don't focus on price, they focus on rework, and maybe they will choose a fabric that is more expensive than the chair was from the beginning. We have come across this situation where we re-upholstered furniture for a company that was so expensive that they were almost double what they were from the beginning. So that depends. It's more and more companies that look at it this way because if you have a sofa or a chair that is upholstered and it's of good quality, it's worth taking care of it, and fixing it up. Then the money is not so important. But on average I would say that what we sell is normally between 50 to 80% of the sales value of new furniture.

Interviewer 1
Yeah. What are the kinds of furniture that people are more willing to buy second-hand?

Participant 3
They're willing to buy everything from us, as soon as the company understands our concept. We are a complete interior decoration company. So they will get an office that looks exactly like new but costs the way second-hand does and get the same guarantees and everything. As soon as companies see our concepts they become our customers.

Interviewer 1
We would like to thank you for your time. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers
Bye, have a nice day!
Interview 4: Envivo

Interviewee: participant 4  
Stakeholder: supplier/PSS  
Date: March 14th at 14:00  
Meeting: online (Zoom)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 4 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
Could you start by explaining how Envivo works? What services do you offer?

Participant 4
We have subscriptions. The client gets the furniture per month, and they can get services like architects and logistics and everything. So, the subscription with renting furniture instead of buying furniture.

Interviewer 1
Do you consider it to be a product-service system (PSS)?
Participant 4
Yeah, it's a product or service because you get the products in the subscription, but there are also a lot of services around it, like moving the furniture, you could change furniture during the subscription and you get the architect helping with how the furniture should look like and so on. So it's not just the product but it's of course you can call it a product or service.

Interviewer 1
What is the title that you give Envivo? Do you consider Envivo a supplier?

Participant 4
We supply the furniture through some subscription. So we are not producing any furniture, we put furniture together with the architects help and we collect furniture from companies that don't need furniture and put it together in other companies. And so we are a digital platform, or a hub you could call it. But the thing of course is that we provide companies with the subscriptions.

Interviewer 1
On the website, I saw that first you see what the clients have in the inventory already to compose as well the new interior. Do you also take the inventory furnish to refurbish and give it back to the same client as well?

Participant 4
Yeah, we could do it if that's necessary, if that's the best thing to do. But we could also take the furniture and put it to another customer without doing the refurbish. So it's depend on what the needs are for the customer.

Interviewer 1
Do you have in-house staff to refurbish and clean the furniture?

Participant 4
No, we're working with the partners. That is outsourced and also, other services like architects and logistics is also doing with doing that together with partners, outsourcing those services also.
Interviewer 1
Does a client usually go to Envivo first or to the architect?

Participant 4
It can be both ways. Some customers we are connected with, they understand what we do and they like us. And then we are the ones connecting with the architect. Then there are other companies starting with an architect and the architects say that we are good partners. So it's both ways.

Interviewer 1
Who are your clients usually? Is there a specific profile that usually chooses Envivo?

Participant 4
Not really. It differs. Maybe it's companies that like what we are doing. It could be for the sustainability aspect, or the flexibility it gives the client, since in a subscription you could change furniture during the time and some companies like that or they may be upscaling and flexibility is good. Other companies may like the economical part, the possibility to pay per month instead of buying everything at once, directly. But maybe the thing in common is that the companies think they need to do their business in a different way, to make it sustainable.

Interviewer 1
What are the sizes of companies that you work with?

Participant 4
Right now it's medium, medium/small companies. We have customers that are big, but we are just working with one office in one town so it's not the whole company right now. So it's between 10 to 150 countries.

Interviewer 1
And what are the customers perspectives in the inventory stage, when you look at their own products? Are they willing to reuse them?

Participant 4
It's different, but we're helping companies. If the companies do not want to use their own furniture. Again, we could take them to another customer. So we're helping the companies to take care of all furniture even if they can't use it in their new solution for the office.

Interviewer 1
And does that make it cheaper for the client as well, to use more of their own furniture?

Participant 4
Yeah, if you have a solution with the furniture that the client owns and mix it with the new furniture, of course it's a better economy then just working with new furniture. So we could get a better economy in that case.

Interviewer 2
So, do you buy the furniture from your clients if they don't need it or do your clients need to pay to take it away?

Participant 4
Yeah, we do it. We are the ones who are buying furniture and we could buy the furniture from the companies and take over the responsibility of the furniture and they could from that point change furniture.

Interviewer 2
How about the furniture your clients already have but they don't want to use?

Participant 4
We will take care of that and put it in another customer's office.

Interviewer 2
But do you need to buy it or just take it away?

Participant 4
It's different, depending on the value of the furniture, if there still is value in the furniture. Maybe they bought the furniture a year ago and it's nearly new furniture we could buy it from them, but it depends on the interest of the company and how they look on the furniture, if they have a value on the furniture.

Interviewer 1
And what kind of furniture or material is easier to reuse it from the inventory?

Participant 4
It's different. So, we give them we give the customer sustainability report, so they get control over the climate the impact of the solution and different furniture had a different impact on the climate. Furniture made of wood have lower impact than furniture made of metal, so we we want to make it easy for the company to make sustainable choices. So by putting light on the question and by giving them the report, maybe they take a sustainable choice. But the solution could be as the architect wanted to be.

Interviewer 2
Do you have any tools to calculate these things, like CO2 emissions?

Participant 4
We are right now building a digital platform where we will calculate that. So we're working on it. But we already have some control of the model and how it would look like, but it's not ready today.

Interviewer 2
So what are the challenges of your work, currently?

Participant 4
The biggest challenge today is to get companies to change the behavior of what they are used to buying. Because that is how they have done it for many years. So to change the behavior of doing furnishing business is definitely a challenge. And to get the companies to look into the business model, and check on the economy, and compare it to buy, and look in every angle of the sustainability, and the economy. Maybe it is sometimes hard to see how much you have to change furniture in the future and it's hard to see that part as an upside. But as I would say the behavior changing behavior that's that's the hardest.

Interviewer 1
Has there been anything that has been successful about changing behavior and the clients that you have tried? Maybe something that you tell them, maybe a few facts that make them more prone to to change,

Participant 4
Yeah, I think that's depending on what the person at the company has as experience, if they think it is something they wouldn't like to do (reusing furniture), by saying that Envivo makes it easy for them to take care of take care of this furniture that they have, we give them a subscription, where they could change furniture when they need to, so they will not be stuck to furniture they bought, and that we also give them the sustainability report.

Interviewer 2
On your website you mention that your client can change furniture when they want to when they have a subscription. Can they change all furnitures for example half a year after?

Participant 4
No, they cannot change all furniture, they can change a part and it depends on the subscription, how long you have agreed on the subscription. The subscriptions are of 12 months, or you could have five years. The most common deal is three years of subscription, and during that time, you could change a part of the whole office. And hopefully it's enough for for the needs of changing. So far it's been enough for changes. Also we, of course, try to meet the customers needs. Some customers may be moving the whole office and we, of course, try to solve it as well. If we have the possibility to use the furniture with another customer, even if the subscription is not in the end, we do it. We try to help customers always.

Interviewer 1
From your experience, is there resistance from the clients' employees towards using second-hand furniture?

Participant 4
No, I think the most of the companies like to reuse as much as possible. It just should not affect the solution in a bad way, of course. If you want special feeling in the office we need to fulfill those needs. But I think more and more companies are looking forward to having reused as much as possible.

Interviewer 1
When a client’s need is not fulfilled with the available options of second-hand furniture is it then that you contact partners that are suppliers to get new furniture for that need?

Participant 4
Yeah. So you could mix the solution with the new and used furniture.

Interviewer 2
Will you also offer only newly produced furniture or do you try to have only second-hand?

Participant 4
We have customers that only have new furniture. We try to invest in furniture that has a long lifespan and to use it during its whole lifespan. So we’re not against the new furniture at all, we think that's a part of how it will work for a long time. But when you end using the new furniture needs to be preserved. So it is important that it comes from good producers and with as climate impact as possible.

Interviewer 1
Which labels do you look for in newly produced furniture so that you know that it's as sustainable as possible?

Participant 4
You can look at the CO2 impact. More and more producers are good at reporting down to specific furniture or how the CO2 effect will be. So you could look on that and the business is getting better and better to provide the information about where the parts are coming from and soon there will be law that you need to have digital credit pass with all the information about the product, where it will, where it produced and where the parts coming from and so on. So it's getting easier and easier to see what kind of furniture have lower impact.

Interviewer 1
Do you offer a warranty? When you refurbish something, do you have a new life expectancy of this furniture?

Participant 4
Yeah, in every furniture we put the lifespan of it, and the lifespan is depending on different facts, how it's produced, the quality, and the color and so on. But the customer doesn't need any warranty, because we are the ones who have the responsibility for the furniture. There's no need between us and the customer to get a guarantee or something because the furniture will of course be a part of the solution during the subscription.

Interviewer 2
So if the furniture gets broken during the subscription, you will fix that?

Participant 4
Yes, of course.

Interviewer 1
So, we would like to thank you for your time and participation. We hope that we will develop something that will benefit Envivo as well. And we will make sure to share our reports with you when we are done.

Interviewers
Bye, have a nice day!
Interview 5: Scandinavian MIND

Interviewee: participant 5
Stakeholder: CEO/potential customer
Date: March 16th at 11:00
Meeting: online (Zoom)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 5 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 2
So, the first question that we have is how many people work at Scandinavian MIND?

Participant 5
We are five people full time and then we have a network of freelancers and close collaborators that we work with so at any given moment, we can be up to eight people.

Interviewer 2
Do you work more in mostly shared offices, individual offices or places like the booth you are in?
Participant 5
Our office space? Yeah, so our setup is a big question. Even though we're a very small company, we have two offices, one in Stockholm, and one in North Sweden. So we have a design office in Umeå, where we have two designers sitting there. So that's a fixed kind of studio space. And then we have we're sitting at a co-working space here in Stockholm called Helio GT 30. So as a co-working space, we have different settings, a couple of lounge areas, there's a quiet area, which I'm sitting in most of the time, and then we have these sort of soundproof booths for digital meetings.

Interviewer 2
Oh, that's interesting. So you never had any interior designer work for your working spaces. Do you work in these sharing spaces both in Stockholm and Umeå?

