

# Nordic Working Paper

## **Ecolabel potentials of Sharing Economy Services in the Nordics**

A study into the Potential Framework for Ecolabelling  
of Sharing Based Services in a Circular Economy  
Perspective

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## EXECUTIVE SUMMARY

The Nordic working group on Circular Economy (NCE) and Nordic Swan Ecolabel have set out to investigate the potential for developing (type 1) ecolabels for the fast-growing sharing economy.

Through the study we examine sharing economy sectors, markets and companies and give our recommendations to which types of sharing economy it would be most relevant for ecolabels to work with. A screening model is developed with conclusion on which market and business models ecolabels should focus on in the future. At the same time, we are aware that large changes are constantly occurring within the sharing economy.

From a basis of more 200 companies, 14 markets have been identified and screened, whereas a point model was developed to define and select the markets with greater potential in an ecolabel setting. Interviews and a workshop were made to make a foundation for further analysis of the 3 markets, defined as: *Delivery Services (food/non-food)*, *Mobility* and *Shared Workspaces*.

We recommend that ecolabels work with a medium broad definition of the sharing economy dividing it into the three main groups – gig, peer-to-peer and access economy.

The access economy is the most relevant economy for ecolabels to work with. The business model is usually based on a B2C/B2B model. Here there is full control of the products, initiatives and working conditions relating to the platform, which makes it easier for ecolabels to work with.

The gig economy also has some relevance for ecolabels. There is a potential to develop a more sustainable focus in the market when it comes to more standardized services such as cleaning and delivery.

The peer-to-peer has some or little relevance to ecolabels. The economy is characterized by a very little degree of control with the products. There are also many grey areas when it comes to work conditions, pay and taxes.

In our analysis we have examined many different sectors and business models to find the best suited markets for ecolabels. Here we list the sectors we have analyzed and their convergence with ecolabels.

As noted above the best chances of success are within the access economy, therefore the businesses within the sectors should align with this business model to be suitable for ecolabels.

There are two sectors, which ecolabels should focus on: transport and the entertainment business.

## RESUME

The Nordic working group on Circular Economy (NCE) og Nordic Swan Ecolabel har besluttet sig for at undersøge potentialet for at udvikle ecolabels type 1 for den hurtigt voksende deleøkonomi.

I analysen undersøger vi de deleøkonomiske sektorer, markeder samt virksomheder og giver vores anbefalinger til hvilke former for deleøkonomi, det vil være mest relevant for ecolabels at arbejde med. Vi har udviklet en screening model, der viser, hvilke markeder og forretningsmodeller ecolabels skal fokusere på i fremtiden.

Fra et grundlag på mere end 200 virksomheder er 14 markeder blevet identificeret og screenet, mens en pointmodel blev udviklet til at definere og vælge markeder med større potentiale i en miljømærkeindstilling. Der blev foretaget interviews og en workshop for at skabe grundlaget for yderligere analyse af de 3 markeder, defineret som: Leveringstjenester (mad / ikke-mad), Mobilitet og Fælles Arbejdsområder.

Vi anbefaler, at ecolabels arbejder med en medium bred definition af deleøkonomien, der deler økonomien ind i tre grupper: gig, peer-to-peer og access economy.

Access economy er den mest relevante økonomiske model for ecolabels. Forretningsmodellen bygger i mange tilfælde på en B2C/B2B model. Platformene har ofte fuld kontrol med produkter, initiativer og arbejdsforhold, hvilket gør det lettere for ecolabels at arbejde med.

Gig economy er også i en vis grad relevant for ecolabels. Der er et potentiale i at udvikle et mere bæredygtigt fokus i markedet, når det kommer til standardiserede ydelser som rengøring og udbringning.

Peer-to-peer har mindre relevans for ecolabels på nuværende tidspunkt. Økonomien er karakteriseret ved en meget lille grad af kontrol med produkterne. Der er også mange gråzoner, når det kommer til arbejdsforhold, løn og skatter.

I vores analyse har vi undersøgt mange forskellige sektorer og forretningsmodeller for at finde de mest relevante markeder for ecolabels. Nedenfor ses en liste over de sektorer, vi har analyseret og deres konvergens med ecolabels. Som bemærket ovenfor er den største chance for succes

indenfor access economy, hvorfor det vil være relevant for ecolabels at fokusere på virksomheder indenfor denne kategori.

Der er to sektorer, som ecolabels bør fokusere på: transport og underholdningsbranchen.

## ABBREVIATIONS

AI – Artificial Intelligence

B2B – Business to Business

B2C – Business to Consumer

CE – Circular Economy

C2B– Consumer to Business

C2C – Consumer to Consumer

GPS – Global Positioning System

ICT – Information and Communications Technologies

IOT – Internet of Things

ML – Machine Learning

NFC – Near Field Communication

OEM – Original Equipment Manufacture

P2P – Peer to Peer

QR – Quick Response (code)

# 1. UNDERSTANDING SHARING ECONOMY

The sharing economy is transforming the way we live and conduct our businesses. All over the world people are sharing things with strangers that used to be personal: homes, cars and clothes and more and more business are seeing the potential for new business areas.

This new economy is made possible by the revolution in digital technology that connects people in new and hitherto unseen constellations. The success of the sharing economy seems unstoppable and will most probably grow significantly in the years to come.

## 1.1 THE RISE OF SHARING ECONOMY – WHY CARE?

The sharing economy was coined as a term in mid 2000s when a few businesses started to explore the possibilities for sharing resources. In 2004 Professor Yochai Benkler from Harvard Law School argued in a paper that people should start sharing goods

Six years later Rachel Botsman co-authored the ground-breaking book: What's Mine Is Yours In the book she described the foundations and potentials for "collaborative consumption." The book brought the idea of the sharing economy to the general and only a year later Time Magazine named collaborative consumption one of the "10 ideas that will change the world."

Since then the sharing economy has been an unstoppable success. Only four years after Rachel Botsman's book was published, PwC concluded that the sharing economy had produced \$15 billion in total revenue globally and could produce up to \$335 billion by 2025.

# THE RISE OF SHARING ECONOMY

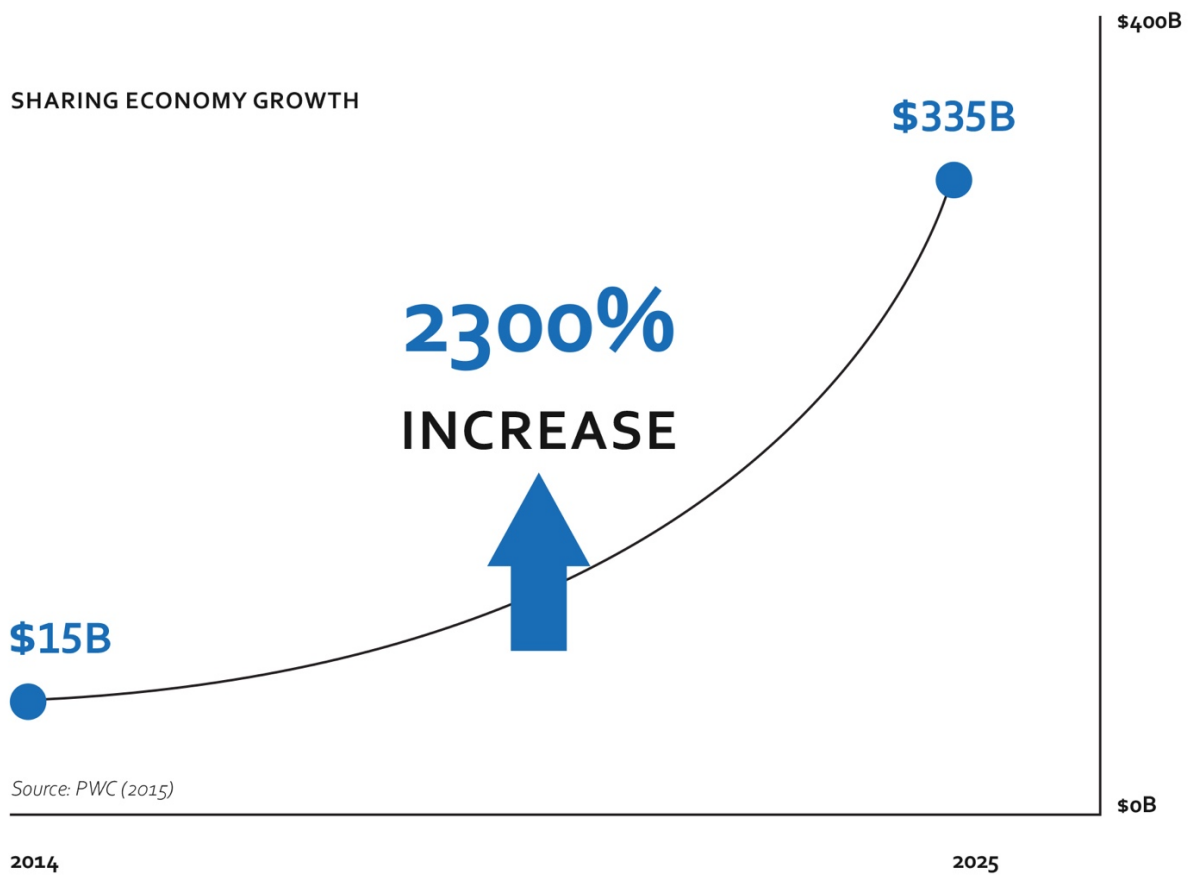


*\*Source: Duverge (2016), Collaborative Consumption: The Explosive Rise of the Sharing Economy*

## 1.1.1 FROM START-UP TO GLOBAL PLAYERS

The significance of the sharing economy is demonstrated by the fact that more than 200 start-ups within the shared economy has received investment for 11,5 billion dollars in the past 15 years. During that time the largest players Uber and Airbnb have grown from start-ups to global companies. On any given day 140.000 people log into Airbnb and book their accommodation. That makes the platform one of the largest providers of holiday accommodation in the world. In 2015 Airbnb was valued at a staggering 24 billion dollars effectively surpassing the renowned Marriott hotel chain, which was then valued at 21 billion dollars. Uber has experienced the same rapid growth. On an average day Uber manages 157 000 rides globally and in 2015 Wall Street Journal concluded that Uber was valued at 50 billion dollars.

## SHARING ECONOMY GROWTH



## **A day in the life of the Nordic sharing economy**

**6.30:** While drinking her morning coffee Susanne swipes through Trendsales to find an evening dress for the upcoming weekend.

**7.30:** On the way to work Susanne starts playing the last chapter of a podcast on **Podimo**.

**9 am:** While at work she uses **SpaceBase** to find a meeting room for the upcoming meeting for the new company project.

**12.30:** In her lunch break Susanne books, an electric scooter from **VOI** to pick up her dry-cleaning before heading back to the office.

**13.45:** There hasn't been time to exercise this week, so Susanne books a yoga class for the next week from **Yogapass**.

**15.45:** Susanne's friend calls to hear about their plans for the weekend. This reminds her to book a live concert from **LOW-FI**.

**16.00:** On her way home Susanne checks in to see what **Too Good To Go** has to offer for dinner

**18.00:** After a long day she opens her laptop to see what's new on her subscribed **HBO Nordic** streaming service.

**19.30:** While watching **YouTube**, she is reminded of the family gathering in Aarhus next month. She posts a request on **Gomore**.

**20.00:** A message from **DBA** pops up about a home décor she wants to buy.

**20.15:** She looks up **DAO** to calculate the delivery costs and locate the delivery location

**22.00:** Before going to bed, Susanne makes sure her rented bike from **Swapfiets** is ready to pick up before going to work.

*\* Inspired by: PwC (2015), Sharing or paring? Growth of the sharing economy*

### 1.1.2 THE SHARING ECONOMY IS STILL GROWING

Since the shared economy is relatively new it is hard to assess the size of the market. A study by PwC analyzes companies within six markets: c2c lending and community financing, online distance work, c2c home sharing, car sharing, online music and video streaming. The five markets had total sales revenue of around 15 billion dollars in 2013. That was 5.8% of their respective overall markets. Since we are now writing 2020 it is important to note that the same study predicted that the revenue in 2025 would grow 22-fold, to 335 billion dollars. If the predictions are true, the companies will command half of the five markets in the study just five years from now.

### 1.1.3 THE ROLE OF GOVERNMENT?

The rise of this new economy with its new multinational players has happened at such a speed that the global and local regulatory environment has found itself unprepared for the challenges and issues posed by the new economy. The status quo is challenged, and time long institutions are under pressure. How the states will deal with the issues at hand such as labour rights are very uncertain, but it is unlikely that even strong regulation can maintain the past structures.