Participant 5
In Umeå it is our own space. We haven't worked with an interior designer, but we design the space ourselves, basically, using furniture from companies that we like, designers that we know and like.

Interviewer 2
Nice. And usually these decisions, is it you the CEO who makes them, or someone else?

Participant 5
I guess, ultimately it's me as CEO. I should mention that previously in our history, pre-covid, we had a big space in Stockholm as well, which we furnished ourselves. Usually, our creative director is the one deciding which furniture we use, so I'm just on board with whatever he likes.

Interviewer 2
Is there a driving factor for the decisions? Is it the budget or sustainability, or is it the function, or aesthetics of the furniture?

Participant 5
I think all of the above are important for us. But I don't know how much you know about how we work. But since we have been so active in these industries, I mean, we work very closely with the fashion industry, with the design and furniture industry, and so forth. We ourselves commission stories about creatives in these industries, and we also hire photographers or stylists, and stuff like that. So, our network is rather big, and our knowledge of these industries is kind of in-depth. We know the companies we know the people working in the industries. We know the architects, interior designers, so it's more about finding good people to work with and finding brands that we like to collaborate with. And we've done both buying furniture and also we've had an occasion when we've done a project with a Nordic furniture brand. And through the project, we do better deals and we get access to furniture. But we only collaborate with Nordic designers and Nordic furniture brands. I think all of them have Nordic production as well. So, you know, the company's name is Scandinavian MIND. We're all about promoting Nordic innovation and so forth. So I think above everything, it is important for us to promote good Nordic design and production.

Interviewer 2
We did see a lot of interesting articles there about the interior design industry. There was one about carpets, which was really interesting. I forgot about the name of the company. Yeah, I feel like it does show the concern that Scandinavian people have towards sustainability. That's one of the things that really caught our attention. Do you also try to buy it second-hand? Or you never thought about furnishing the office with secondhand furniture?

Participant 5
I buy secondhand from myself privately but I don't think we have done it in the office. Well, I'm sure we have. I think there are a couple of vintage pieces in the studio in Umeå. One of our designers has a keen eye for finding sort of vintage second-hand pieces that are from the design history of Sweden or Scandinavia. So yeah, that factor is in, absolutely. Can I ask, before we move on, do you have an overall thesis that you're working with? Are you doing more of these interviews as well? So just helps me understand the context in which I'm answering this question.

Interviewer 2
Yes. We are contacting both end users, so people who work in office spaces, we're contacting CEOs as well, and also companies that are similar to our collaborators, so interior designers, architects, and also the
suppliers for furniture. So we've been noticing a really big trend coming to office interior design, that a lot of companies are already trying to adapt to the laws that are coming soon in Sweden and the EU about becoming more sustainable and doing that is one of the ways that they find to show that they're being sustainable. But in general, the initiative is still coming from the architects and designers, suggesting to their clients.

Participant 5
Right. Do you also cover the production of furniture it was more like business models, how you buy and rent and that sort of thing?

Interviewer 2
It's mostly business models now but in the beginning, we were going through the sources of furniture. So we're thinking they used furniture, new furniture. Used furniture would be from both outside (second-hand) and from inside of the company (inventory). So things that they had or things that other companies had that they're selling. And then new furniture that is sustainable, are made in a circular way. So those are combined and compose a more circular space. So, in the last one. We did have a few thoughts about the production as well. But we did not go through very deep in the third one because reusing is what we see an increase on.

Participant 5
Yeah, well, it's hard to cover everything. Complex issue. I think the furniture industry has a long way to go with upgrading their production methods and materials, and I think there is a lot to do there. But I do think it's interesting to see their new business models emerging with sort of renting and leasing furniture, and their new way. Especially for a company, not to just buy new stuff and throw it out when you renew the office.

Interviewer 2
Yes, exactly. Product service system (PSS) is also emerging in the industry. There's this company called Envivo, and they have this really interesting way of dealing with that. They rent and lease, and they also take care of the maintenance during the time of the contract. So they sort of circulate furniture amongst their clients. So that is something we will see a lot soon.
Interviewer 1
Back, when you were talking before about your choice of furniture it was more the out look, but not a function itself, in your office?

Participant 5
Yeah, we've been quite vain, choosing cool furniture over functional, small company. But I remember when we chose furniture for our last space our team complained that the chairs weren't comfortable enough.

Interviewer 1
Will you consider the budget for your office furniture? If style is the first factor, what is the second factor?

Participant 5
I would frame it like this. First thing is the values of the company, making sure it is Nordic brand and design. So that's number one. I think that it comes kind of with that, but it's not the first thing we look at. Secondly, I mean with such a small company, so definitely budget is a part of it. But that's why I mentioned also, we do a lot of collaboration with companies, so maybe I'm not a very good representative of buying furniture because we have such a unique position as a company. We know a lot of these brands and have these connections. So when we buy furniture we get discounts because of our network connections. But you know budget is of course always something you have to keep in mind.

Interviewer 1
Because you interview a lot of different furniture designers. Do you know about the current trends in furniture now? Is it about circularity and sustainability or looks?

Participant 5
Trends? I could ask my colleagues about this. I'm always disappointed when I go to furniture exhibitions and furniture fairs. I think that they should be a lot more focused on sustainable production and sustainable design choices than there are right now you see more in the students, the school exhibitions and stuff like that. There are a few really good ones. I think Emma Olbers, she's an independent designer. She's really on the forefront of making and talking about the importance of the designer in making sustainable choices,
because the designer has a big role in making sure production becomes sustainable, because the designer chooses the materials and you can know design with more or less materials. A huge number of furniture's carbon footprint in the actual materials. So there are designers that are going in this direction, and we always try to highlight them in Scandinavian MIND. As you mentioned, there are corporate companies that are doing some work, actually a few of them in the Nordics, fascinatingly many. But I think that overall, design is key in the furniture space. That's my impression.

Interviewer 2
So, did you have any stories in the magazine talking about the reuse of furniture?

Participant 5
Good question. Specifically regarding reuse of furniture there's very little going on. I think it's too little. There are these kinds of rental services, I'm sure you know them. What's the name of the new rental service office?

Interviewer 2
Envivo?

Participant 5
That one, but there is another one as well, Beleco. Which I think is pretty cool.
We have a system in Sweden where there are huge factories in Småland that produce new stuff all the time, and that in itself is an unsustainable practice. And with little to no system in place for recycling or reusing them or taking them back and so forth, and there's almost nothing going on. There was one of those PR stands, during the furniture fair when one big company had a big container out and they're like "we refurbish 200 chairs in three hours or something", but that may only work with their specific chairs. And it was not really operational, it was just like a concept. So this transformation will not come from the furniture manufacturers. It's not in their interest at all. But I think that because there are new business models and growing and people are looking at new ways of operating their company. I mean, even if I were 25 people and move into a new office. I'm not sure I would consider buying new furniture for that office. I would look at many different options, I would look at coordinate space, I would look at leasing furniture, I would look at building offices together with other companies. So I think the industry is going to be forced to change in
the next few years and the furniture manufacturers are gonna have to keep up. If I have a space with 5 people in the office, to 10 people and I grow and I get four people and then I go back to 10 people and that's absolutely another setup, much more dynamic, and these rental solutions can service that but the furniture manufacturer cannot. So there's a huge transformation happening in the industry, I think which is going to be painful for the manufacturers and it's also going to be painful for producing stuff that much more circular and don't use these problems all the time for doing and, you know, doing different types of upholstery and recycled stuffing the future they're not using mixed-use textiles. You can recycle the textiles there's a ton of stuff that has to do. Yeah, there are integrations happening on all these fronts. So it's not like there's no technology out there to implement them. But I think we're looking at a very traditional, you know, furniture is one of the most traditional industries out there. So even though we consider design as a kind of forward-leaning, progressive, innovative industry. You'll be shocked at how conservative they are.

Interviewer 2
Yeah, that's something we've been finding out slowly throughout the process. Yeah, there must be a wake-up call for them (manufacturers). Because the ones who survive this change are going to be the ones actually doing something and trying to redesign things so that it would be easier to recycle and so on. But it's also up to the people who are dealing with them. Like the interior designers. As our collaborators, they believe that they have the responsibility to try to change and influence their clients to make the choices that will later on change the whole industry.

So we'd like to thank you for your time. And also thank you for doing such a great job with the magazine. It's really inspiring and I'm sure that will inspire a lot of other people to also follow the path of the stories that you tell there. And yeah, we will make sure to share our results with you and our reports. And we wish you a great day!

Participant 5
Thank you so much for doing this great work and yeah, keep me updated with the results, I am super curious to read what you come up. Bye.

Interviewers
Bye!
Interview 6: Kinnarps

Interviewee: participant 6  
Stakeholder: supplier  
Date: March 21st at 14:00  
Meeting: online (Zoom)

Interviewer 1  
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2  
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 6 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1  
So the first question is how many employees does Kinnarps have?

Participant 6  
Today within the group, we are approximately 1700.

Interviewer 1  
So who are the most of your customers? Are they interior designers and architects? Are they the companies receiving the furniture themselves?
Participant 6
I would say that it's the companies receiving the furniture, but we quite often work together with architects like they are working together with the customers during the layouts and the whole day to solve problems. So our direct customer is often the company using the furniture, an office or a school, or whatever it is.

Interviewer 1
And what are the trends? The recent trends in office furniture that you see, both generally and sustainably speaking?

Participant 6
It’s not really my area of expertise. But generally, I would say it's adapting to the hybrid work. So creating hybrid workplaces where you have those kinds of solutions where it can do both. And it's also to get people back into the office and what kind of environment you need. To be a good office, they could, for example, receive these hybrid meeting sites or meeting areas, but also high-focus concentration rooms or areas where you can do your high-focus work. Those are some trends that we see. I would say that sustainability at large but specifically, circular solutions, it's a trend and increasing opt to use the furniture you already have and maybe new ways to ensure that the pieces of furniture have a long lifespan for a long time and renovating or updating.

Interviewer 1
Who contacts and who makes the decisions?

Participant 6
And I would say that it depends on whether there are different cases with different setups. For example, if it's bigger projects or you have an interior architect and it also then varies on the role towards the office at least, that architect has effects or it goes directly to the customer and where they want a solution from for proposal. I think that this depends on case to case very much. We were very close either directly with the customer and many times very closely together with the interior architect to this product from the different materials and so we do both I would say.

Interviewer 2
What are projects or initiatives that Kinnarps has taken towards sustainability? Are there any plans for it?
Participant 6
Yes, so concerning our sustainability, how to enhance sustainability in projects? Well, I think that is, I mean, sustainability is a big focus for us in many different aspects of our business, both in terms of, how we produce furniture, what we do in Sweden, our production units, a lot of environmental and sustainable sustainability initiatives connected to that. And we also have a lot of sustainability initiatives when we're talking about product design and then designing the product, for example, for enabling or making it easier or possible to renovate and update the venture. When they have been used for a long time, and also ensuring quality is an important aspect of what's so great about them but also sustainability from my point of view, that the furniture should be of high quality and then have a prerequisite for having a long service life. And then another aspect of our sustainability work is how we develop new business models connected to circularity, for example, the possibility to rent your furniture or different developments of services, updating or renovating or where you can wash your furniture. So in general terms that are three segments that I'll say we work with sustainability and then a lot of different activities within each of these.

Interviewer 2
Is this service from the outsource or from your company?

Participant 6
We provide our customers with both our own products, our own pieces of furniture which we have produced ourselves, and which are within the group, and together with these services, for example, delivering them to the customer with our own trucks. But we also use complementary suppliers for example, the carpets and the lighting to get the full total solution for the customer, and then that is not the products that we produce ourselves but partners of ours that we use in that to get the total solution for the customer.

Interviewer 2
So during this, will your clients ask for the CO2 emission saving?

Participant 6
We get questions regarding the climate impact, or sometimes the CO2 footprint, or the emissions and product declarations. I will say that it's not that common. And it's also based on whether it's available. For example emissions are available for a handful of products. We can do some types of calculations. That is not an entry level calculation for more products. And we do calculations on our own business, but there is a lot of data and it isn’t arranged in the way you can easily get at least a verifier of CO2 emissions. We can
make assumptions and make quite broad calculations but I would say it's more of an interest today than actual demands for that. And that is also connected to the complexity and the amount of data that is needed to do that in a serious way.

Interviewer 1
Do you have any projects about reusing furniture?

Participant 6
Yes, we have several projects where we get asked for that and which we have delivered also, quite often a combination of different solutions. Together with maybe a reupholstering or renovation or updating of their existing furniture, in combination with new furniture. So those kinds of projects we do, and are also getting more and more a common and a bigger and bigger part of our business.

Interviewer 2
What are the main problems that you encounter when trying to implement sustainability?

Participant 6
We talked about the second layer circularity or these types of solutions for our customers. We're reupholstering and using. For example, there are some challenges connected to logistics, if you have reused furniture, it's often and we have an online store with reused furniture, reused chain and that is a picture of what is available right now. And often projects like they have a delivery time in three months and then it's not we're not sure if those furniture is available then we talk about reusing it's often a private limited to pieces to choose with colors and sizes and that's so that is a challenge. Of course we can then our strength is since we produce new products as well you can combine or if you have reused she knows shares five of them that you need to attend to we can take those five reviews but also complement with five new ones that would look the same.

So that is a way to tackle that but neither in ways that it's that is a challenge to match the need. And in terms of time, that's what we use. When we talk about, for example, renovation or updating, it's sometimes a challenge that it requires a lot of man hours. It's often manual work. Which means that it will cost you will have a cost connected to that of course as well as if you want to have fairly paid workers to do so it's it's can sometimes be a challenge to find an effective way of an effective solution where you can do it in a cost effective way by not having to do too much manual work that is connected to inventory but also the actual
renovation or updating for example, we think that is in cases where you can do renovation or updating or changing parts on site not having to transport the product back and forth through some factory or renovation service. You can do it often in a cost effective way. And also the customer doesn't have to be without a shirt for X weeks, for example. So there are some challenges Absolutely. That we also see possibilities to provide these kind of services and we think that it's a development of the services as well.

Interviewer 2
Is it cheaper to use second-hand furniture than new?

Participant 6
It could be. Yeah, depending on what you do and what you need to do. That could be the case. Renovating a piece of furniture shouldn’t only be done for getting a lower price. We believe that it is also important that you think about prolonging the life of a piece of furniture, but also to assess if it is worth doing a renovation or update. It's different if you do a reuposturing that will prolong the life of a sofa by adding two years, five years or 10 years, for example. And that has an impact on the cost of the whole project, when seeing it form the amount of years you can still use it, and also from a sustainability impact point of view.

Interviewer 1
What are companies that usually buy from the second-hand platform? Are they usually smaller or bigger companies?

Participant 6
I don't have the exact number. It varies, so both bigger and smaller ones.

Interviewer 1
We are working with the development or other platform, as well to make furniture selections by interior designer and in order to bring also circularity to the sector of office interior design, and the role of the suppliers in this platform would be to also advertise your products both newly produced and secondhand. In a transparent way making it like making practical information available in one place only. In particular to see which one would be the best for the project. And especially to make it easier to find secondhand furniture available around and also other services that are not really related to newly produced furniture. And we wanted to know, what are your thoughts about a platform like that?
Participant 6
Spontaneously, I think that there's a general need to gather information and it's a challenge today that you will have to look at several different places. So in that sense, I think it's an interesting thought. I mean, I think that is a challenge as well, having available data and available information and preferably this up basis as possible. So I believe that is interesting.

Interviewer 1
So as a supplier would you be willing to contribute to the platform like that?

Participant 6
Spontaneously as well, I think that could be interesting. So of course, also always a matter of talking about data and inflammation and how to retrieve that in an effective way. And not adding on too much administration and indirect in that sense, I think it's getting more and more important, connected to standardization that you should be able to retrieve data from different sources and gather them in one place without having to add in information in specific systems. Because that is maybe not in these kinds of systems that you mentioned. But that is a reality for us as a producer and suppliers that we need to provide information and in many different systems that are connected to products and tenders. For example, other types of data connected with CO2 emissions. I mean, the whole industry, we move that way. It's very interesting to think about how that can be done in some way and I think standardization is the way to go there.

Interviewer 2
Are there any factors that would motivate you to not use a platform like that?

Participant 6
Maybe if it requires a lot of work, to be a part of it. And of course, also be set into relation to what we think we would get out of it. I mean, it could be the work to put a lot of resources into something in particular that would give us access to another type of business or connection or being able to provide information to interior architects for a company in a different way. Definitely, it's important. So that could be a barrier. If we don't see the depths of the background it would be big enough but that depends on how people work and their advantages of it.
Interviewer 1

So, we would like to thank you for your time. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers

Bye, have a nice day!
Interview 7: Senab

Interviewee: participant 7  
Stakeholder: supplier  
Date: March 23rd at 9:00  
Meeting: online (Microsoft Teams)

Interviewer 1  
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2  
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 7 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1  
How many employees are there at Senab?

Participant 7  
I think we're totally 200 people.

Interviewer 1  
Who are most of your customers? Are they interior designers/architects or is it the company?

Participant 7
I would say the companies, but we also collaborate with designers and architects. I would say maybe, it also depends on who the salesman is, but for me I guess it's 20% architects maybe and 80% directly with the companies.

Interviewer 1
And do you see any trends in the office furniture industry, generally and sustainably-speaking?

Participant 7
Yeah, of course. I think more and more are considering reuse of furniture, definitely. And as you know, we had this huge project in Knivsta with Murman and that was, of course, a special project. I also think that they're a bit ahead of the others, but it's a good project to show for the others "this is what you can do", you know? I think many people also just say, they want to be so much we like sustainable and green and so on, but they don't really know what it means. So often, they write in their quote that they would like sustainable furniture and so on, but in the end it's the price. So I think we're getting there but we're definitely not there yet. It's a long way to go. It's starting to move, definitely, and all our suppliers are really pushing forward their great sustainability. We didn't see that before.

Interviewer 1
And how do you describe the service that you do at Senab? Are you a supplier or something else?

Participant 7
We're like a facilitator. We work with around 900 suppliers. And we also offer, especially me, interior design. But it depends on the customer. Sometimes the interior design is already done by the interior designer or architect, so we just do what they need then. They want it cheap, so we bid and then the company that has the best price wins. It's a hard market but that's more for projects for schools, hospitals, etc.

Interviewer 1
What are the challenges you encounter when using the furniture the client already has?

Participant 7
Yeah, that's tough. But we collaborate with big companies that can refurbish the furniture, repaint, change fabric, and so on. In Knivsta we did that a lot. We even resized the tables, sent them away to cut them off and then sent back. Probably it would have been cheaper to buy a new one, but they really wanted to go all
the way. And that was so fun. They paid for it. It was not cheaper, but maybe we will go there. It's a bit expensive now, but I think in time it will be cheaper to upcycle your furniture. Also many suppliers are already talking about taking back the furniture when it broke or you are tired of it and then they can upcycle it. So that's new as well for us. But the biggest task was the logistics part. Because that's a lot different when you work with reusing furniture. Otherwise, you can just tell the suppliers you want 100 chairs in one month or two or three months. And they just say "yes" in the factory, but now you need to store 100 chairs if you want to buy them second-hand because they already exist and you have to store them somewhere. Yeah, that was hard.

Interviewer 1
And the refurbishing service that you mentioned, is it all outsourced or do you have the services in-house as well?

Participant 7
We have a small business. We have a sister company called Edsbyn, which is located in mid-north of Sweden. And they are also really into sustainability. And that's fun because they have furniture made in Sweden. Then we have a huge factory in Edsbyn, a small village. And there we can send, for example, the table screens, and if we want to change fabric we can send it up there. So, mostly outsourcing but a bit we can do it Edsbyn.

Interviewer 1
And why do your clients want second-hand furniture? Do they think it's going to be cheaper in the beginning or do they actually want it because it's sustainable?