### 1.1.4 A SUCCESSFUL MODEL

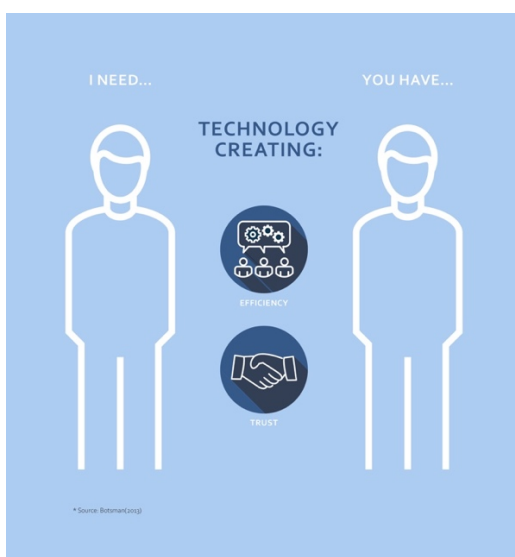
One of the main reasons for the success can be found in the companies' cost structure. The companies enter a local market and bring with them the advantages of being a global player: Take a traditional taxi company. It typically operates in a single town where its management and dispatching center is based. By comparison Uber uses the same platform in almost 300 cities with only limited staff in each city. They do not own any vehicles and do not have buy cars or invest in maintenance. Uber can also use their global scale to optimize their tax, so they often pay much less than the local company. That gives them a competitive edge, which makes it possible to provide the same services cheaper. The c2c business model also makes it possible to scale up and enter new markets with minimal costs. They just need to make their platform available in the new market and employ a few employees and then they are good to go.

## 1.2 DEFINING SHARING ECONOMY

The sharing economy has many definitions. Some call it the gig economy, others have coined the term peer economy, while others use the term the collaborative economy, the collaborative consumption or crowd-funded economy. So far, we have used the term the sharing economy. But the fact is that the many different definitions reveal a subtle difference in the way the businesses are conducted.

The author Rachel Botsman has argued that we lack a common definition of sharing economy. She suggests, we will get a better understanding of the subject if we break the term into related but distinct spheres. But the overall problem is that we lack a mutual understanding of the term, which makes it very hard to define. In the following pages we will try to define the various spheres of the sharing economy.

The definition of sharing as 'consumers granting each other temporary access to their underutilized physical assets ('idle capacity'), possibly for money', could also be said of people lending each other a book in the 18th century. It leaves out the digital platform. Sharing between family, friends and neighbours is as old as history itself. The sharing happens between trusted people who have emotional ties or have interacted in the past and is often done for free by social obligation. Back then lending or renting to strangers was not common since you had no knowledge of whether the stranger could be trusted. The online platforms now provide this security. They create trust between strangers thereby making it possible to engage in sharing. The digital platforms provide the trust through a public review system and micro-insurance.



The digital platform also has a matching service where geographical data and user information are matched, often with the help of an algorithm. After a match is made the platform ensures that contract and payment is carried out almost fully automatically. This avoids the painful haggling over price and minimize the potential for conflict between provider and user. The platform provides the information and communications technology (ICT) infrastructure to facilitate sharing, while the users use their own physical goods. Most platforms charge a fee for every transaction, which is the key to their financial success.

If we see the sharing economy as consumers who grant each other temporary access to their underutilized physical assets, we can break it down to 3 key features:

- The sharing economy is about peer-to-peer exchange or in this context, *consumer-to-consumer* interaction.

Consumer-to-consumer (c2c) interaction. Consumers offer others access to their consumption goods and in fact acts as a small rental agency. The term for consumer also acting as producers is a prosumer. When the c2c rental services are rendered through the market in return of money, economists speak of *peer-to-peer economy*. In this market the platform helps match supply and demand and offers services such as a ratings, insurances and automatic payment.

- The sharing economy involves temporary *access* either by borrowing or renting.

Access rather than ownership. The sharing economy is also seen as an *access economy*, where access is more important than ownership. For instance, the number of young people investing in a car has declined as the alternatives to ownerships has flourished. Car drivers have access to platforms such as Green Mobility, Letsgo, TADAA! or ride-hailing services (Uber, Lyft, Didi).

- The sharing economy provides a better use of otherwise under-utilized physical assets.

In this case, the sharing economy is part of the *circular economy*, in the sense that it is a business model that uses resources efficiently and ultimately decrease the demand for goods.

### 1.2.1 DEFINITIONS OF SHARING ECONOMY

**Belk (2014a, 1597):**

He distinguishes 'true' and 'pseudo-sharing.' 'True sharing' as entailing temporary access rather than ownership, no fees or compensation, and use of digital platforms. The majority of commercial platforms included in 'sharing economy' do not belong there.

**Frenken et al. (2015, 245):**

The 'sharing economy' means when 'consumers (or firms) granting each other temporary access to their under-utilized physical assets (idle capacity), possibly for money.'

**OECD (2015, 53):**

Online platforms specialised in 'matching demand and supply in specific markets, enabling peer-to-peer (p2p) sales and rentals.' It identifies three types: (a) p2p selling (b) p2p sharing; and (c) crowdsourcing.

**PricewaterhouseCoopers (2015, 3):**

The 'sharing economy uses digital platforms to allow customers to have access to, rather than ownership of, tangible and intangible assets.'

**Rinne (2017):**

The focus is on the sharing of underutilised assets, monetised or not, in ways that improve efficiency, sustainability and community

**Schor & Fitzmaurice (2015):**

"(...) peer to peer sharing of access to underutilized goods and services, which prioritizes utilization and accessibility over ownership."

**Schor (2016):**

"Sharing economy activities fall into four broad categories: recirculation of goods, increased utilization of durable assets, exchange of services, and sharing of productive assets."

*Martin, Upham, & Budd (2015):*

"(...) group of online platforms facilitating peer-to-peer forms of economic activity."

**Barnes & Mattsson (2016):**

"The use of online market places and social networking technologies to facilitate peer-to-peer sharing of resources (such as space, money, goods, skills and services) between individuals, who may be both suppliers and consumers."

**Hamari Sjöklint, & Ukonen (2016):**

"(...) the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services."

**European Commission (2016):**

"... "collaborative economy" refers to business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals."

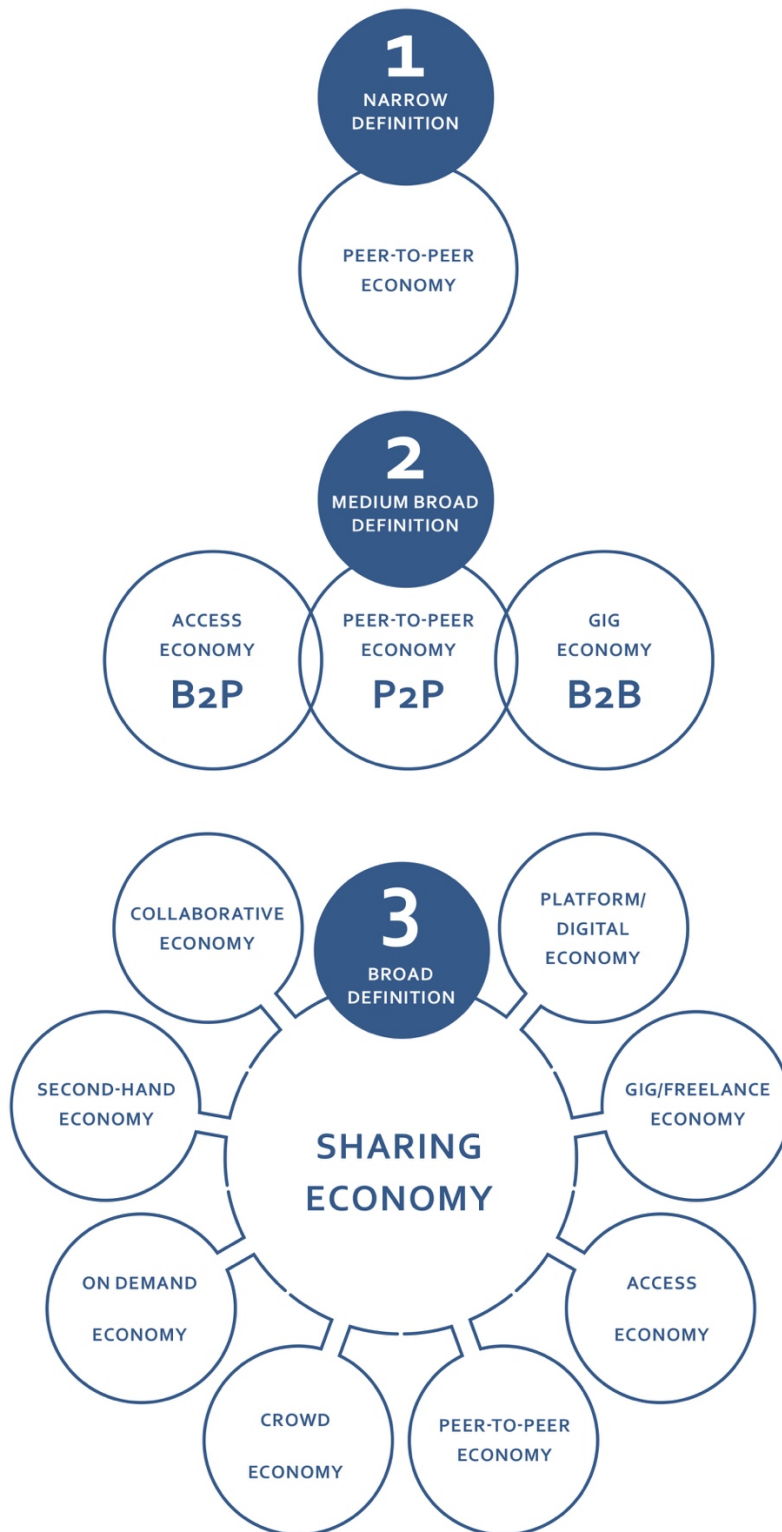
**Muñoz & Cohen (2017):**

"a socioeconomic system enabling an intermediated set of exchanges of goods and services between individuals and organizations which aim to increase efficiency and optimization of under-utilized resources in society."

**Frenken & Schor (2017):**

"(...) consumers granting each other temporary access to under-utilized physical assets ("idle capacity"), possibly for money."

## 1.2.2 OVERVIEW OF SHARING ECONOMY AND LEVELS OF BROADNESS IN DEFINITION



### 1.2.3 ELEMENTS OF DEFINITIONS

#### DIGITAL ECONOMY

Economic activity with help of mobile technology and the internet of things. Anything powered by digital technologies such as everyday online connections among people, businesses, devices, machines, data, and processes.

#### PLATFORM ECONOMY

Similar to the digital economy companies are creating online structures that enable a wide range of human activities.

#### GIG ECONOMY

Gig economy means the temporary, project-based and flexible jobs, such as when companies hire independent contractors and freelancers instead of full-time employees.

#### FREELANCE ECONOMY

Similar to the gig economy, freelance economy means the workforce participation and income generation by freelancers or independent workers.

#### ON-DEMAND SERVICES AND ON-DEMAND ECONOMY

On-demand economy focuses on 'on-demand' needs- the immediate access-based goods and services. On-demand service platforms consumers can deliver personal services to each other.

#### PRODUCT-SERVICE SYSTEMS

(Product-Service Models)

With a shift toward less resource-based consumption culture where consumers favour renting, bartering, and exchange, companies rent out their good to customers for temporary use, online and offline. A good example is a firm from whom car can be rented for short term. Similar to the Access Economy.

## PEER ECONOMY

The business between customer and customer without any third party where they can buy, sell and produce products and services from each other.

## ACCESS ECONOMY

(access-based consumption)

Offers customers access to products or services when they want and for a short time basis. Also, when purchasers can't afford to own or do not want to own the product.

## SECOND HAND PLATFORMS

On second-hand platforms, customers can sell or give away their used goods to other customers. The most typical secondhand platform is eBay but the secondhand clothes shops are also quite popular.

## CROWD ECONOMY

Crowd economy focuses on the 'crowd' and refers to crowdsourcing and crowdfunding. Platforms like Uber and Airbnb draw on the resources of the crowd to serve the needs of the crowd.

## COLLABORATIVE CONSUMPTION

Collaborative consumption 'highlights the importance of systems of exchange and the power of social network effects. It involves collaborative forms of consumption such as production, finance and learning and sharing information.

## SHARING ECONOMY

Refers to the sharing activity of underutilized assets with the help of it-based technology, for instance sharing, bartering, lending, trading, gifting, swapping, etc.). Sharing economy and collaborative consumption, have similarities in their definitions.

\* Source: Görög (2018), *The Definitions of Sharing Economy: A Systematic Literature Review*

#### 1.2.4 DRIVERS BEHIND SHARING ECONOMY

There are four main drivers behind the success of the shared economy.