Participant 7
Maybe that's where we're at now, actually. They think it's going to be cheaper. We actually had a customer, it was a school I think, and they asked us to take all their old furniture to sell, deposit or whatever is best. So they sent this to us and to our colleagues, you know, Input and Kinnarps. They thought they were gonna get money for it, but it was the opposite, they had to pay us to come and collect the furniture. So I think that's where we are right now. But the customers will learn also that it's not always a cheaper option. But sometimes it is cheaper if you buy second-hand furniture, sometimes not. I've noticed that with table screens, I can get a better price with the new ones, for example. But then really high quality, like a chair from Gärsnäs, a high end brand, then buying second-hand is definitely cheaper. So it varies, actually,
Interviewer 1
Yeah, a little bit of luck as well to find available.

Participant 7
Yeah, that's also one of the toughest parts, to find all the furniture. It's gonna take time, but I think when we get a process that works. Of course now it's new. And we didn't have a clear process with Knivsta. But now I feel like now I can do it, I feel more sure and confident about the process.

Interviewer 1
Does Senab also offer rental/leasing of furniture?

Participant 7
Yeah, we do that. We have that as an option, but honestly, not so many customers are asking for it. We do that but it's not so common.

Interviewer 1
So from your experience, what are the sectors that are more willing to use second-hand furniture?

Participant 7
It's hard for me to say at the moment, maybe in about a year I will know, but it's both the public but also the private sector. I think it really depends on the person behind it. Like how up to date, he or she is to and how environmentally friendly the person is. But it can also be hard because there's no system. For example, if you show the customer a table "here we have a perfect table for you", then they answer maybe the day after "yeah, that's the perfect table", then it's gone. But we have suppliers that sell reused furniture, two big companies that we collaborate with.

Interviewer 1
Do you mind asking which are the companies?

Participant 7
Yeah, of course. It's Rekomo and RP.
Interviewer 1
Nice. We're having an interview today with RP and tomorrow with Rekomo. We've heard a lot that they're the biggest ones in Sweden, right?

Participant 7
Yes, they are. We also have some local actually, one from Gävle, a small one that we work with. So if we have customers that want to get rid of furniture, we always always ask them "is this something for you? Would you buy them, sell them?" Also, know that the government, maybe the region, public organizations, have this pool or site where they can reuse furniture and they can also get from each for free. So you have maybe 10 chairs left you post them on the site. And then maybe another school is "oh, we need those 10 chairs".

Interviewer 1
That is interesting! Was that a governmental initiative?

Participant 7
Yeah. It's actually a smart concept, I think, instead of buying new things, you check there first and see if you find what you need. Otherwise, yeah, proceed.

Interviewer 2
And as you mentioned before, this whole process is complicated and needs a lot of logistics. So do you think there is a need for a tool or a platform to help interior designers to choose the best differential for their project?

Participant 7
That would be something. Yeah, why not? I would say anything that makes the process smoother and easier, definitely. I don't know how many hours we've spent on the Knivsta project together with Murman. It was a lot just to search and logistics and have so many steps also. When you buy a new thing the customer can say "I want a blue chair with armrests", but when you were looking for pre-owned furniture, you don't really have the opportunity to choose exactly what you want. That's a compromise, but look at Knivsta and see what you can do.

Interviewer 1
I'm excited to see when it's ready!

Participant 7
It's really nice.

Interviewer 1
Is it already done?

Participant 7
Oh, it's like one floor left. I think so. So 80% done.

Interviewer 1
So we have two more questions. We have this idea for a platform, which will include all sources for circular furniture, the customer's inventory, the second-hand and the newly produced furniture. Each part will have a sort of help in that "source". So for used furniture, you can look for service providers nearby if you need to refurbish, upholster, etc. Then for second-hand you have a place where all available second-hand furniture can be found with practical information like the amount of CO2 saved by buying the second-hand piece. And for newly produced furniture it would compare how much CO2 is produced to by the pieces. So it would be sort of like a Pricerunner.se comparison site. Do you think that Senab would like to have a more active role in the platform, as a facilitator?

Participant 7
Well, it's hard for me to speak for the whole Senab. But I would do it. I love to reuse furniture and I think we have to go there, I think it's the only way. So yeah, as I said, getting it forward. I would say yes.

Interviewer 2
And from your perspective, when you use this website, do you see any barriers that may come with that?

Participant 7
That's also hard to know when I haven't seen anything like that. But no, I'm sorry. I don't have a good, good answer for it. I know there's a site called Place2Place but that's more like they put up every second-hand furniture from both RP from Rekomo, yeah you know it's a collection site with reuse furniture on the market. And I think, like you said, finding companies that can upcycle and everything. That would be great!
Interviewer 1
Yeah, I see. It's also still a raw concept for now. We're still like, on the making.

So we would like to thank you for your time and we hope that we are going to find something that will be helpful for Senab and we will make sure to share with you the thesis report when we have it.

Participant 7
Nice, nice. I look forward to it. Also, just come back to me, you have my email, if you have another question or anything.

Interviewer 1
Oh, great. Thank you very much. Have a good day!

Participant 7
Good luck with your project! Bye!

Interviewers
Thank you. Bye!
Interview 8: RP

Interviewee: participant 8
Stakeholder: supplier
Date: March 23rd at 13:00
Meeting: online (Zoom)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 8 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
Could you start by explaining how RP works and what services you offer?

Participant 8
We started in 2004 because we saw this all-consuming waste. Tons and tons of interior furniture for public use are thrown away. Our founders thought there needed to be a better way to handle this and started taking care of it instead of throwing away, tried to sell it and do something with it. So we started that way in Stockholm. I started working with them in 2009. Back then we were seven employees in one office space in Stockholm. Today, we have about 90 employees and showrooms in nine different cities. What we do is buy, sell and rent out used furniture for public use. It could be everything from carpets to roof, lights and
everything between those nine dealers. We have a common place on our website, where we show everything we sell. The storage is local. So we have everything in common when the site and we start we borrow from each other as sectoral customers in projects etc.

Interviewer 2
Doing all that, what is the title you give RP? Do you outsource the services (like cleaning, refurbishing, fixing)?

Participant 8
If you want to look for the best environment to fix furniture with new textile and a new painting and things like that, it is also very popular. And we worked with employees.

We want the architects to use the furniture as it is because then they save the planet in the long run. As soon as you start to do something with it, for example, sofa it's tough to do an initial value. Driving it from one place to another, take textile off and place another textile to the factory and then drive it back. You haven't done the environment any favor anyway, because the customer says, we use our own sofa with a new fabric. It's good, but it's not all the way. All the way is to use the furniture and it's because it's already manufactured.
So that's what we are fighting for. But of course we help our customers to repaint and repair it and change fabric.

Interviewer 1
Who are most of your customers, the interior designers/architects or the company receiving/using the furniture?

Participant 8
It changed throughout the years. When we started, small offices that wanted to have a cheap solution looked for low-quality/-price furniture, but they said they needed a better product than low-price companies had at the time, and it was not going to save them money. But in the last five to seven years we can see a big difference. Nowadays we have customers that choose reuse even though it's more expensive sometimes, because they want to help the planet and their economic situation. First environment, then economics. But as always, all those years have been the other way to think with this change. And that's thanks to the architects. In the first years, they didn't want to buy used furniture because it was a little bit difficult to help the customers who would use furniture. They are used to putting the furniture into a planner or something
like that. They say “this is what we can suggest to you, as a customer” and it's very difficult for them to start looking after used furniture that they have in mind. Because you have very few to choose between, but nowadays we're more actors who reduce this. It's still more work for them to find out. For example, if you do allow in a hotel lounge and the customer said they want to reuse furniture it's more work with architects to find what they're looking for in the used furniture especially if you shouldn't change the fabric. So customers said that they won't buy it because it used. Architects say that we need to deliver it. So that'd be forced into it.

Participant 8
Those architects have been younger. It's the competence of your agent like that. For them. It's natural. They start work with whatever they want. But the big companies, they haven't done that for, you know, 50 years, and then people my age are working there. We use this kind of collect. We have anything to choose between this system, some sort of level that sounds like a very difficult to furniture up with us. What can we take please take a new one it says easy to work with but don't do this generation mindset.

Interviewer 1
And also the requirements now with Sweden and the EU. Do you feel like since they started to plan for the future that the companies are gonna have to adopt more sustainable measurements?

Participant 8
No, you can't see this. So we can see the customer is asking more often. And this forces architects to rethink the way they work, it's natural to look at reuse first.

Interviewer 1
In your process at RP, do you also analyze what the client already has? Or is that just something that the architect will do?

Participant 8
That's exactly what we do at first when we get the customer to control. First we'll look at what we can do with it. Second, we look at what we have and we can reuse and third, we'll look at new products with results that the customer is satisfied with in some ways, it's important to have satisfied customers. And most customers still look at economic results and the end result with colors. And the feeling of it. Of course it's
difficult to look nice. And the architects are the ones who are educated enough to do that. We are not architects, none of us are. We sell furniture and find new ways to use it.

Interviewer 1
From your experience, what are the kinds of furniture and materials of the furniture that are easier to reuse?

Participant 8
The furniture we sell in volume is, for example, working chairs, especially in special models that are very common in Europe. If we sell 2000 per year, it's easier to sell spare parts and everything you can have in store. When it's only one or two of them it is more expensive to restore because you need to order special fabrics for that one and special wheels, wood or mechanics. So volume is good and otherwise, you can say nothing's good. But the price or the result is what no one wants to pay for. Because of that, if you need to special order with something like that, the prices start going up and no one wants to pay for that because it's maybe 30% more than a brand new one. And that's the limit for a customer of course what it's worth to us use furniture.

Interviewer 1
Until now we only heard one person saying that, that a client wanted to upholster the textile that was so expensive. That was only the textile was more expensive than the furniture itself and they still use it. That's probably really rare happened they want that.

Participant 8
If you buy a brand new one, you can order brand new furniture with the textile or fabric you want to have that is specially made for you. It's all possible. Manufacturers do it all the time and it will still be more expensive than standard fabric. So it does seem to me that it doesn't mean anything is different right from the start.

Interviewer 1
We are considering the product-service systems. Do you rent or lease the furniture?

Participant 8
To customers? Yeah, we can do it, especially rent, because we currently offer it without the contract. The rent is just as long as you want one day, one year, 10 years, you don't have a contract if you say you want
to rent it for 10 years and after three days I want to give it back. So you're not locked with a contract, because we want to encourage you to have an organic movement. We just don’t want the furniture to stop being used. It doesn't matter if we have them in our store or in customer stores or in the office, whatever but never stop using them. So lock the customer with a long contract, it's the wrong way to do it. We think it's better to have movement in furniture all the time so that it always will be used somewhere.

Interviewer 2
And, like from your client's perspective, why do they want to use the second frontier because of the cost, or is it more sustainable?

Participant 8
I think what we saw was because we have been to have everything we sell. We have three years of warranty sometimes that the longer one to have a brand new one. So for us, it's important to buy furniture with very good quality because we don't want to get broken when we use them. And it's not the way we want to work. So we try to always have good quality furniture in the store because it would be cheaper for everybody.

Interviewer 1
And we saw about the furniture inventory app, FIA, could you tell us more about it?

Participant 8
It's quite new for us as well. In the market right now, all of us have an app to complete a product or complementary products. And the thing is you can use the app from day one you can start to look at what you have and what you buy in the long run. In the end, you have total control. You can see where I have those 10 chairs. You can name the place or send them. For example, 6000 employees and you have a department that works with in-house furniture. And they have the same store. In the long run, they will have total control of all the inventories because now one department doesn't know what the other one does. So they buy new ones because they don't know that you have 10 of them in stock. So this is a way to have control of the furniture in every interior. So you can use them over and over again in the company.

Interviewer 1
Is it for the companies that are going to have the furniture or for the architects to use or for you to use.

Participant 8
Both, because it doesn't matter. So the thing is, if you want to have control of your interior, you can use it. It doesn't matter wherever we are. We take a small fee. I think it's 200 rounds per unit per user. Yes, we just weren't wanting to be accepted, started working and then forgot it. Because it's fresh. There's no need to work with it. conflict all the time. But if it's for free, you easily forget them it doesn't bother you. So how to have a small fee just to make sure the user uses it, you know? If you have free ice cream, you throw it away. But if you pay 100kr or 10 euros, you would use it. In the end, the end customer will have bigger use for it over time because it may not be the same architecture company over the years, but you will always have control in the house. That's pretty good. And then you can split the admin account with the architect or whoever. So you can have insight into your environment and your inventory. But it cannot change anything but can see what you have and then start using it in the new project for that customer to have the admin login. On the data, you can have a lot of users that do a name for example architect, head of account economics, receptionist and they can choose an admin person who can choose what they see.

Interviewer 1
What are the sectors that are more willing to use secondhand furniture in their office?

Participant 8
Young organizations, and companies that are young. For them, it's more natural, as I said before, to work in an older company with younger employees. Also, we see a trend. For example, if you have a sustainability person (as a position) in a bigger company nowadays, you didn't have that eight or ten years ago at all. But still, you have that person's hunger for a new experience and new ways to work. And then the board in the company, that's older guys and girls, they just have a sustainability process because they know they must have it before us. When they change the board. It's younger people that have done this trip together, then they start working with it. So I think it's very much a matter of age or awareness.

Interviewer 2
So what are the main problems you encounter for working with secondhand furniture?

Participant 8
The main problem is to have a lot of things in the same colors. For example, if an architect wants 300 chairs, we only have 200 for the same color, then we need to buy them brand new to complement the old ones. And there's always a possibility that the fabric is no longer in-store or stopped being manufactured years ago. So the main problem is to complement if you don't have enough from the store. Another big problem
is that many people think that used furniture is trashy or old and have no good looks and also not many choices. Now, we want this new conference table and I wish there were many options, not two or three. They don't understand that we have 20,000 square meters of store. They don’t understand that. We are only one actor, and there are many actors in the business. Furniture companies in Sweden sell about seven billion a year, and used furniture does about 10% of it.

Interviewer 1
About a platform or a tool that is nationwide. Do you think there is a need for one, for all of the suppliers and interior designers and architects to be able to do the most sustainable combination of furniture possible?

Participant 8
There is a kind of website already. Have you seen the Place2Place website? Because they show our furniture and from other colleagues in the business. Their main idea is to to help the architects by putting everything in one place. But as a service, they want money from the suppliers, so they can survive. But we don’t need them because we have our own solution already. We already have the customer. Have you ever heard of HINT, from Hållbar Interiör? It's an architect company called Indicum that has started this movement and together with a lot of heavy names. Also including us and our business colleagues Rekomo. We have worked through this website for helping customers out to find a sustainable way with their interior. So it sounds like a guide. It's also possible to get a certificate to your interior.

Interviewer 1
They're not done with the certificate yet? When will they be ready?

Participant 8
No, under this year they will be ready.

Interviewer 1
Nice! Yes. So, one of our ideas would be a platform for specifically CO2 emissions comparison of both secondhand and newly produced furniture. So on the secondhand page, sort of it would be a comparison of how much you would save if you buy this, this one, or that one. And in the newly produced would be CO2 emissions you would be producing by buying that one, or this one.

Participant 8
It's we have talked about that because it's shown that it's very difficult to compare furniture because small details make a big difference. You know, if you take a handle is that material or another material or fabric or function or not? Where is it from, how will it affect the result? If you take an office chair for example, it can be produced in so many ways, there are so many variables. So you need to know what you compare it with. A black chair is not just a black chair. And when it comes to used furniture, it's almost impossible to know the details, we don't have control over it. RP does 200 million SEK a year on used furniture, so it's a lot of furniture that goes in and out of our doors. And we never know where they come from exactly, who was the previous owner, where they bought it from, and if it is possible to find it through Möbelfakta.

Interviewer 1
Yes, the measurement and standards are one of the biggest challenges I think. And also we don't know if all the companies are measuring in the same way. It says there is a margin of error that some could put here, some could put there and that doesn't really work to compare them.

Participant 8
But if the furniture was gone through us, we put the new fabric on it. It will change the result completely. And how will one ever know that we have done that three years ago? It's impossible to look in the back of the mirror to see where it's come from and how it affects the environment. The only thing you can really know is that it's better to use one that's already produced. When everything after that is blurry.

Interviewer 1
If maybe there was a QR code from the beginning where you ended up on a platform. Every time the furniture has a new owner, you have to register when something has to be fixed. That would be not a solution for the problem right now but for avoiding the problem in the future.

Participant 8
We heard that there is a website where you can see all the producer's furniture that they choose to put this stamp on. And that will be a good start. As long as you don't change the furniture on the way after that because then you will never know again. So there's a big job ahead of you.

Interviewer 1
So, we would like to thank you for your time. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers

Bye, have a nice day!
Interview 9: Rekomo

Interviewee: participant 9
Stakeholder: supplier
Date: March 24th at 8:30
Meeting: online (Zoom)

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 9 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Interviewer 1
How many employees are there at Rekomo?

Participant 9
We are about 60 people, in Stockholm, Gothenburg, Jönköping and Malmö.

Interviewer 1
What services do you offer?
Participant 9
First of all, we buy used furniture from companies and then we take care of them and make them look nice again, and test them in every way. Then we sell them or rent them out to other customers. That's the main business and what we started out with, about 30 years ago. Today we offer a number of different services. For example, renting out includes flexibility and yearly services. And we also offer reupholstery of used furniture, and also painting on metal, wood, etc. And of course, cleaning and changing spare parts for the furniture to have a longer life.

Interviewer 2
Do you outsource these refurbishing and cleaning services?

Participant 9
About 95% of those services we do in-house. But for example, when you need new paint on metal it is outsourced, it is sent to other companies we collaborate with, who are experts in that particular area. Because it's a lot of environmental questions you need to consider regarding painting, pollution, and so on.

Interviewer 1
Who are most of your customers? Is it the interior designers or the companies receiving and using the furniture?

Participant 9
I'd say that with bigger projects there's often a designer or an architect involved and sometimes they're the initial customer. We also have private companies, both small and big companies, without interior designers. Then it's mostly adding, for example, four workstations or something, so it is not the whole interior design process. Maybe they just need more tables or something like that. We also work a lot with the government, the regions, and municipalities in Sweden, and there are framework agreements regarding installation for this kind of organizations.

Interviewer 1
Nice. Do you have that after this recent change of framework, the one that makes it easier for them to buy second-hand or do you have that before?
Participant 9
We had that before that as well, but a little bit because you need a proper framework to be able to do it on a big scale. Because buyers in the public sector are afraid of doing the wrong kind of agreements, so it's much easier to handle these customers with the framework. And we have been a part of a lot of different processes over 10 years to make this happen, projects, etc, to make the customer to know what it's all and how it works. It's been a long way but finally, we're there.

Interviewer 1
So, what are the most frequent categories of second-hand furniture, what is the most common one to reuse?

Participant 9
We deliver about 10,000 electric height adjustable desks every year and over 10,000 office chairs as well, and conference chairs I wouldn't say same volume. So it's hard to say which one is the most wanted one or easiest to reuse, but the height adjustment that's a huge environmental impact, so that alone is a very good example of what is good about buying second-hand, because you're able to avoid a lot of CO2 emissions by reusing them.

Interviewer 2
Why do your clients want to use second-hand furniture because it is more sustainable or is because it's cheaper?

Participant 9
I'd say that around 30 years ago when we started our company, basically most of the customers came to us because it was cheaper. Nowadays that has changed. Our big customers buy their furniture from us because it's sustainable and good for the environment. But I'd say that it wouldn't be possible if it didn't cost a bit less than new furniture, so it's both. That's a big thing, if it wouldn't cost less than new furniture it wouldn't be that easy for some companies and customers to understand that this is good and make them choose it.

Interviewer 1
Do you also offer newly produced furniture if the client needs to complete the furniture set, or amount desired?

Participant 9
Exactly. Let's say we have 98 chairs, but they want 100 chairs to make them satisfied. And make it easy for them to choose the offer and we also change the desk/table tops, for example, to be able to reuse legs and those kinds of things.

Interviewer 2
From your experience, what sectors that are more willing to use second-hand furniture?

Participant 9
They contact us or are open for our offers from different reasons. Big companies are interested in working with us because of the sustainability and circularity, so that they can prove that they are doing something good when they're buying second-hand and we also take care of their own furniture. It's a partnership, we work both ways, we help them with things that they don't really have. If we have a new company, that started this year or last year, or a start up or something, they often are attracted by the low price, and the sustainability as well. So let's say modern companies with a good understanding of the environment or that are interested in understanding and doing something that's good for the planet.