First and foremost is the **technological innovation**. Without it, we would not be able to share with strangers on a global scale. The social networks, the online identity services, the payments systems and the mobile devices themselves creates the basis and trust for the sharing to work. The online platform provides a system where the transactions can take place, matches the need in time and match supply with demand. The technology makes the transactions swift, so you can drive a car just minutes after you made the demand.

Another game changer is the **shift in values and consumer needs**. All over the world people are looking for experiences rather than ownership. They want to connect with people rather than companies for authentic experiences. You are what you experience, not what you own. A good example is city tours where local people take you to the best eating places in Rome on your holiday. The decision to go for this guided tour is heavily influenced by the online reviews previous tourists have made. Here you rely on feedback given by previous users in your decision-making process.

The third driver is **globalization**. The move from countryside to the cities means that more and more people live closer together than ever before. Simultaneously, it has become possible to buy goods from all over the world. As a consumer you have infinite geographical reach. You also have the potential to become your own producer acting on a global scale, offering city tours of Copenhagen to Japanese tourist, inviting strangers to dine with you in your living room or taking people on for a ride with Gomore from Copenhagen to Aarhus.

The fourth driver is the **environmental pressures**. The rise in global consumption, the growth of the middleclass and the consequent drain on resources has made it clear that we need to use our goods more efficiently. Research by the European Commission shows that almost 75 % of a billion cars globally are used by one person only. If we can find a better way to distribute the use of cars, the environment would benefit as well as the economy of the individual households.

*\* Source: PwC (2015), Sharing or paring? Growth of the sharing economy*

## 1.3 THE CHANGES SEEN FROM A BUSINESS PERSPECTIVE

### 1.3.1 NEW MARKET SEGMENTS

Traditionally markets are divided in Business to Business (B2B) or Business to Consumer (B2C) market segments. The technological innovation has changed all that. Now we also have Consumer to Consumer (C2C) and Consumer to Business (C2B) market segments.



### 1.3.2 THE DISRUPTION OF INDUSTRIES

The new way of making business has disrupted many markets and has had huge consequences on several companies' earnings. It has also opened a whole new field of start-ups, which are continuously looking for ways to challenge the established companies with new ideas and mind sets.

### 1.3.2 THE ROLE OF THE NEW CONSUMER

The role of the consumer has also changed. Consumers are more actively engaged in the products that they buy to a such extent that they sometimes act as co-creators, collaborators, producers, supplier of services and so forth. This change has taken governments and unions by surprise. How about taxation when you rent out tools, rooms and cars? How about wages when private individuals are suddenly acting as micro businesses and freelancers? The problems are manifold, not least in the Nordic countries where high wages and high taxation are the key elements in the success of the welfare state.

20<sup>th</sup> CENTURY  
Industrial Economy

PASSIVE CONSUMERS

*\*Source: Botsman (2013), The-sharing-economy  
lacks-a-shared-definition*

21<sup>st</sup> CENTURY  
Collaborative Economy

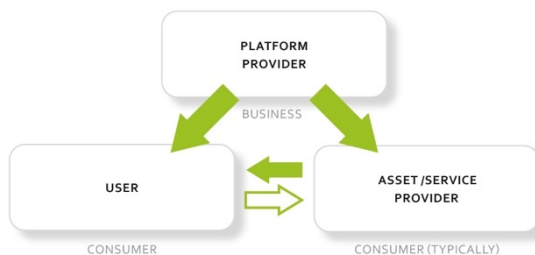
CREATORS  
COLLABORATORS  
FINANCIERS  
PRODUCERS  
PROVIDERS

### 1.3.3 NEW BUSINESS MODELS

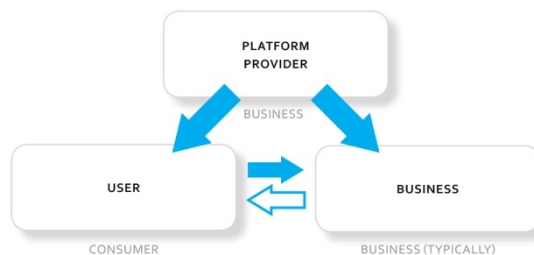
All over the world traditional businesses are beginning to see the benefits of the shared economy and move into the new market for a piece of the action. Car manufacturers such as BMW and Ford have begun offering car rentals to users for a short period of time. In this **B2C** model the supply side and the digital platform is provided by the same supplier.

In the shared economy **C2C** and **B2C** is the most common business models. But you also find businesses operating in the **C2B** or **B2B** market. For example, can consumers invest in solar panels and sell their excess electricity to the grid operator. In the financial sector you also find instances of crowdfunding, where private individuals use platforms to invest in companies or ideas. There are also an impressive amount of **B2B** services – see in the figure below.

CONSUMER-TO-CONSUMER (C2C) MODEL



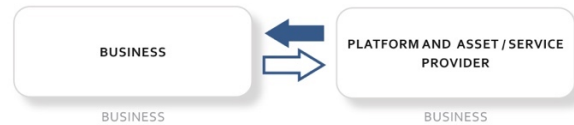
CONSUMER-TO-BUSINESS (C2B) MODEL



BUSINESS-TO-CONSUMER (B2C) MODEL



BUSINESS-TO-BUSINESS (B2B) MODEL



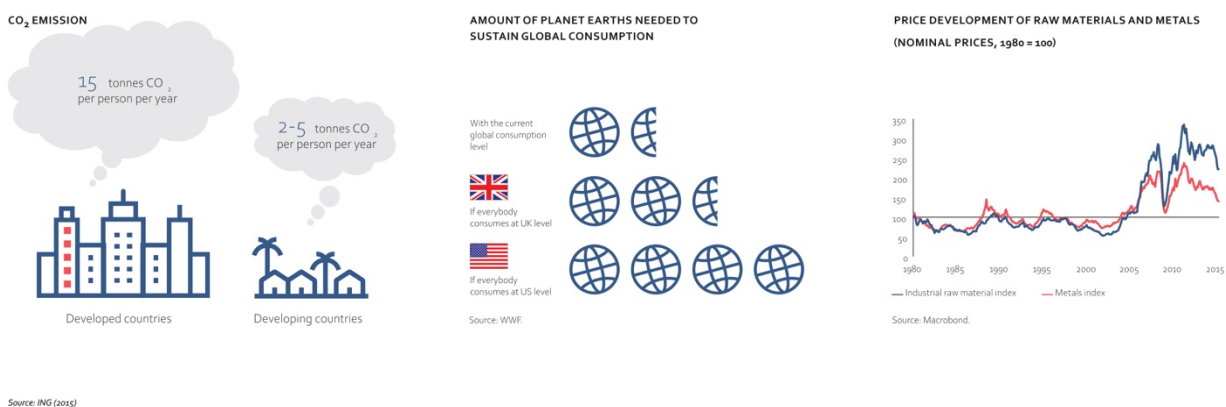
*\* Source :inspired by PwC (2015), Sharing or paring? Growth of the sharing economy*

## 1.4 SHARING ECONOMY IN A CIRCULAR ECONOMY – WHAT DO WE SEE?

In the sharing economy people can gain temporary access to resources or share underutilized resources with others. This sharing reduces the need for ownership and leads to a more efficient use of resources. More efficient use of resources can lead to a more sustainable lifestyle and less drain on the world's resources in general.

### 1.4.1 WHY CIRCULAR ECONOMY

The circular economy is a response to the rising consumption worldwide and with the growth of the middle class the rise in CO<sub>2</sub> emissions, threaten people's livelihood all over the world. The circular economy is a shift away from the take, make and waste of production to a reduce, reuse and recycle mentality. It opens new commercial opportunities and business innovation.



The linear economy is very different from the circular economy in several aspects. In the linear economy nature is seen as a resource that should be utilized to its maximum often in a harmful way, whereas the circular economy is built on a general respect for nature. Here there is a desire to do more with the resources of the nature can produce. In the linear production is built on a take, make and waste mentality. In contrast, the circular economy is built on the principles of reduce, reuse and recycle to keep the materials in circulation for as long as possible.

The lifetime and terms of ownership are also very different in the two economies. In the linear economy people buy goods and discard them after end use. The products often become obsolete, when they are still in use. In the circular economy the life of a product is extended in new products or application as the goods serve as valuable input for other products. Also, the ownership is not a

key element in the economy. Instead accessibility, performance and sharing are important features.

In the linear economy money is the dominant value and the price is set by the producing companies, which develop their goods in isolation from other companies. In the circular economy the business is based on multiple values, the price is charged for the use of the product and companies work together along the supply chain. In the circular economy risks and benefits are shared upstream and downstream.

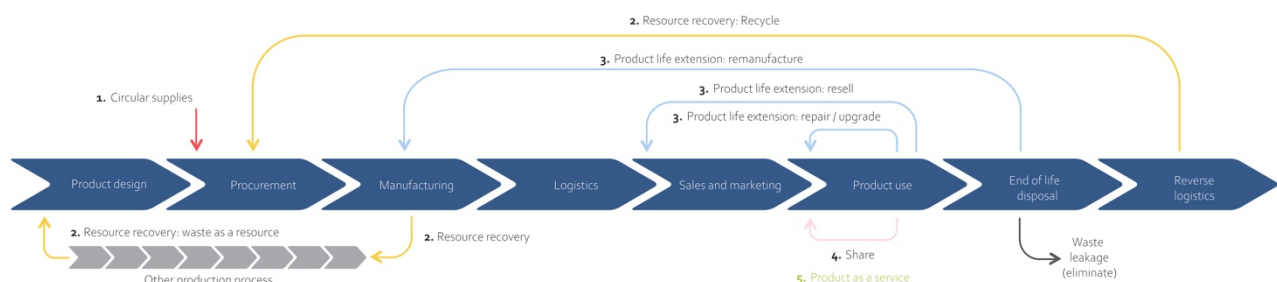
#### 1.4.2 THE PRINCIPLES AND BUSINESS MODELS GOVERNING THE CIRCULAR ECONOMY

The circular economy is driven by 3 principles and 5 business models, which is outlined below.

##### PRINCIPLES:

1. Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows.
2. Optimize resource yields by circulating products, components and materials in use at the highest utility in both technical and biological cycles.
3. Foster system effectiveness by revealing and designing out negative externalities.

##### BUSINESS MODELS:



Source: ING (2015)

##### 1. Circular supplies

This business model relies on fully renewable, recyclable or biodegradable resources to keep the production circular. Companies must discard all linear resource approaches, phase out the use of scarce resources, cut waste and remove inefficiencies.

##### 2. Resource recovery

This model takes the value from a product at the end of its life cycle and use it a new way. Here the focus is on return flows and innovative recycling and upcycling services.

### **3. Product life extension**

In this business model focus is on extending the lifecycle of products and assets. Values are maintained or improved by repairing, upgrading, remanufacturing or the remarketing of products.

### **4. Sharing platforms**

This model relies on platforms that allows individuals or organizations to share an excess capacity or an underutilization of goods. The model increases productivity and user value creation.

### **5. Product as a service**

In this business model consumers have an alternative to ownership. Instead of owning a product, they lease it or pay when they use it. Here the product is seen as a service. The model promotes longevity, reusability and sharing, because the manufacturer gets a larger revenue from extending the life span of the product.

#### **1.4.3 THE LINK BETWEEN SHARING AND CIRCULAR ECONOMY**

Sharing economy is knit closely to the circular economy and in many ways helps to promote it. It is seen in business model 4 and 5 illustrated in the figure above and explained earlier in the text.

In business model 4 the circular economy works as a peer-to-peer economy and collaborative economy. In business model 5 the circular economy is seen as an access economy.

As seen in the model above the business model 4 the circular economy works as a peer-to-peer economy and collaborative economy. In business model 5 the circular economy is seen as an access.

Sharing economy is often linked to the consumers role in the value chain. But service and sharing platforms can be applied at any level in the supply chain. Companies working with sharing and circular economy are characterized by:

- They can be found at all levels of the value chain and optimize unutilized resources thereby driving sustainable development forward.
- Many define themselves as sustainable in their purpose and business.
- They aim at using resources more efficiently for a sustainable goal and wishes to transform the industry.
- They work with all segments of business: c2c, c2b, b2c and b2b
- The primary goal of several platforms is to drive the circular economy forward.
- Several platforms only exist digitally and have no physical products to sell.
- Many of the platforms activate the consumers in new ways and work with new business segments.
- The platforms are engaged in solving a wide range of sustainable issues from using less energy, reducing pollution and promoting organic farming to social issues, cultural affairs and financial services.