Interviewer 2
Do you lease or rent furniture as well?

Participant 9
Yes, we rent and lease furniture to our customers.

Interviewer 1
Is it common that they choose that option?

Participant 9
Yes, it is. And it's growing as well. Let's say companies are very used to renting like a coffee machine or freezer or they have someone cleaning the office every month, and that kind of service. And that's becoming more and more interesting regarding the furniture as well. And it could be more sustainable for us to rent the furniture that you need. Let's say you have a piece of contract on the office space for 36 months, then it would be a smart thing to rent your furniture for 36 months as well. When it's time to move or maybe develop, grow or downsize, you could easily change the furniture and send it back to us that we could take care of and sell or rent to someone else.
Interviewer 1
Yeah, it also makes moving from one office to the other easier. And what are the main challenges that you encounter when working with second-hand furniture?

Participant 9
The product itself is usually sort of bulky, the chair, the cabinet or whatever. You need to have big warehouses. And there are a lot of people working at the warehouse to take care of all the furniture I would say that's the main thing, that's taking a lot of time and it's a bit tough to expand quickly.

Interviewer 1
So, do you think that there is a need for a tool or a platform that helps interior designers to choose the best furniture for their project, to find nearby refurbishing services and to find also both the second-hand furniture that they need and newly produced furniture that is more sustainable?

Participant 9
Like a marketplace?

Interviewer 1
Yeah, like a set of different marketplace styles, depending on which kind of source of furniture you have. So we are working on the development of one. That's one of the ideas that we have. For example, for something that needs to be refurbished they would find a sort of service marketplace so they find the company that does that, the refurbishing upholstery, and metal work would work around them. For second-hand furniture they would find from many suppliers, where to find, and what are the available options among all of the suppliers that would like to participate and also see how much CO2 emissions they would avoid by buying that one in comparison to a new one. For newly produced furniture it would be sort of like a Pricerunner, but for CO2 emissions, so they can choose the ones that have the least impact in the environment.

Participant 9
I'd say there's no such thing today. We have an e-commerce and a website with all of that you're speaking about today. We provide our services, our second furniture, and some new furniture that are produced with good environmental considerations. So we are competitors with other million different companies out there
that want to offer the same service/product. There are companies in Sweden work as a marketplace but mainly for second-hand furniture, but we're we are in a project together with different kinds of different companies and also customers, designers and architects. It's a big project that is funded by the Swedish government initially. It's called Hållbar Interiör. I think you spoke to someone at Indicum about that.
The tool called HINT helps you do that. That is basically what you explained. Maybe not like a price runner, but more or less, it helps you calculate what's good for your project. You are able to put in both your own furniture, buy second-hand furniture from a company and buy new furniture that are sustainably-speaking better than others. So yeah, that's what I've seen.

Interviewer 1
So, thank you very much. We really appreciate you taking the time to talk to us. We will make sure to share with you what we have in the end, and we hope it will also be helpful for Rekomo.

Participant 9
Thank you very much. It was fun speaking to you and I look forward to see what you come up with, that's very useful and helpful for your organization as well.

Interviewers
Thank you. Bye. Have a good day!

Participant 9
You too. Bye bye!
Interview 10: Input Interiör

Interviewee: participant 10  
Stakeholder: supplier  
Date: March 27th at 14:00  
Meeting: Input Interiör Showroom in Växjö

Interviewer 1
We are from an innovation master program with a specialization in design, from Linnaeus University. We are currently doing our master's thesis project. And we are collaborating with an interior design company called Plym, here in Växjö. They do projects for companies, such as headquarters and large office spaces. We are contacting stakeholders to gather information about the subject of circularity in the office interior design industry. So we want to know what your company’s situation is in the topic, to find out if you encounter the same things as our collaborator, or maybe different things.

Interviewer 2
The interview will take around 30-45 minutes and we would like to ask for permission to record the audio and later have it as a transcript in the report. People’s names will not be mentioned in the report, but we ask if it is fine to use the company’s name?

*Participant 10 consents to recording and to using the company’s name on the report and interviewers start recording using Otter.ai*

Participant 10
What do you know about Input? Do you know who we are or what we're working with?

Interviewer 1
Yes, actually we had a small workshop last year with Plym and we did a little bit of business research on the company and everything. So we came across Input, but also because it's so close to campus we can see the back of the building with large chair pictures, we also see Input vans out delivering sometimes.

Participant 10
Yeah, exactly.
Interviewer 1
So from that. And now, researching a little bit more about the suppliers, we have come to know that you're one of the biggest suppliers for office furniture in Sweden. We also heard that you are one of the most willing to help the client when it comes to reuse.

Participant 10
Yeah, I can say that Input is the northern largest reseller of furniture. We don't have our own production, we are working with companies that are producing furniture for us. So our strength is that we are working with everybody. So if there is a project where the most important thing is price we can look at those companies and buy from them. Sometimes sustainability is the most important and then we work with companies that are ahead in the sustainability aspects. So we can always adapt to our clients, that's why I believe we are so big and successful.

Interviewer 1
Yeah, it's important. And how many employees are there at Input?

Participant 10
I believe in Sweden, maybe around 400. Here in Växjö we are 16.

Interviewer 1
Who are most of your customers? Is it the interior designers directly or is it the company that is gonna get the furniture?

Participant 10
You can say there are two different ways to work on a project. Sometimes we have architects, interior designers, who start the job with our customer, and start with drawings, and then they come to us or the customer comes to us and other companies to compare the price. And the other way is when we work directly with the client, without an architect, in smaller projects most of the time. So it's a little bit different depending on how big the project is. I personally always like to work with architect or interior designers because I believe they are better at doing that job than I am to choose the furnitures, and I can speak for our products. Working together with an interior designer or architect you always get a better result, because we have our side to view the products and they have theirs. Sometimes they can get a little bit crazy and draw
something that we think will not do the job for the clients. The quality of the product chosen is not that good, it will break in 2 years, because it's a school and the product is for home or something like that. So when working together you get better results.

Interviewer 2
So what are recent trends in office furniture?

Participant 10
I should say it's flexible. In Sweden we call it aktivitetsbaserat (activity-based). Offices are getting smaller and you don't have your own desk so every day when it comes to work you find a new spot. And the company can have smaller local offices, because a lot of people work from home so they don't need to have the same areas as before. That I believe it's a big trend and a lot of companies have adapted to that. Mostly in bigger cities where it's so expensive to rent offices, the square meter prices are crazy. So if you can, make smaller companies and still get the result because that people don't work on-site anyway, they work two or three days at home anyway, so then the companies get a better economy. Then instead you make those areas super nice. Really nice for that for that for employers to go to so high quality on a smaller area. So when you are on site, you have a really nice work to go to. So that's one one trend that I believe.

Interviewer 1
Yeah. And what about the sustainability side?

Participant 10
During the last 5 to 10 years you see that there is coming more improvements in every section, from the fabric that are in recycled from PET bottles. And how you should think about what you can use again on the products when a product is old. They think about what is bad on a product or what can be reduced? Can you use the base again and give it a new color? You can work with it in other ways, it's the same process as before. Interior designers and architects are working a lot with this, when you have tenders, where you're comparing companies to each other from price or something, we can have new ways to write about sustainability and how you need to have it in your products when you're offered to clients. So there are a lot of new measurements in sustainability. It is still a bit hard for the architects to use because I think there is a need for maybe a new mark to make it easier for the architects, but there comes new ways all the time. We at Input have started a new company called Greenified, it is one of our big steps on sustainability. It's a
portal where we can sell our products all over the country from our showrooms, our customers can sell the products, the customer can buy, the architect can do a reservation on it and use for their projects. The brands we work with can also upload things they had in furniture fair stands and sell them. It's a really nice platform and it's really fun to use because it's a win-win situation for all, for clients for us, for the planet. So it's something we are really proud of. It's so good in every way. It's the future and it's a way to make sustainability easy, because that's always the hardest thing, to make it work. It's easy to say that you want to work with sustainability, but it's harder to make it more effectively or make people use it.

Interviewer 1
Something that what we've heard from architects and also from other suppliers and second-hand sellers, they mention that the budget is what makes people the clients not want to use second-hand because it ends up being more expensive for in the end are the same price as new. So they're not really incentivized to use second-hand because the price for the service nearly evens out the price of newly produced.

Participant 10
Not totally because, the first thing you should have in mind is that product's price from the beginning. The more expensive a product is, the more valuable it will be to change the fabric or something. It's mostly the same price to change fabric on a cheap sofa or expensive sofa. So it's the same thing for the carpenter to do it again. Of course it is a process that can be more expensive, but when the customers have decided that they want to make a project in a more sustainable way they also need to be prepared to the fact that it can be more expensive, and that's the way we need to start thinking about that. It's not always the price, the impact on the planet is also a factor. So in some ways it can be more expensive, but sometimes you can also make it a lot cheaper. And that's the thing about if you're comparing Greenified to a second-hand shop is that the products on Greenified for most times are a little bit more high end products. So it's easier for the other clients to get attention on it and it's easier to see the value than if it's a cheaper product, because it's the lacquer all a wooden table is the same price if it's cheap from the beginning or expensive from the beginning. So it's easier to work with more expensive products and the good quality products have for most time higher value because it's a good product from the beginning. And even if the customers have used it for five years, it's not broken. And yes, maybe need some small retouches to make it perfect again or it can be perfect from the beginning, so you don't have to do anything with it. So most of the things we have sold from Greenified the customer doesn't change fabric or lacquer, they take it as it is because it's so good and they use it directly and then they haven't made a big win economically.
Interviewer 1
Where is the source of the furniture that you take for Greenified?

Participant 10
It can be old furnitures from our showrooms. It can be old furniture from customers, so if they move into a smaller location, they have 100 tables they don't use anymore. Yeah, so that's a common reason. And when some clients have been thinking about getting new furniture, they first try to sell their old furniture on Greenified. And once they can sell it, they can buy new ones, knowing that their old products have been taken care of and not ended up in the landfill.

Interviewer 1
And when you take the products that are used, do you charge for it does sell to you?