#### 1.4.4 HOW WOULD A CIRCULAR SHARING ECONOMY SERVICE LOOK LIKE – BASED ON ACCESS ECONOMY?

Questions arise when we want to adopt circular models for sharing services to an environmentally preferable offer.

How would it change the general sharing-based business operation today? This is especially relevant for Ecolabels.

What are the relevant issues to address? Where could Ecolabel push for positive environmental effects and drive change forward? To elaborate on these questions, we've made a generic vision for how a circular sharing service of e-city bikes could look like. In the vision, we use the principles of the five circular business models to focus on potential areas of interest.

- The e-bikes is offered as a service, where subscribers can either rent the bike for e.g. x hours or pay by the minute for its use. Drop-off locations are geofenced and a full warranty is covered by the pay-per-use model used.
- All the energy used in manufacturing, transport and operating the service (charging/platforms) is based on renewable sources. Charging is either provided through an overnight pick-up service or hooked up docking stations.

- E-bikes would be manufactured from recyclable materials like aluminium and steel or rapid renewable materials like bamboo. It would be free from harmful substances such as electronic parts, paints, tires, handlebars etc. At the same time all bikes would be designed for durability, disassembly and repair.
- The e-bikes will be located and unlocked (Scan/NFC/code etc.) through a dedicated app or different rideshare/public mobility apps. The GPS in the bike will tell about the usage/riding pattern (e.g. travel distances, time of use, pickup/drop-off geotags), enabling efficient service logistics, hot-spot mapping, peak hour analysis etc. In this way the business will be constantly optimizing the geographical penetration of available e-bikes, so the use of each bike is as efficient as possible covering as many subscribers as possible – also in the wake of high and low seasons.
- All bikes in operation, will be regularly checked through a maintenance system and taken in for repairs and upgrades of parts when needed. The reuse of spare parts from worn out bikes to repair others.
- Worn out or broken parts from discarded bikes, would be first disassembled into material categories and then recycled best way possible, including the electronic parts and battery, regaining highest possible value at a specialized service provider of reversed logistics.

The vision demonstrates how a circular service for e-bikes certified by ecolabel could look like.

The question is then whether similar city-bike services could be encouraged to address the full life cycle of the bikes and be certified by ecolabel. Issues to address could be:

- Renewable energy use in production, logistics, charging infrastructure and platform hosting. This must be considered a challenge to the companies because of the globalization of supply chains, the current adoption of environmentally friendly vehicles (logistics, servicing, pick-up systems), grid charging and transparency of sustainable cloud/data services. Ways to mitigate and offset the GHG impact should be addressed all the way around.
- A service today might only operate with cheap manufactured e-bikes, not sharing the same design elements as described above. We know from our qualitative interviews that battery quality and recycling is a great issue and an international supply chain makes it

difficult to acquire new designs, technologies, higher quality and ensure supplier compliance up the chain.

- The service might be offered effectively on a platform to many subscribers, but instead of working the metrics of the services supply and demand side, the business just dumps enough cheap e-bikes on the streets to be omnipresent on the market and outcompete its peers. This business strategy has been seen many times in recent years with e.g. e-scooters service in many cities across the globe. (Techtopia, 2018, Transformator, 2019).
- Worn out bikes and batteries would just be disposed of in traditional linear fashion, probably as metal scrap and general battery handling. Productive value retention is therefore a question to address (possibilities for reuse, repair/refurbishment, optimal recycling).

Environmental life cycle gains from circular elements of the business model and the inputs/outputs of resources used to deliver the service, must be measured up against a baseline for how the sharing services are run today.

#### 1.4.5. CIRCULAR ECONOMY AND NORDIC SWAN ECOLABEL

Nordic Swan Ecolabel has developed principles for how the Swan and Flower labels can promote the circular economy through the ecolabel schemes for products and services. These categories could be used to evaluate how a platform service could have a positive impact on the lifecycle of the physical assets used to deliver a service and the overall environmental performance. In this evaluation, energy considerations are added on top of the mix.



To evaluate on these life cycles stages defined by Nordic Swan Ecolabel and from a circular economy perspective, we have tried to define some overall areas to focus in on in a potential criteria development for a given sharing-based market. The described areas should be viewed as somewhat generic, why each one naturally must be specified further in a real criteria development of any specific market:

<b>Life Cycle Stages (NE definition)</b>	<b>Areas of Focus for Criteria Development for Sharing-Based Services</b>
<b>Energy</b>	<p>Requirement on renewable/efficient energy use in production, logistics and usage.</p> <p>Green data storage solutions to be included, possibly indirectly through compensation projects or renewable credit procurement.</p>
<b>Raw materials</b>	<p>Minimizing resource uptake for physical product manufacturing compared with regular production for traditional (linear) markets.</p> <p>Supply chain management for acquiring recyclable, recycled or renewable/sustainable raw materials for production (Circular Supply)</p>
<b>Design</b>	<p>Procured or developed with circular design/eco-design features such as durability, disassembly, repairability, recycling, upgradeability and material health in focus</p>

<b>Production/ Remanufacturing</b>	<p>Code of conduct for suppliers on recycled use of materials and remanufacturing parts/components, possibly collected through own channels.</p> <p>Strict restrictions on substance use.</p>
<b>Distribution</b>	<p>Logistics based on sustainable modes of transportation and packaging</p> <p>Use of reusable/recyclable packaging options</p>
<b>Consumption, use and reuse</b>	<p>Delivered through or as a sustainable mode of transportation.</p> <p>Big data and AI/ML driven services for continuously usage optimization of assets through the shared platform (with multiple subscribers/users) - and by that the integration of IOT and other data collection technologies/systems.</p> <p>Service to include maintenance, repairs, upgrades, reuse/refurbishment/repurposing of physical assets.</p> <p>The use of otherwise ecolabel of traditionally single use/fast consumer products when delivering the service (e.g. ecolabel cleaning agents, textiles, reusable/recyclable packaging etc.)</p>
<b>Collection</b>	<p>Ensuring the best way possible to collect assets after their distributed use or end-of-life:</p> <p>If full control of the physical asset is maintained by keeping full ownership (access-based models), then collection should be ingrained in the asset recovery and take-back logistics.</p> <p>If partly or limited control of the physical assets are in place; voucher-, deposit-refund, buy-back-, take-back systems or</p>

	geo-controlled environments for the service as ways to ensure optimal collection and possibly reuse (as part of the business model)
<b>Recycling</b>	<p>Partnerships with service providers of reverse logistics or in-house handling of physical assets, to ensure refurbishment, proper recycling or remanufacturing of components.</p> <p>Contract management as a mean to ensure compliance e.g. with efficiency standards and downstream channels at recyclers in the value chain.</p> <p>Ensuring proper sorting for optimal recycling of single-use/fast-use consumer products and packaging, through either public or private channels, should include guidance and possibly incentives to do so.</p>

#### 1.4.6 POSSIBLE ENVIRONMENTAL ISSUES AROUND THE EFFECT OF SHARING ECONOMY

Shared based service models based on circular economy are often challenged by some key elements, which is relevant to considered when we want to develop eco-effective ecolabelling certification schemes. These issues are:

**Savings and Spending** - Money saved/gained in one part of the economy usually flows to other areas of consumption, which often can have an environmental impact and evolve further uptake of resources. An example is Airbnb, which has given people all over the world an opportunity to travel more. The new supply of accommodation opportunities disrupts prices locally and diverts money to private hands. This new income can be spent on consuming other products, buying bigger/attractive homes, speculating in high rent profits, which undermines

the local housing market. Or simply, travel more than before with more emissions to follow. You can therefore question the social and environmental gains from Airbnb.

**Added Versus Minimized Consumption** - It is also possible to argue that platform services in some cases brings more consumption. As an example, a car-based sharing service platform might make car-rides available to people who would otherwise have chosen to use their bike or public modes of transportation. But this argument should be measured against the efficiency gain from a car-sharing service, which minimize regular car-ownerships. This discussion will likely increase when autonomous cars will enter the market over the next decades. Increased focus on eco-design and EV adoption would on the other hand, likely shield some part of the issue.

**Linear Design** – many sharing services are based on sharing physical products or facilities, which are not fully designed for circularity; durability, disassembly, recycling etc. This impacts the timeframe from in which a product stays in functional use before it is replaced. This increases the cycles of new products in the economy. An example is e-scooters, which are manufactured for recreational use and not designed to mass usage, vandalism in public spaces or to be recycled in the end.

These critical points for how it might operate in a sharing economy show that services cannot always be labelled resource-saving or environmentally good.

This is important to address when we develop a framework for sharing economy that can be certified by ecolabel.

We need to make sure that the services will have an actual positive environmental impact. But that also gives Ecolabels a much relevant legitimacy if we can act as an agent of eco-efficient verification of sharing services. Ecolabel can stand as a guarantee for that the businesses certified have minimized their environmental impact. Data on e.g. service cycles, product through-put, use cycles, maintenance and end-of-life management are therefore key elements to analyze and use as documentation for the environmental gain of a specific service and market player.

## 1.5 HOW THE NORDIC SWAN ECOLABEL CAN PROMOTE CIRCULARITY IN THE SHARING ECONOMY

In this chapter, we outline opportunities and barriers for Nordic Swan Ecolabel to work in the shared economy. We also give our assessment of the life cycle elements ecolabels should introduce to the market to promote a certification of the shared economy.

### 1.5.1 SIMILARITIES AND DIFFERENCES BETWEEN THE SHARED ECONOMY AND THE NORDIC SWAN ECOLABEL

The core purpose for type 1 Ecolabels are to "*make environmental preferable products easy to identify and select for the consumer*". The Nordic Swan Ecolabel is commonly known as a certificate of physical consumer goods. But ecolabels also certify several services, which are closely linked to the shared economy. Examples of these services include:

**Hotels, Restaurant and Conferences (Nordic Swan Ecolabel):** The focus is on reduced consumption of energy and water, minimizing hazardous chemicals for washing and cleaning, sorting of waste, documented environmental management system and transport solutions with environmental considerations.

**Car-sharing (Der Blaue Engel)** The German Ecolabel Der Blaue Engel on car-sharing operators focuses on easing environmental burden caused by transport system which includes saving space on the roads, encouragement to select multimodal transport solutions, to reduce air pollution caused by traffic- particularly in inner cities, enabling people to live without owning their own car and thus preserves resources and reduction in emissions that have an impact on the climate.

**Mobility and delivery services (Brä Miljöval)** – Naturskyddsforeningen (Swedish Conservation Society) have made several certifications of public transport and mobility services, like trains, car sharing, delivery, freight, bike-sharing etc.

**Financing (Nordic Swan Ecolabel):** Focus is on investment funds where investments help to influence companies in a more sustainable direction. The Swan label attaches great importance

to investing in companies that are already good at the environment or who are working purposefully to become so.

The Nordic Swan Ecolabel and the sharing economy are knit closely to the circular economy and in many ways helps to promote it. The circular mindset/approaches in businesses working with ecolabel and companies working in the shared economy are in many ways similar. But there are also great differences. This shows that there both opportunities and barriers for ecolabels to enter the sharing economy.

**In the figure below we have listed differences and similarities between the sharing economy companies and Nordic Swan Ecolabel Companies**

	<b>Nordic Swan ecolabeled companies today</b>	<b>Sharing economy companies from a circular perspective</b>
<b>Circular Value chain focus</b>	Primarily focus on companies working with circular supply and services as the primary business model - involving 6 drivers for a closed circle.	Focus on companies at all levels of the value chain and circular business models: Supply, recovery, lifetime extension, sharing and service.
<b>Business segment</b>	Focus on B2C and B2B businesses.	Focus on B2B, B2C, C2B and C2C
<b>Trust</b>	Trust is generated in a traditional relationship with B2C or B2B segments.	Trust is generated on many different levels and technologies including ratings, blockchains etc.

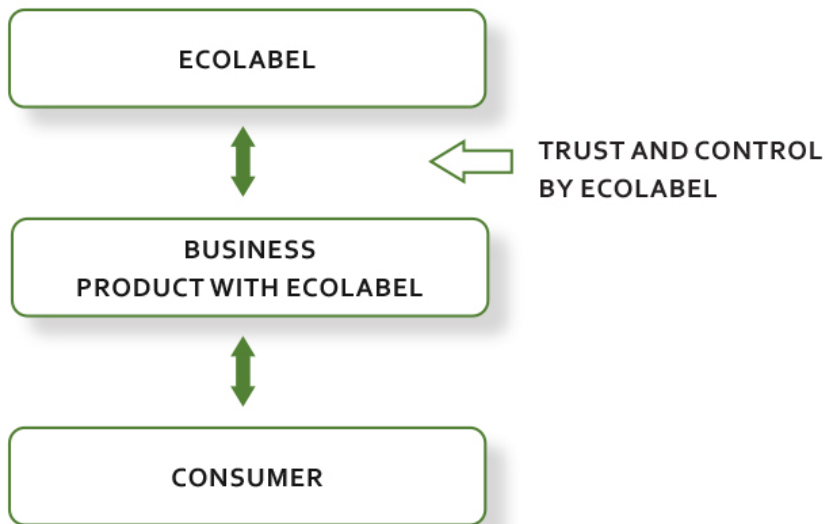
<b>Consumer</b>	The consumer is defined as passive.	The consumer can be both passive and actively creating.
<b>Product</b>	The product is usually physical or services.	Primarily digital products.
<b>Sustainability</b>	The scope is the environmental consequences of producing and using products and services. Social aspects are included for areas where there are problems with working environment aspects.	The scope is different from company to company. The concept of sustainability can be understood widely and focus on different aspects of sustainability. The social aspect is just as important as the environmental.
<b>Sustainable assessment level</b>	Mainly on product and product service level.	Possibilities for assessment on product, business, and consumer level. Digital solutions support certifications and transparency.

### 1.5.2 TRUST AND CONTROL

Presently, Nordic Swan Ecolabel primarily focus on business products. The certification process is well defined by certain criteria, the products must fulfil in order to be certified. The relationship is based on trust between the assessor from ecolabels and the business, which is certified or about to be certified. The assessor needs to get the right information on the ingredients, energy consumption, production condition etc., which was used to make the product. The company must allow ecolabels to go through its' processes and control them regularly to ensure that the

standards are met.

This is a guarantee to the consumer that the products labelled with Nordic Swan Ecolabel meet certain environmental standards. The system relies on trust and control as illustrated in the figure below.



When it comes to the sharing economy the setup changes according to the economic model at hand. Each model has its own characteristics whether it is gig economy, access economy, peer-to-peer economy or one of the other models.

It is important that Nordic Swan Ecolabel is aware of the differences between the models and considers how many new areas the label can include. It is also relevant to examine whether the purpose of the business supports the areas of interest for ecolabels. When it comes to the circular economy, Nordic Swan Ecolabel has previously defined how it can work together with its certifications as we will show in the next paragraph.

## 2 METHODOLOGY

How can we promote the development of type-1 ecolabel in the shared economy? Which sectors are most likely to be frontrunners in the movement for a more sustainable and certifiable future? Which sectors will have the hardest time meeting up to the standards set by Ecolabels? These are the questions we ask ourselves in this report. To arrive at a conclusion, we have mapped the sectors involved in innovative shared economy services and products. Then we have identified obstacles and possibilities within each sector and analyzed them. The analysis is based on 4 methodological approaches:

- Desk study of sharing economy and main sectors: to get the necessary overview of the sectors.
- Development of a screening model based on ecolabels focal points: The model gives a quick screening of the potential for ecolabels to get involved with a certain type of businesses.
- Interviews with companies within the sharing economy and relevant stakeholders: to understand potentials and barriers.
- Workshop together with the working group on Circular Economy (NCE) and companies within the markets for delivery services, mobility and shared workspaces.

Based on the analysis we recommend, which type of business models, sectors and markets ecolabels should focus on in their further work.

### 2.1. DESKSTUDY

Our desk study consisted of research into theories, sector developments and the transformative aspects within the sharing economy.

In the study we also sought to identify how type-1 ecolabels, and the principles and elements that governs them, can be paired with the new markets with a special focus on the Nordic Swan Ecolabel. In our analysis, we have touched the business models, sectors and markets at play to give a versatile assessment of each market. The desk study laid the foundation for the screening model, which directs the analysis into sectors and markets of interest for ecolabels.

The desk study was followed up by expert interviews to understand the development in the market. The desk study and the expert interviews pointed toward 6 primary sectors for the shared economy and the different business models in each sector.

## 2.2 SCREENING MODEL

The screening model has been developed to evaluate our findings. We have investigated +200 sharing related businesses (majorly from the Nordics) and the characteristics of the markets they operate on. The model points out the most interesting markets for ecolabels to get involved. It is a very time-consuming process for Ecolabels to enter a new market. Therefore, it is essential that the potential in each market is investigated in advance. In the point model the markets are scored individually according to their potential for ecolabels.

We have identified 6 sectors and 14 different markets in our analysis, which is based on the standard elements and principles from type-1 ecolabelling. Here we lean on Nordic Swan Ecolabel three underlying principles for selecting new markets: *Relevance (R)*, *Potential (P)*, and *Steerability (S)*.

The set of evaluation questions made for the screening model are divided into 4 themes to give the model a quicker overview. The model should make it possible for ecolabels to assess, which business areas that has the greatest potential to yield positive impacts.

The 4 Themes and Evaluation Categories in the Screening Model:

### 1. Synergies for ecolabels (a total of 0/12 points given):

This theme focusses on the possible synergies for Ecolabels if they get involved in the market. This includes synergies in relation to business models, but also in relation to existing criteria and initiatives.

### 2. Eco potential (a total of 0/12 points given):

Are there circular and sustainable potentials for Ecolabels by getting involved in the market and can Ecolabel help transform the market?

### 3. Market relevance (a total of 0/12 points given):

The size and nature of competition within a market has great significance for Ecolabels. If there is a great level activity Ecolabels can affect the market in a positive direction. There is also a financial aspect of the matter since it is expensive to develop criteria in a new market. Therefore the size of the market matters.

### 4. Eco risk (a total of 0/12 points given) (12 points = low risk):

Some shared economy businesses are challenged by environmental or sustainable issues, which should be taken into consideration before Ecolabel enters a market. Another issue is grey areas, which Ecolabels should address before entering a new market. (se afsnit 1.4.6)

The questions in the four themes lays the foundation for the scores of the sharing markets. The points go from 0-12 for each theme (2 questions within one theme. Each questions gives a maximum of 6 points (0= low relevance– 3 = medium relevance - 6 = high relevance) for , which means that a given market will maximum be able to receive 48 points.

This simple quantified assessment demonstrates, which markets are found most suitable for ecolabelling.

Synergies for Ecolabels	<b>Criteria synergies</b>	Is there a strong link to present European/Nordic Ecolabel product/service categories and criteria?
	<b>Businessmodel synergies</b>	Are there similarities and synergies at the business model level that will fit Ecolabels way of working?
Potential for sustainable change	<b>Eco potential</b>	Are there huge environmental benefits from affecting the market and its lifecycles?
	<b>Transformability</b>	Does Ecolabels have the potential to push a greater transformation beyond the companies operations/customers/users?
Market relevance	<b>Market size and potential</b>	Is it a large or growing market?
	<b>Competition in the market</b>	Is there a competition in the market, which makes Ecolabels attractive to work with?
Eco risk	<b>Grey zone risk</b>	Are there any grey zones in the market, which ecolabels should be aware of?
	<b>Environmental risk</b>	Are there any immediate environmental disadvantages of involvement in the market?

It is important to note that the screening model only gives an indication of which markets Ecolabel should focus on within Sharing Economy. The final decision about the focus should be

made by initiating follow up interviews with stakeholders in the market. The model only looks at the market within Sharing Economy and does not consider other potential areas such as the building sector etc.

### 2.3 COMPANY INTERVIEWS WITH HIGH OR MEDIUM ECOLABEL POTENTIAL

We carried out structured interviews with sharing economy companies operating across the Nordic countries. Based on the screening model we selected 3 markets for ecolabels type-1: *Mobility, Delivery Services (Food/Non-Food) and Shared Workspaces*.

The interviews took place via an online meetings app with representatives from the companies. All interviews were recorded to help our analysis of the markets. The purpose of the interviews was to examine the potential for ecolabel to get involved in the market. We therefore asked the companies how their market was developing, what environmental actions they had taken, how they worked with data collection and how they performed today. All interviews were carried out with the same 20 base questions with both multiple choice, tick-of and qualitative answering options. In the interviews, the questions also served as themes for a more open dialogue. +40 companies were contacted directly for setting up interviews and a total of 12 interviews were carried out. All completed survey answers were sent to each participant directly after for review. The interview model and contact of companies were chosen to specifically target the many SME's that operate in the sharing economy and have naturally limited time and resources.

### 2.4 WORKSHOP

A selected number of companies from the interviews and relevant stakeholders was subsequently invited to join a workshop in BLOXHUB on May 27<sup>th</sup>-2019. The purpose of the workshop was to gather companies and experts to discuss how type-1 Ecolabel (with special attention to the Nordic Swan Ecolabel), could be developed to benefit the 3 different sharing markets (mobility, shared workspaces and delivery services – food/non-food).

Three companies joined us in the workshop to talk about their business, the environmental actions they have taken and their thought on a potential ecolabelling of their market. After each presentation there was a short open dialog, with the possibility to ask questions and elaborate with the companies. Later the participants worked in groups, to discuss potential ecolabel

schemes on; life cycle impact focus areas, potential criteria and verification methods for each of the 3 different sharing markets. Each group presented their output in the end of the day, where the results was gathered for the analysis (see Appendix 2).

### 3.0 MARKET UNDERSTANDING – WHICH AREAS SHOULD ECOLABELS FOCUS ON?

Shared economy is here to stay, and we can expect a rapid growth in the market in the years to come. The growth will vary considerably from sector to sector. Some sectors may change dramatically, while others will only be slightly touched by the movement. In the following we will explain the characteristics of each sector and give an indication of, which sectors are likely to be most affected by the transition. We will also highlight the types of companies, who have adopted the shared economy and some of the companies, which has been founded on this new economy. What is their business base? What is their business model?

Presently, there are no market analysis on the shared economy in the Nordics, despite a growing demand among entrepreneurs, ministries, and trade associations. We therefore recommend the Nordic Council to develop market analysis within relevant sectors to support a potential large and growing economy.

Instead of a market analysis, we will try to give a qualitative understanding of, which sectors Ecolabels should focus on to be successful with eco labelling initiatives within the shared economy. Our analysis is based on numbers and evaluations at hand. The numbers are well-known and have been published previously. What is new in our report is the combination of numbers with expert interviews and our own professional knowledge, which form the basis for an overall assessment of the market. We hope that this section of the report together with chapter 1 will be the first steps towards a larger market analysis of the area.

#### 3.1 6 MOVING SECTORS

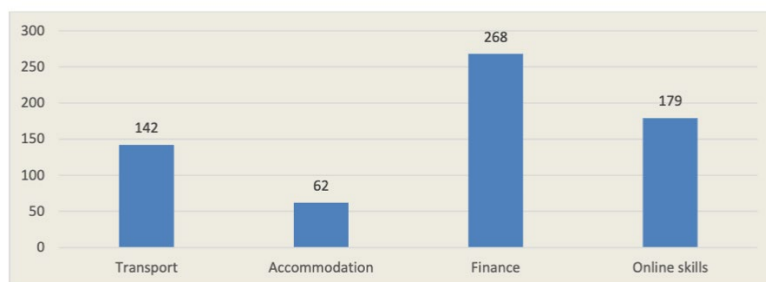
Many sectors in the Nordic countries are affected by the shared economy. Some sectors are more prominent than others. In a widely quoted study, PWC has investigated key sectors where the sharing economy is already substantial or has high growth potential. In this section we analyze the trends and their impacts on 6 sectors with a special focus on companies/participants operating in Denmark.

1. **Mobility industry.** The mobility industry includes car clubs (car sharing), real-time vehicle sharing (ride sharing), parking space rental, on-demand car and bicycle rental, community-based traffic, navigation applications and logistic. Companies/ participants in this sector include: GoMore, Mover, Green Mobility, Donkey Republic, Plot, Lets Go and TADAA!
2. **Retail and consumer goods.** Retail and consumer goods include everyday functional objects (e.g. for housework and household tasks, kitchen, sport), food sharing, closet sharing, shopping communities and community gardens. Companies/participants in this sector include: DBA, TooGoodToGo, Trendsales, Verasvintage, Reshopper and Mellemhaver.
3. **Office, Tourism and hotel industry.** Tourism and hotel industry include Monetized home sharing, non-monetized home sharing, home exchange, community tourism services and coworking offices. Companies/participants in this sector include Airbnb, Boligportal, Couchsurfing, HomeExchange and Homecamper
4. **Entertainment, multimedia, and telecommunication.** This sector includes telecommunication. Online music and video streaming, wireless community networks. Companies/participants in this sector include Spotify, Deezer, YouTube, Netflix, HBO Nordics, Dplay and Apple Tv+.
5. **Financial.** The financial sector includes community financing (crowdfunding), c2c lending, community innovation (crowdcreation). Companies/participants in this sector include Kickstarter, Indiegogo, BetterNow and Boomerang
6. **Human Resources.** This sector includes various services, odd jobs (household tasks, distance work, etc.), online teaching etc. Companies/participants in this sector include HandyHand, Hilfr, KeyButler, Vigo, Bikerunner and Chefme.