Participant 10
No, the clients can choose what price they want to have, then Greenified takes a little bit of it and the delivery is always included. That's also a way to make it easier for the clients to buy it because otherwise they need to have the delivery cost from the beginning and it will take time. You have to make it easier for the clients to use it so you know when you see something on Greenified that's the price you're going to pay. It will be shipped to you for that price as well even if it's in Norway or Denmark or here in Växjö. So that was one of the most important things to make it easy. So the clients can choose what and how much money they want. We see like in Norway, where they have had a lot of projects that they have tenders that they need to have an amount of used furniture in the project, so they can buy the furniture for more than it costed from the beginning, because the clients want to have reused furniture.

Interviewer 1
Is there going to be something similar in Sweden soon?

Participant 10
I don't know. But, it will see that it's going to starting to grow, but mostly at private companies. I haven't seen that the state has something like that. It's harder for them to do tenders with it because it's so complex. Others can make their own decision, for example, that they want 50% of the furniture to be reused. So they can you make up their own rules, their policy. I think brands need to have something on a new mark they can make sure that their product has and to make it easier on tenders.
Interviewer 1
We heard about Möbelfaka. Is that what you use?

Participant 10
Yeah, Möbelfaka is a label that it's including a lot of things. It's about sustainability in the process, but it's more like a quality label. I would like to have sustainability label that just some furniture will qualify for, for using for example, reused aluminium, wood or plastic. Something that needs to be maybe 95% sustainable materials to make that label. Super sustainability label. That will be easier for customer to use, but we'll see how it goes, because a lot has happened during these last five years.

Interviewer 1
Maybe when Hållbar Interiör is done with their certificate for interiors they may have some criteria for it as well.

Participant 10
Yeah. It's a huge business to start. It's a huge market for those who start working with it, I think.

Interviewer 1
Yeah. We've been noticing, it's a lot to consider.

Participant 10
Yes. It's hard with all the rules. There's a tender from the Växjö Kommun Hus two years ago, and they use stainability brand called C-value. Have you heard of it. Before you came, I thought maybe it would be interesting, so I prepared something about them. The name of the man who came up with is Linder. It's about the weight of the product, comparing to how much percent of all the materials that's over 5% of the product, you can say like, filling, wood and metal. So the higher point of reused material you get the product, the better product is for the tender. So if the products have 20% of reused material in it, you can take away 20% of the price of the product for the tender. So that's a good thing. The problem is it's hard to find products. For example, the fabric is the most common thing to have reused and the weight of the fabric isn't that much. But you can check it up and read about it, his nae is Linder. It was an architect from Gothenburg who came up with and made the tender, and all the documents for them. And the choice on how much to take away from the price will be up to the client.
Interviewer 1
Is that to only for government facilities or government organizations?

Participant 10
Yeah, in this case it was in Växjö Kommun. And I believe it's easier for them to set the rules like we need to have sustainability because it's their job to set rules like that. You can't tell a company that can barely pay their employees' salary to make rules that can make the products more expensive. But the government and the state can have that they have the strength.

Interviewer 1
Yeah, and they are also the ones that have the most purchasing power.

Participant 10
Yeah, there's a lot of rules. A lot of the companies we work with are Swedish manufacturers, some produce in Småland, where we are. But because of the EU rules, when it comes to tenders all EU companies need to have the same opportunity. So governmental clients cannot ask specific for furniture from Småland or a specific town, for example. They don't have the right to do that, even though it is better to use local products, or from as close as possible, so you don't have to ship it from far.

Interviewer 1
Is most furniture that you sell made in Sweden or in the Nordics?,

Participant 10
It's both, it depends on the project. We try to use Swedish or from Småland if it's here. It's always more fun to work with companies around us so we try to do it. Sometimes you can't because it's only the price, and the customers always set the rules. So it's hard for us sometimes to do it if we don't have the opportunity, but we try to of course.

Interviewer 1
For Input as a supplier, how does the process of furnishing second-hand changes from the traditional way? How is it different for you?
Participant 10
The hard thing is to find, maybe, the right amount of furniture. If the customer is looking at Greenified and finds two nice sofas they want three. That's the hardest thing, to find the right amount. Maybe it is easier when architect finds for example five nice chairs and two nice sofas, they can say "okay, this is what we've got" and this is what we're going to do, now we can choose the carpet, the lamp, etc. They need to find those products first most of the time.

Interviewer 1
And if the client wants that, let's say, those two sofas, do you also offer a new one just to complete the order?

Participant 10
Yeah, you can do it. That's one way to do it. Or you can find maybe another sofa in another fabric and reupholster. So you find new ways to reuse the products.

Interviewer 2
Talking about repair of furniture, do you outsource the services or is it in-house?

Participant 10
Most manufacturers we work with are open-minded to take furniture from other brands to repaint, reupholster, etc. And some are really good with wood, some with metal, so we have companies that help us with that. We also have a carpenter here in Växjö who is doing upholstery, another one in Vaggeryd, but they cannot take like 500 chairs. So depending on the size of the project we work with to one or the other.

Interviewer 2
If your client needs some furniture to be repaired, do you have a storage to put them on or do you wait your clients to ask if they want to change the color?

Participant 10
It always depends how close you are to the client. Sometimes the clients can just call us and they are just interested on price, or special product, then we don't have that relation with the client. But sometimes when they ask us to redo their office we may say "oh the base of that table looks really good, maybe we only should buy a new table top for that table and all your adjustable tables look good too, or something like
that”. So for most times we are the ones mentioning to the clients, because the client can see sometimes, and that's why they call us from the beginning. It's hard for them to see what can be reused or not.

Interviewer 1
If there's something that you could change in the industry, maybe if there's a gap between the stakeholders (designers, suppliers, clients), is there something that you think could be better?

Participant 10
I think that nearly all the Swedish companies are working a lot to make their products better to change fabric on for the future they have zippers instead of gluing, for example. They are half-covered, like you can only take away the fabric on the pallet by lifting it off. So they are working on it because it's important for them as well, because it is high value for their product to be sustainable. The customer in 10 years, when they spill coffee on it, they can easily take off, without buying a new one or just paying 10% of the price of the product value. So I think they are doing a good job. As I mentioned before, my thought is about a label I was talking about. I would like the government to find a way to give the factories and brands that are working with it, to give them some credit. Because it's very expensive for them as well to work with sustainability, so I think some of them don't get enough recognition for that. And it's of course more expensive to work in wood than it is with metal but sustainably it's better, so you need to give them a little bit of help and some credit.

Interviewer 2
The information we have from suppliers and interior designers is a little. When we interview interior designers, they feel like their clients are not willing to use a second-hand furniture, because they feel like it's not as cheap as they expect. What would you say is the difference between them and your clients?

Participant 10
I believe, as you say, that for most of the time our clients want to make a good business of it. So for most of the times the price is one of the main factors for them, unfortunately. But I respect for that as well because you don't know how much money they got or things like that. That's why I say again, it's up to the government to set rules and help because people will not change if doesn't rule doesn't lead us in the right way. It's just like electric cars or stop using diesel cars. If you do not put an end to it that in 2030 you can drive those cars people who start to change their cars otherwise, we'll just keep going. But I think there's a
way to make a better deal for the clients to save money and buy nice products that are reused. In the cases I have worked with, most of the time we have had the time to make really nice products cheaper.

Interviewer 1
So what are the most frequent products that are sold and the quickest ones to be sold in the platform Greenified?

Participant 10
From my own experience, I say office chairs, because when Corona came and people started to work more at home. And that became an issue that people were sitting on their kitchen chairs five days a week and a pain in their backs and they were sitting on the sofas. So we have a lot of people who are asking for nice quality chairs, but they want don't want to pay 10,000 for it. So now you can find like for 2,000 in Greenified really nice chairs.

Interviewer 1
And do you sell it for private customers as well at Greenified?

Participant 10
Here in Växjö and Input overall, we are working more with companies. But we always help private customers also, but we don't market it. There are also companies that give a budget for the employees to buy a desk and a chair to work from home. So that's a good solution. But I think a lot of desks are sold there.

Interviewer 1
So, we would like to thank you for your time and for receiving us here. We hope that we will develop something that will benefit your company as well. We will make sure to share our reports with you when we are done, and if it sounds interesting, we can collaborate further on this project.

Interviewers
Bye, have a nice day!
Appendix III: Questionnaire

The authors took ethical considerations, with clarity of purpose, confidentiality of responses, and contact information available to the participants. The participants were assured that their personal information would not be disclosed, giving their consent when proceeding. After closing the questionnaire, the authors used appropriate methods to analyze the results. In this appendix, an explanation of the questions and analysis of the results are highlighted.

*Any personal information, such as names and email addresses, has been edited off the screenshot.

*Medium: Google Forms

Questions:
This part of the appendix shows the questions from the start, the logic of the questionnaire, and an explanation of the 6 sections.

*Yes: leads the participant to section 2, to proceed with the questions.
No: leads to section 6, which politely thanks them and tells them they are not the target group of the research, therefore ending the questionnaire.
How many years have you worked in office spaces? *

- 0 - 2
- 2 - 4
- 4 - 6
- 6 or more

How many days a week do you work at the office? *

- Work remotely
- 1 or less
- 2
- 3
- 4
- 5 or more

To you, how important are the furniture in your work environment?

Not important

1 2 3 4 5 Very important

Would you be willing to use second hand furniture in the work environment?

- Yes
- No

*Yes: leads the participant to section 3, to proceed with the questions.
No: leads to section 4, which politely thanks them and ends the questionnaire after a final question.
Check the boxes with the things that would not be accepted in a second hand individual office chair:

- [ ] Having a scratch
- [ ] It is not the latest model
- [ ] Someone I don't know has used it
- [ ] None of the above
- [ ] Other...

Check the boxes with the things that would not be accepted in a second hand chairs in common areas:

- [ ] Having a scratch
- [ ] It is not the latest model
- [ ] Someone I don't know has used it
- [ ] None of the above
- [ ] Other...
Check the boxes with the things that would not be accepted in a second hand individual desks:

- [ ] Having a scratch
- [ ] It is not the latest model
- [ ] Someone I don’t know has used it
- [ ] None of the above
- [ ] Other...

Check the boxes with the things that would not be accepted in a second hand surfaces in common areas:

- [ ] Having a scratch
- [ ] It is not the latest model
- [ ] Someone I don’t know has used it
- [ ] None of the above
- [ ] Other...