*\* Source: PwC (2015), Sharing or paring? Growth of the sharing economy*

In Europe, the most prominent sectors within the shared economy are transport, accommodation, finance, and human resources (online skills). The graphs below show the market sizes in EU for the four sectors in 2016-2017.

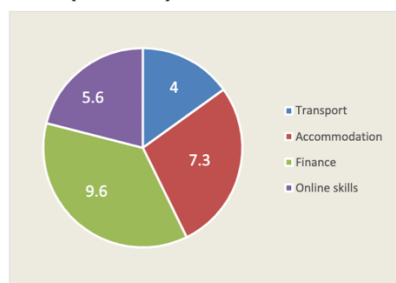
**Figure 3 Domestic collaborative economy for-profit platforms in the EU-28 by sector (2017)**



Source: authors' data collection

<https://op.europa.eu/en/publication-detail/-/publication/occ9aab6-7501-11e8-9483-01aa75ed71a1/language-en/format-PDF/source-123247354>

**Figure 4 Estimated collaborative market revenue in the EU-28 in 2016 by sectors (EUR billion)**



Source: authors' calculations

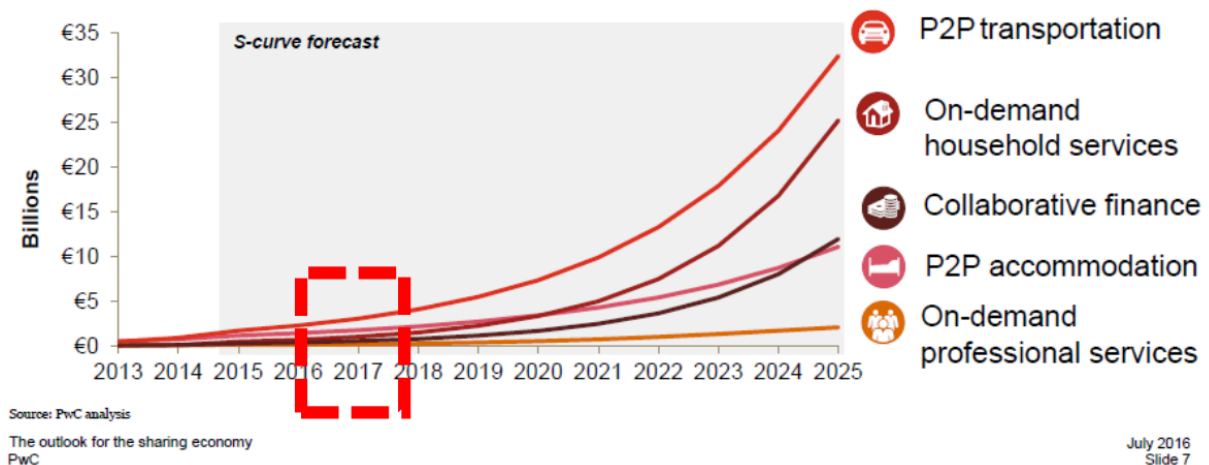
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Another sector in rapid growth within the shared economy is entertainment, multimedia, and telecommunication, which is also mentioned above. The figure below gives an overview of sectors and markets in movement in Europe. The figure includes a projection for the development of the sectors in the years to come. The entertainment, multimedia and telecommunication sector is named On-demand household services in the figure.

***We expect Europe's sharing economy to grow by 35% per year, generating €0.5 trillion of total commerce by 2025***

**...resulting in over €80bn in potential revenues**

Sharing economy revenues in Europe by sector (€bn, 2013–2025)



Danish experts on shared economy advise Ecolabel to focus on accommodation, transport, entertainment, or human resources in their work. Shared economy within finance has not yet been successful in Denmark.

## 3.2 THE SECTORS

### 3.2.1 MOBILITY/TRANSPORT SECTOR

The mobility/transport sector is one of the most prominent sectors within the shared economy in terms of use and investments. Therefore, the sector is of high interest for ecolabels. New mobility solutions are constantly launched covering areas as logistics, transport of goods and food. The new solutions offer new services, optimize existing services, or offer more transparency in the process. The development is happening within private cars, bicycles, scooters, and trucks.

The shared economy has had a huge impact on the industry to the extent where it is on the brink of a major transformation. Today, we see car manufacturers trying to rebrand themselves as not

only sellers of cars but also as providers of mobility services. The next major transformative wave will come with the self-propelled cars. The development has also had a major impact on transportation/freight where new business models have spread fast in the Nordic countries.

#### *Car/space -sharing*

Car sharing was one of the first inventions within the shared economy that affected the car industry. The idea is that a driver can split the cost of a planned journey with fellow travelers using a digital application. The market is supply-driven, and the number of available rides and destinations vary from day to day depending on the people driving long distances to visit relatives or going to business meetings. The model has since spread to the transport sector, where trucks announce their routes and extra space for additional goods to be transported. Here the trucks increase their profit on the individual routes.

#### *Ride/transport-sharing*

Another model is the demand-driven car sharing, where short rides are offered in private cars for profit. Uber is the best-known example internationally. The same model can be found within logistics, where freight men or private persons offer to transport goods on a digital platform. This transport can take place on bikes, cars or in trucks. Everything is coordinated digitally. While Uber has been banned in Denmark, the logistic services are thriving. It is therefore an area of interest for ecolabels.

#### *On-demand car/bicycle/scooter rental*

On-demand car/bicycle/scooter rental services are also on the rise. The companies are often based on a b2c model. The idea is that a user can pick up a vehicle for occasional use and drop it later at a different location. On an app you can see the vehicles available close to you, which makes it easy and convenient to use. Examples are Lime, which offers on the go scooters and Donkey Republic, which offers bicycles for hire. Another example is the Drive Now service launched by BMW, which makes it possible to enjoy the benefits of car without having to invest in one. Other companies are Go-More, which is based on a P2P model, where individuals can rent out their cars to others via a platform.

### 3.2.2. RETAIL AND CONSUMER GOODS

The retail and consumer goods sector have had a tremendous growth in shared economy services covering a wide area of business models. The sector seems to be moving rapidly and may change dramatically soon, but presently the sector is not seen as one of the most important in the shared economy. According to the experts, two markets may be of relevance to ecolabels due to the rapid developments within sustainability.

#### *Clothes and interior*

The fashion industry is notorious for its pollution and heavy drain on resources. As a response to this, the industry has seen a rise in sharing and/or short-term rental solutions. The recycling platforms dominates the market. The platforms help users to buy and sell used clothes and products to each other and thereby prolong the products' life. The P2P model is used in many other areas such as tools, beds, and cars.

On-demand clothes rental services is a new business model, where used clothes are sold to a company, which then rents it out to new users. The business model has a great sustainable and circular potential for example with the recycling of fibers locally. It is therefore an area to watch for ecolabels.

#### *Food*

Food is also a market in growth with an emphasis on solutions that offers greater variation, cheaper products, and quicker access. Here we find shopping communities, where the members jointly buy fruit and vegetables direct from the growers. This model is popular among city dwellers who have little access to farmers and the countryside. In general, b2c models dominate the sector where you can also rent cups, cutlery, and other household items in on-demand model. You also find P2P models in this market such as an app that reduces food waste by giving restaurants the opportunity to offer left over food to end-users.

### 3.2.3 OFFICE, TOURISM AND HOTEL INDUSTRY

Several experts see office, tourism, and the hotel industry as the biggest market within the shared economy, even though other sectors are attracting more investments and have the potential to grow even further. Especially, accommodation is seen a big driver for change, but also venues and shared workspaces are markets in growth.

#### *Home sharing*

Shared economy services in the tourism and hotel industry can be labelled into several categories. First and foremost is the monetized home sharing. Here private persons or companies rent out their own or leased property for profit. As mentioned earlier this market is utterly dominated by Airbnb, which has achieved explosive growth in recent years. In the market we also find several non-monetized home sharing models such as Couchsurfing, where hosts share their “couch” with others free of charge. In exchange, the host can stay free with other couchsurfers at a later stage. The model is based on reciprocity and trust. The same principle governs the global platform HomeExchange with more than 65 000 properties. Here registered members can set up home exchanges with each other in return for an annual subscription.

#### Community-based tourism and venues

Community-based tourism services include home dining services, where homeowners offer occasional meals in their private homes.

#### Sharing workspaces

Coworking offices operates in the b2b segment and are in many ways like a traditional renting model, where you rent an office in a building. The main difference is that the companies do not have their own space but work flexible and take the space available on a given day. They also share the common services with the other users.

#### 3.2.4. ENTERTAINMENT MULTIMEDIA AND TELECOMMUNICATION

Online content streaming is one of the most prominent inventions of the shared economy. It has shaken the entertainment industry at its core and is rapidly becoming a dominant business in the shared economy. The concept is to watch or listen to digital content without having to download the music or the movie. The users usually subscribe to the service via a subscription fee. In music the market leaders are Spotify and Deezer, while Apple music has wowed to catch up. YouTube is leading the market for online video streaming services and has reached a level, where 300 hours of video content is uploaded to the site every minute and more than 4 billion views a day. Netflix on the contrast does not have the same level of interaction and sharing of videos between the users. Here premium content such as movies and tv-series are uploaded to a server by Netflix and can be streamed by people subscribing to its service. Netflix, HBO and now Apple Tv+ have revolutionized the industry making tv-series a new artform and a topic for discussions globally. Wireless community networks are also becoming popular globally. Here users make a secondary network available via their router to others who also share their own networks. One of the most successful examples of this is Fon, which has around 15 million access points worldwide.

#### 3.2.5. FINANCIAL SECTOR

Several reports and analysis have highlighted the financial sector in the shared economy. The dominant business models are crowdfunding, crowdinvestment and crowlending. The business models are developed to give better access to capital for companies in need of financing to develop a new product, enter a new market or develop their company in a certain direction. The financial sector is predicted to be among the three biggest sectors in the shared economy by 2025. But when it comes to Denmark the picture is very different. In Denmark, the shared based companies in the financial sector is struggling to survive. They have never gained a serious foothold because of the existing institutional structures at the financial markets, cultural traditions and quite simply the fact that the market is not big enough to uphold such a service. Therefore, it is not an interesting market for ecolabels to focus on at present.

### 3.2.6. HUMAN RESOURCES

Human resource is on the rise in the shared economy. Here individuals can offer their time, specialist knowledge and experience to others for free or for payment. The flexibility in the service has made the service very popular. For society at large, we may see that potential employees disappear from the traditional labor market. For the individual, it offers the prospects of gaining additional income and even start your own micro-business, which may stimulate consumption and economic growth. The sector is closely related to the GIG-economy and involves both cleaning, household, transport, design, teaching etc.

The human resource sector can be problematic seen from a Nordic perspective because it challenges traditional employer and workers relations. Workers' rights are in some cases neglected and replaced with a more flexible system, where the worker acts as an independent unit. This means that traditional rights such as sick leave, holiday pay and overtime can be set aside. On the bright side, you can act independently and work as your own boss.

One of the most successful platforms in the human resource sector is TaskRabbit, which offer users to choose a broad range of services. The site has 30 000 registered providers who all have been quality-checked to ensure a certain standard of the service provided. A similar site called Sorted has 12 000 registered service providers. Another popular invention is online training. Here people can subscribe to a service and learn new skills from a broad range of online courses covering French cooking classes to sewing dresses or writing a novel.

*\* Source: PwC (2015), Sharing or paring? Growth of the sharing economy*

## 4. SCREENING OF 14 MARKETS

## 1. CLEANING SERVICE

### PRODUCT:

Platform based private house cleaning services, where the companies provide a platform based on commission to connect homeowners with either micro workers or full-time self-employers.

**ECOLABEL POTENTIAL: MEDIUM**

**SCREENING RATING: 30/48**

**SECTOR: HUMAN RESOURCES**

### SHARING CHARACTERISTICS:

Provides a digital and fast connection between multiple home cleaners and private costumers

Digital driven by B2P/P2P offers, ratings, communication, payment, tax deduction and more.

Fast day-to-day cleaning single time jobs payed by the hour (per job done)

Public user rating systems and verification of cleaners are often part of the service.

### BUSINESS MODELS:

GIG and peer-to-peer economy

### POTENTIAL:

Ecolabels have the potential to work with many companies that offers the same service and thereby certify many companies at once.

The market is growing, which means that ecolabels can make a good impact.

Ecolabels already certifies detergents, so why not work with a platform? It is possible to gain significant synergies in this sector even though there are also challenges for Ecolabels to overcome in a peer-to-peer setup. The primary challenge is here how to make the control work.

Certifying the cleaning of private homes gives a potential to expand the user base. Many platforms are working actively to address the challenges with grey zones.

The market has expressed interest in having their services certified.

#### BARRIERS:

There is some “grey zones” regarding taxation and employment.

Detergents and tools are often bought by the homeowner.

There is a need for close cooperation between the platform and the ecolabel to ensure that the right criteria are applied and communicated to the cleaners.

#### Next step for Ecolabels

Ecolabels need to decide whether they can work with shared economy in the areas where gig economy is the leading business model. Several experts note that it is not evident that the business model will be successful in the Nordic countries. The reason is that the labor market generally is working well. The relation between employer and worker is also different in the Nordics compared to other countries. Will the organizations adapt their business models to the Nordic way of doing things or keep running their own model? It would be a good idea to start discussions with the unions about the topic. If gig economy is seen as an area of interest for ecolabels, cleaning would be an excellent place to start certifying.

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## CLEANING SERVICE WITH HILFR

One sharing-based platform company “**Hilfr**” was initially interviewed in the study (Interview March 29th, 2019). The interview provided some key insights into the market. After the interview, it was decided not to pursue further interviews with other companies in this market, since the potential lies in a grey zone. It was considered that new service-products most likely had to be developed for ecolabelling to be somewhat relevant for the companies and for an ecolabel to effect multiple elements of the life cycle. On the other hand, a new set of ecolabel criteria could maybe push these new market players to join Ecolabel, since competition is fierce and the growth rate is high.

The market for residential cleaning service providers is relatively large in the Nordics, based on the large number of active service-providers found in our study (both traditional and platform-based). The market size in Denmark alone were estimated to 400 mill. EUR. In Denmark a fourth of the labor price has been tax deductible in the past years<sup>1</sup>. This is probably one of the reasons why more and more homeowners choose to buy such services today. Other reasons could be an increased focus on time-saving services in families, where such extra services (e.g. including food, grocery and other online deliveries) are getting more and more popular. Hilfr explained that they looked to the US where home cleaning services are a much more widespread and publicly accepted thing to buy in many households. This assessment is backed up by the rapid growth of the platform. Multiple regular cleaning service companies are Swan labelled today (Cleaning Services, Vers.3.1, 2017), already making it a competitive parameter in the general market. Sharing based platforms would therefore have the incentive to follow this path as well.

The potential for sharing based cleaning service platforms lies in a grey zone. The sharing platforms are connecting private cleaners (micro workers) with homeowners versus regular

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<sup>1</sup> <https://skat.dk>, 2019; <https://skat.dk/skat.aspx?o-id=2234759>

service companies with permanent employed staff of cleaners with collective agreement contracts, service vehicles and cleaning/equipment product policies. What needs to be examined is how well the sharing platforms are taking responsibility for screening micro-workers, implement work-environment and social economic policies (including tax, pension and vacation payment services/collective agreements) and provide insurance for customers and cleaners.

When regular cleaning service companies can be Swan labelled today, the increase of shared based platforms makes it relevant to include them in the future picture, maybe on slightly different circumstances for criteria and points on the offered service-product. One of the competitive advantages platforms companies seem to have, are the ability to limit transaction costs and investments, since their main job is to drive their platform service.

This means they have a great potential to take markets shares from individuals doing undeclared house cleaning and the more traditional cleaning companies. Quality insurance and work environment safety are areas they should take responsibility for already today. Focus areas in the current ecolabel criteria such as *transportation, cleaning products, materials, cleaning equipment, waste management* are on the other hand areas, which needs to be addresses and fitted to the new setup of platform-based services.

As a new cleaning service platform operating in Denmark, Hilfr's business model is based on a 10% commission on every cleaning job booked through the platform. They specialize in providing a social economic robust service, where they have made collective agreements with the 3F (workers union) and secured a minimum wage of 130 DKK/hr. for freelance micro-workers operating as cleaners for them. Everything is reported to the tax system (ensuring costumers their deduction), but the freelancers must pay taxes themselves. However, once a micro-worker has made more than 100 hours of work, they automatically become "super Hilfrs", which will cover them further as part-employed, where taxes, work environment and quality insurance is taken care of by Hilfr. The minimum wage is then raced to 141,21 DKK/hr., where they also will receive pension, vacation and sick leave payments on top – average hourly wage ends at 239 DKK. Hilfr had 22 people employed this way at the time of the interview. For the commission Hilfr also provide a general insurance for both costumers and cleaners. It has been a key element for them to ensure a responsible alternative to a very uncontrollable market. They explain that their main competitors are not other businesses, but simply undeclared work, which they estimate is

covering at least half of the potential market today and notable has lot of negative social impacts. Hilfr viewed ecolabels like the Swan very positively, as giving credibility and saw high potential for them to adopt environmental positive changes, if such was available for them today and they could acquire one. Here they showed interest in participating and contributing to criteria development.

*Quality control* is an area somewhat built into the nature of many sharing platform, where a P2P rating system of the individual cleaners helps customers find and select the best ones on several parameters and user evaluations. Sharing platforms for cleaning often don't provide *cleaning products or equipment* (like vacuum cleaners, cloths, buckets etc.). This is something that the self-employed cleaners must take care of themselves or get the costumer to provide.

At Hilfr cleaning jobs are also delivered on the notion that cleaning products/equipment is something that the costumer provides. This means, a new service-product would have to be developed if life cycle impacts should be covered by an ecolabel. As a possible solution, they have played with the idea of an intro-box or home delivery of special selected *cleaning products* as part of their service in the future. This would then make it possible for them to determine eco-design and ecolabelled products, with e.g. options to take-back reusable packaging etc. In a costumer survey, they got mixed feedback on this solution.

While a delivery service of cleaning products seemed possible, the general equipment would be a challenge to address, due the logistics of not having dedicated transport solutions for the individual cleaner to bring stuff around. On the other hand, it could also be argued that most households have their own cleaning equipment available, why it would only add consumption if companies acquired new for the purpose. Platforms could maybe choose to provide their regular cleaners (like in the case of super Hilfrs), with a basic smart/soft bag of ecolabelled gloves, clothes and other useful cleaning accessories, if it was easy/flexible to bring. Here, the main problem is to ensure equipment suited for a good work environment like backpack vacuum cleaners. In general, *work environment and safety* are an area the self-employed cleaner must ensure themselves.

The *transport* solutions for the cleaners (moving from job to job) are challenge to address for an ecolabel, where Hilfr explains it is up the individual cleaner to get from A to B. Hilfr mainly operate

in the cities today, why they “assume” most of their cleaners’ bikes around. However, this is an area in the life cycle where there could be alternative solutions. In the interview it was discussed whether the platforms could make partnerships with other mobility platforms like bike and car-sharing services and then the cleaners could use them on the job? A model which is seen in the area of sharing-based delivery services for take-away food.

*Waste management* is also managed between the cleaner and the customer. All in all, many areas could benefit if service providers such as Hilfr introduced material, instructions and courses to ensure that standards, safety and proper handling are met. This is an area where Ecolabel could help facilitate new criteria and generate a new standard.

## GOING FORWARD

The life cycle impacts of platform-based cleaning services makes it a relevant market to watch. The verifiability of potential criteria is somewhat challenged by the fact that new and sound service products solutions must be developed for areas like cleaning products, transport and waste management, before it can be ecolabelled. In the end, the solutions might be flexible and not cover the entire operation, which makes it harder to define minimum criteria.

Data on the operation should be eminent (on performed services, ratings, new product sales, implemented standards), where the problem lies in the platform’s current ability/resources to audit whether environmental management procedures are followed in practice by the cleaners. There is less doubt that such platforms will have a transformable impact of the residential cleaning market in the future, since they might represent a competitive sweet spot between undeclared work and more traditional service providers with larger transaction costs.

We therefore recommend including shared based cleaning service platforms in a future revision and evaluation of ecolabelling in the cleaning services. The criteria must be based on how a service is operated with different kinds of measures and points.

## GIG ECONOMY- NEW WAYS OF WORKING WITH ECOLABELING?

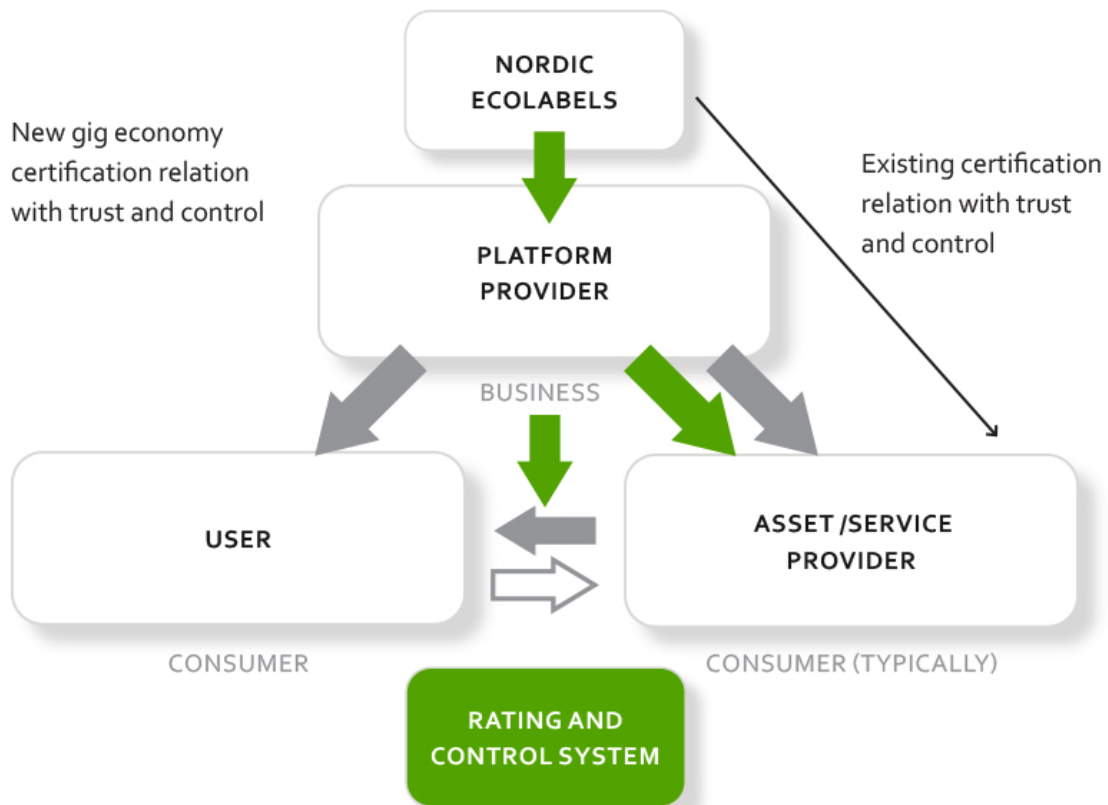
Large parts of the gig economy are related to a peer-to-peer economy model where customer and customer buy and sell services from each other on a platform.

The C2C models have many grey areas that certification labels need to consider and address before a platform can be certified. The grey areas include working conditions, managerial systems for handling conflict between the peers (assaults, misunderstandings, violence etc.), tax and salary. Many platforms are actively involved in addressing these issues but not all have the same level of integration as regular system.

Even though there are challenges with grey areas in the gig economy there is also a great potential to create market services with a more sustainable focus. Gig economy is easier to certify than a pure peer-to peer economy, because some of the services is standardized and highly controlled by the platform.

There are several practical challenges that need to be address, before an ecolabel can get involved with a gig economy. The greatest challenge is that of distance. If the distance between the ecolabel organization and the provider is big the practical challenges may be hard to overcome. Here we need more practical experience from the ground to move forward. Relevant areas to gain experience within could be: Can the grey areas be resolved to a satisfying level? How should the business model between the platform and ecolabels be devised? Will the rating system between user and asset provider open new possibilities to create trust and control? Will ecolabels benefit from the work with gig economy platforms? Can ecolabels manage a longer distance between certified companies and users?

Therefore, we recommend beginning with testing a smaller area, where ecolabels already have valuable experience.



## 2. CLOTHING

(FASHION APPAREL, FOOTWEAR & ACCESSORIES)

### PRODUCT:

Rental, leasing, reseller or subscription services for clothes and accessories on various platforms. Often with swap options or voucher systems imbedded. Multiple variations with second-hand clothes, quality clothes, baby/kids wear, designer items, special occasion clothes or costumes in the varied service offers.

**ECOLABEL POTENTIAL: MEDIUM-HIGH**

**SCREENING RATING: 36 (MAX 48)**

**SECTOR: RETAIL AND CONSUMER GOODS**

### SHARING CHARACTERISTICS:

B2P based subscriptions/resellers or P2P platforms for sharing items, connecting multiple users with a pool of clothes, on the promise of increasing the use-cycles and recycling capability of each item.