*To end the questionnaire, the participants are taken to section 5, which includes the opportunity to contact us for further collaboration.*
Results:

This part contains the answers to the questionnaire. In order to simplify the analysis of results, the answers were combined into categories as needed. In that case, the original results will be shown followed by the simplification.
*With the option to add their own answers, the participants added the same options provided from the start. Also, a few of the options were not selected at all. Therefore, unchosen categories were deleted in the simplification, and double answers were combined into one category. An additional “others” category has been added, including anything with less than 5 answers (IT, facilities, manufacturing, among others).
To you, how important are the furniture in your work environment?

143 responses

Would you be willing to use second-hand furniture in the work environment?

143 responses
Several participants used the option to add their own answers. That resulted in more answers than the number of respondents. Therefore, the number in the graph below does not refer to a percentage, but rather a score of each category. Categories were also kept or created to simplify the answers in general.
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Several participants used the option to add their own answers. That resulted in more answers than the number of respondents. Therefore, the number in the graph below does not refer to a percentage, but rather a score of each category. Categories were also kept or created to simplify the answers in general.
What would make your mind up about the use of second hand furniture in the work environment?

4 responses

I suppose these pieces of furniture are used a whole lot and therefore of less good quality.

Not sure, it depends on which furniture. Chairs are critical for me, as I am sitting most of the time, so I absolutely need a good one. For tables/desks, I guess it would be fine, I wouldn't mind.

Condition

I'm not used to second-hand things so I can't feel comfortable in an office furnished with second-hand furniture.

Would you like to collaborate further as an end-user? You can reach us at the emails: lb223jd@student.lnu.se and sj223ng@student.lnu.se

48 responses
Appendix IV: Market Analysis

Sustainable Options in the Market:

Envivo

Envivo is a subscription furniture company that offers PSS for offices. This company service includes furniture inventory, scheme plans and drawings, furniture reuse and recycling, replacement of furniture and products, and providing sustainable reports. And their clients need to pay monthly for furniture rental service, with the option to replace furniture and products when necessary, such as during expansion or relocation. Envivo also offers a sustainable report for their clients, ensuring they can meet the zero climate footprint vision. Clients who make sustainable choices will receive a bonus and spotlight as an award.

Similar: Nornorm and Beleco

A solution to: clients

Strengths: Lower cost-effectiveness, sustainability contribution and incentives, adaptability.

Website: https://envivo.se/

Input Interiör’s Greenified

Greenified is Input Interiör’s sister company founded in 2015, which is dedicated to selling pre-owned furniture from both Input Interiör’s showrooms and clients.

A solution to: clients

Strengths: Part of a large company like Input Interiör; shipping costs included in the furniture price; offers rental of furniture.

Websites: https://www.inputinterior.se/ + https://greenified.se/
Kinnarps

Kinnarps is a furniture company with a focus on sustainability. In addition to selling sustainable furniture, it also offers services: pre-owned furniture, furniture cleaning, renovation and upcycling, recycling, sustainable suggestions, sustainable transportation, assembling, etc.

Solution to: clients

Strengths: range of sustainability-focused service, strong sustainability focus, brand reputation, expertise in inventory management, and suggested actions.

Website: https://www.kinnarps.se/

RP

Recycling Partner, RP, is one of Sweden’s largest suppliers of pre-owned office furniture. They try to convince the client to use furniture as they are but offer refurbishing when possible. Besides offering a wide range of options, they developed a furniture inventory app, FIA, which allows the client to keep track of their own furniture for future reference.

Solution to: clients

Strengths: Offers refurbishing service; offers rental subscriptions without a binding contract.

Website: https://rp.se/

Rekomo

Founded in 1992, Rekomo is one of the three largest suppliers of pre-owned office furniture in Sweden. They offer rental and leasing options, besides purchasing the client’s old furniture.

Solution to: clients

Strengths: CO2 emissions information on each item; offers rental and leasing options.

Website: https://www.rekomo.se/
Soeco

Soeco is among the largest suppliers of pre-owned office furniture in the country. They count with a number of skilled professionals in-house, allowing them to refurbish any furniture according to the client’s needs. They offer rental and leasing options.

Solution to: clients

Strengths: Full in-house refurbishing staff; they have contracts with the Swedish government and nearly all Swedish municipalities; offers rental and leasing options.

Website: https://www.soeco.se/

Senab

Senab is a furniture supplier company founded in 1975. Senab is also a facilitator that has flexible roles in projects, from helping other interior designers to find furniture, to doing interior design themselves. They also offer refurbishing furniture.

Solution to: clients

Strengths: flexible service; facilitator role, offers rental and leasing options (but are not common).

Website: https://www.senab.com/

Hållbar Interiör + HINT

Hållbar Interiör is a project started by interior design company Indicum, in collaboration with other stakeholders in the office interior design industry, such as Rekomo, RP, Murman, etc. Their goal is to create a certification standard for interiors, as LEED and BREEAM are for construction. HINT is their tool for environmental information to be used by the interior designer. This tool is still under development and is predicted to be launched by the end of 2023.
Solution to: interior designers

Strengths: Many strong names in the industry are collaborators; the first Swedish interior certificate.

Website: https://hallbarinterior.se/

Competitor:

Place2Place

Place2Place is a Swedish digital marketplace that focuses on circular interior design. By digitizing the range, clients can search for circular collections that concatenate multiple ranges, making it easier for them to find and purchase sustainable furniture. And Place2Place is designed to be unbiased, with everyone being able to be both a buyer and seller. They digitally gather available furniture from Rekomo, RP, and Soeco.

A solution to: interior designers

Strengths: digital marketplace; location; offer single check-out, unbiased marketplace.

Limitations: Only pre-owned furniture; few suppliers;

Website: https://place2place.se/
Appendix V: Website Prototype

The link of the website’s prototype:

https://www.figma.com/proto/hPwB0FlPpoP39iLXfMvLBp/Untitled?type=design&node-id=1-527&scaling=min-zoom&page-id=0%3A1&starting-point-node-id=1%3A527&show,proto-sidebar=1
We are your new project facilitator!

Furniture selection in 5 steps!

1. Start your new project
2. Look for the right furniture
3. Select and list the furniture
4. Get your client's confirmation
5. Get points for sustainability

That’s it! The rest we take care of.
To access all our services click the button below.

Join us
About

Bikupa was founded in 2023, with the purpose to cater to the office interior design sector.

Mission:
Our mission is to facilitate the reuse of office furniture for the interior designer.

Vision:
Our vision is to promote sustainability in the office interior design industry.

Values:
Reuse, sustainability and innovation

History
Bikupa was founded in 2023 by Shiyu Jin and Luciana Bohmert, with the purpose to cater to the office interior design sector. The concept began as a master's thesis topic and started to be developed in the second half of 2023.

In 2024, the platform was running as planned, catering for renowned interior designers for their projects. In 2025, the first 100% sustainable furnishing project was done by VMN Project. After only 5 years, Bikupa became the favorite tool in the industry, winning the The Best Interior Design Tool prize of the year, in the Sustainability & Circularity category.

At the moment, we count with 450 employees in the three locations. Our Headquarters are in Malmö, South of Sweden.
Services

What We Do

At BBupa, we offer interior design services, providing a marketplace for used and new office furniture. We help interior designers and clients through the multi-source furnishing process, providing tools and services. With BBupa, you can find used and new office furniture to cater to your own needs.

Our Services

BBupa offers interior designers a time-saving, smart, and convenient solution that makes using furniture from multiple sources a lot simpler.

Marketplaces:

Pre-owned furniture, new furniture, and restoration services. At BBupa, you can find furniture from multiple sources, besides local restoration services to prolong the life of your own furniture.

Sustainability report:

We put together a sustainability report of your selection of furniture. Please reviewed by the client can be added for a sustainability estimate. At the end of a project, the client receives a certificate for their sustainability choices.

Additional services:

Transportation, storage, and assembly of furniture. With BBupa, you don’t have to worry about logistics. We offer a complete solution, from transportation to temporary storage.

Advantages

With our subscription, you get access to our exclusive tips and a consulting service. We are constantly involved in research and development of sustainability in the furnishing solution.
Marketplace New furniture

New furniture popular categories

- Chair: $1,500
- Sofa: $1,800
- Desk: $1,200
- Nightstand: $900
- Side table: $500
- Bookcase: $700
- Cabinet: $1,000
- Chair: $1,200
- Side table: $600
- Table: $1,500
- Bookcase: $800

About
- Modern
- Interior
- Design
- Furniture
- Innovation

Services
- Interior design
- Furniture decoration
- Modern
- Shop

Contact
- Send us a message
- Send us an email
- Call us
- Meet us

Follow us on:
- Instagram
- Facebook
- LinkedIn

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# Contact

Do you have any questions or suggestions? You can reach us through phone or email.

## Contact Formulary

<table>
<thead>
<tr>
<th>Name*</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>Last Name</td>
</tr>
<tr>
<td>Address</td>
<td>Company</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone*</th>
<th>Email*</th>
</tr>
</thead>
<tbody>
<tr>
<td>+46 030 60 60</td>
<td><a href="mailto:name@domain.com">name@domain.com</a></td>
</tr>
<tr>
<td>Phone</td>
<td>Email</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject:</th>
<th>A service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue</td>
<td>A service</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message*</th>
<th>Write a message...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>Write a message...</td>
</tr>
</tbody>
</table>

## General Contact
Email: info@bikupa.se  
Phone: +46 083 34 82

## Bikupa Göteborg
Email: goteborg@bikupa.se  
Phone: +46 312 78 00

## Bikupa Stockholm
Email: stockholm@bikupa.se  
Phone: +46 721 21 66

## Bikupa Malmö
Email: malm@bikupa.se  
Phone: +46 786 26 00
Hello, Smart Eyes Norrköping!

Pending confirmation

- 9123  Plym  298,467kr  189,856kr  06/23/2025
- 9120  Plym  55,657kr  45,650kr  06/20/2025
- 9119  Plym  1,200,000kr  885,000kr  06/18/2025

Project process

1. Signed contract
2. Approve purchase list
3. Sign payment
4. Confirm order
5. Get certification