Digital platforms as mobile apps/online makes instant selection and administration of subscription easy for the users. Asset use optimization is part of the value recovery of some of the found business models.

The sharing element are in the grey zone between platforms providing second-hand reseller markets, platforms facilitating sharing of personal owned clothing items, all the way over to PaaS business models with subscription, leasing and rental services of e.g. designer clothes, sport or kids wear.

Sustainable/quality materials, durability, cleaning, repair, recycling and refurbishment of the wearable assets are ingrained elements in some of these services, making the value recovery possible (increasing circularity) and the environmental footprint potentially lower.

### BUSINESS MODELS:

Access, peer-to-peer and secondhand economy.

## POTENTIAL:

The market is huge and one of the most polluting markets in the world. If we can make circular loops, ecolabels have the potential to change the market. Especially certifications of on-demand clothes rental platforms could be an interesting area to engage with because of the circular possibilities. This is an interesting area to work with because of the development of new types of fibres, technologies to recycle fibres and tracking technologies. The market also relates to existing initiatives at ecolabels, which makes it possible to gain synergies from an involvement. Finally, it is not seen as a sector, where there are any negative risks by getting involved.

## BARRIERS:

There is a need for new technologies, which can promote circular systems. At present, there are not any well-functioning circular systems in the sector. The sector is very far from being sustainable and the market for new business models has not really broken through. This means that there is no substantial competition in the market.

Next step for ecolabels:

It could be interesting for ecolabels to begin a dialogue with on-demand clothes rental platforms. Ecolabels and the companies could draw a roadmap for a future development of sustainable clothes loops and how ecolabels could help the process. In spite of this, the changes in the sector are not likely to occur preliminary.

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#### *Clothing Discussion - (Fashion Apparel, Footwear & Accessories)*

In recent decades the fashion & textiles (F&T) industry have been subject to ever increasing and rapid consumption cycles (fast fashion) and very high environmental and social impacts through the entire life cycle. Economically the global F&T industry represents a 1.3 T \$ market, with 300 M people working and living of the value chain, but an estimated 500 B \$ worth value loss due to a present deeply linear take-make-waste business model<sup>2</sup> (p. 36).

The production of garments has over the course of 15 years (2000-2015), more than doubled from 50 B pieces/yr to 100 B, thus likely to be even greater today. At the same time, average global utilization rate has fallen 36% reflecting the number of times an item is worn before it is discarded. This is a major problem, since most clothes will be downcycled.

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<sup>2</sup>Ellen MacArthur Foundation, 2017: *A New Textile Economy – Redesigning Fashions Future*

Recycling technologies and capabilities are developing, but still 97% of the global textile industry comes from virgin feedstock – of this 63% are polymers, 26 % cotton and 11% other (e.g. viscose, wool). 73% of these clothes goes to landfill or gets incinerated after the use-phase. 12% is lost in production (10% as off-cuts). Another 12% are recycled to lower value such as insulation material. 2% is lost in collection and processing, while only 1% (some claiming 0,1%) can be considered to go back as closed loop recycling. The wasteful and polluting industry has impacts throughout every stage of the lifecycle. <sup>3(p. 36-40)</sup>.

In Denmark 48% of all textiles from households were collected in 2016<sup>3</sup>, down to 22% in Sweden<sup>4</sup>. Most of this collection is carried out by charities or private collectors. The rest ends in the residual waste streams. The collected textiles are both sorted domestically and sold mixed bagged for sorting abroad, where it is sold for reuse or recycling. The latest revision of EU waste legislation states that separate collection of textiles must be implemented before 2025<sup>5</sup>. This means that many more textiles will be reused or recycled in the future.

In the recent years, sustainability has become a focal point for the global industry where both smaller and larger brands are introducing styles, collections and business concepts with certified/recycled materials and designs of higher quality that can live longer. We have screened the Nordic sharing based market and found several small and innovative businesses, among them:

The Swedish sports and outdoor brand Houdini have a holistic business concept focused on several aspects: durable, repairable and quality designs for extended life times of the apparels are making up the core business, encouraging their costumers to repair products, with in-store help, returns and spare parts. All products are made recyclable, and from recycled, renewable, biodegradable and Bluesigned raw materials. Also, they offer differentiated rentals of 2-7 days

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<sup>3</sup> The Danish Environmental Protection Agency, 2018: "Mapping of textile flows in Denmark". Environmental Project No. 2025

<sup>4</sup> Nordic Council of Ministers, 2016: "Exports of Nordic Used Textiles - Fate, benefits and impacts"

<sup>5</sup> Dakofa.dk - Nyhed: Nyt krav om separat indsamling af tekstiler, 21. marts 2018 - <https://dakofa.dk/element/nyt-krav-om-separat-indsamling-af-tekstiler/>

and plan to subscription model based on a monthly fee, with 4 pieces of clothing, maintenance, repair and switch options.

The Danish store/platform Vera's Vintage, has made a very flexible business concept on the basis of garment/footwear reuse of lady wardrobes. The business concept is based on people trading in their old clothes and getting swap credits in exchange, based on uniqueness, style and quality. The credit points can then be used in the store. They have a member's subscription fee of 100 DKK/m, which give users of the store/platform access to in store/online 10% discount shopping of the vintage close and free swaps of up to 20 items per month. Vera's Vintage is strong on social media and has built a community, while also having a physical venue with stores and hosting flea markets. They seem to have a good touch with the younger crowd, who wants to shake up styles often by having access to an extensive, flexible and sustainable wardrobe of vintage and unique garment and footwear designs. In 2018 they claimed to have enabled the reuse of 60.000 items.

The Norwegian platform and store Fjong have made a business concept of rental and lending exclusive designer and vintage clothes. With over 4000 items from 200 brands the users of the platform can rent available items with delivery or in-store pick up in Oslo. Users can then also become lenders, if they have unique/great pieces that Fjong accepts to become part of the wardrobe. The lender then agrees to have their piece up for rent over minimum 6 months and will make money from it on a 50/50 split with Fjong. Fjong will then maintain and wash the cloth for the period. It is also possible to get help from a personal stylist in store, building a more exclusive service.

Brand repair services, incentivized take-back/collection with recycling/donation initiatives and sustainable sourcing are the low hanging fruit elements, which many retailers and fashion brands have started to promote, but it doesn't fundamentally change the global fast fashion business yet.

## GLOBAL OUTLOOK AND CONSUMER TRENDS

In "Pulse of the Fashion Industry" (update 2019) by Global Fashion Agenda, Boston Consulting Group, and Sustainable Apparel Coalition, the overall road to sustainability is measured on the

global F&T industry, from a pre-phase to a 4<sup>th</sup> phase with index 100 points on the so-called “pulse curve”. For every 20 points, the industry moves up to the next phase in the transition scale up. In 2019 the global industry was at an average 42 points (+4 from 2018), just moving into phase 2. This phase is characterized by transformative actions being taken on *sourcing sustainable materials, climate/renewable energy, fair and secure work environment, and efficient use of water, energy and chemicals in production*, which can be translated to the industry as being on the brink to build a better foundation for circularity. However, this also means, there is still a long way to go before an impactful *circular fashion system* will be seen around new business models.

In “State of the Fashion Industry 2019” by The Business of Fashion and McKinsey & Company, different global mega trends are analyzed. Consumers are found to be generally more social and environmental conscious today, where access becomes relevant to more consumers, rather than ownership, as they survey 44% are open to “pre-owned” items and 41% to “rental” models.

The digitalization and increased use of social media in the last decade, has taken some of the sales from flee-markets and second-hand shops online, but instead of relying heavily on half and whole decade old clothes, item value gets liquidated more quickly on these platforms, while they are still in style or sought after. High-end brands, accessories, sports- and outdoor wear with higher price tags from new are the most popular<sup>4 (p. xx)</sup>, since buyers can make good deals and get a hold on items being rarities, unique styles or previously unaffordable. A successful part of the pre-owned market model, for many of these platforms, is to emulate the cleanliness, order and customer experience that traditional online stores have<sup>4 (p. 40)</sup>. This broke down the barrier between old and new. Customers see items as being “pre-loved” rather than second-hand<sup>4 (p. 35)</sup>.

In the US 40% of consumers are considering the resale price of an item before buying it<sup>9 (p. 14)</sup>. In 2018, 64% of US women over 18 bought or considered to buy second-hand in the future – the number who bought were 56 M women<sup>9 (p. 6)</sup>. A 2018 study by Mistra Future Fashion, found that online reselling platforms are used often by German and Polish with around 50% of consumers, where it was 36.6% Swedish and 29.4% for U.S. consumers<sup>6</sup>.

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<sup>6</sup> Mistra Future Fashion, 2018: “Report on geographic differences in acceptance of alternative business models”

Service Type	Germany	Poland	Sweden	US
% who previously used				
Clothing Libraries	3,2	3,2	1,6	11,3
Fashion Rental	12,5	22,8	17,6	17,4
Fashion Leasing	2,4	1,2	1,3	10,6
Online Reselling Platforms	50,4	47,6	36,6	29,4
Average on a 0-100 scale of likeliness to use (in the future)				
Clothing Libraries	21,1	27,0	24,2	25,7
Fashion Rental	38,5	5,1	5,3	43,6
Fashion Leasing	18,3	22,2	18,3	2,9
Online Reselling Platforms	59,7	63,9	52,5	55,7

Even though trends can transcend international borders, the exposure to different business models and the cultural heritage of traditions and consumption patterns plays a role in consumer choices. From the beforementioned study of 2018 by Mistra Future Fashion, we can see how consumers have used and intend to use service-based models (fig. XX). Even though there is a great difference from "having used before" to "intend for the future", and probably exposure/options in the separate countries, large parts of the consumers tried or wants to try service-based models to access clothes.

Adapted from "report on geographic differences in acceptance of alternative business models" Steensen et al. at Copenhagen Business School, by Mistra Future Fashion, 2018. Categories of swapping markets, Incentives take-back services, traditional repair services and in-store repair services in the original study, are not shown here, since they are not reflected in this study scope as sharing-based services.

Turnover in the Danish clothing industry were around 2,13 B EUR in 2017 in national sales<sup>7</sup>, thus a quick estimate for the Nordics would then be five-fold at around 10-11 billion EUR, based on the number of inhabitants. The emerging sharing- and services-based concepts, are likely to represent a small fraction of this market as of today. With the end of ownership, the future business winners will curb how they can “sell” a product as many times as possible, shared between multiple users of their platform and stores. Different versions of rental, subscription, lease or buy-back for refurbishment/upcycling are thus expected to enter the market soon. Some businesses might even be born now with designs going “straight to rental”. A future scenario could be that consumers will be buying basic/timeless design garments like underwear, socks, jeans and t-shirts, but then supplement their wardrobe with rental/subscription and pre-owned clothes like mid-prices/high-end dresses, shirts, pants, sports/outdoor wear and accessories. This makes it easy to change styles fast and have constant access to new designs, while at the same time to be a more conscious consumer.

## POTENTIAL & PERSPECTIVES

The great chances ahead in the huge global industry makes it difficult to tell how tomorrow's business models exactly are going to look like. However, with this market being very important in a macro-perspective, we have tried to discuss and define how an approach could be laid out from an ecolabel's perspective. Somehow, it looks like more and more brands/retailers will introduce service-based models, integrating subscription, rental/lease and resale of reuse/refurbished garments in the future. Resale/secondhand based platforms will co-exist and expand the reach of the different consumer segments.

In a market where many parties try to define what circular and sustainable business means, third party type 1 ecolabelling schemes might provide a good solution to establish transparent measures for fully circular and sharing-based services that wants to define the future business models in the F&T industry. Ecolabels can have a relevant role to play, when it comes to show how the current 1% circularity of textiles can be pushed up and curb the falling use-cycle trend.

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<sup>7</sup> Danish Fashion & Textile, January 2018: “Development of the Danish Clothing Industry 2013-2017”.

Clothing is a tricky area due to the nature of individual style, fashion and cultural elements of how and why people wear what they do. This makes wide segmentation and fitted solutions difficult to formalize, where business models need to tackle local cultural differentia, emerging trends/styles and individual customer types<sup>3 (p. XX)</sup>. Therefore, we see an equal need for both types of business approaches in the framework, with B2C and C2C players, to strengthen the overall circularity:

**1) Brands/Retailers** can offer quality garments, footwear and accessories with circular and sustainable properties, introducing service-based and product-life extension measures to keep them in the cycle and ensure optimal recycling in the end.

**2) Resellers/Pre-owned Platforms** can recover garments, footwear and accessories from traditional linear sales to increase reuse cycles and upcycling activities, while also helping worn-out and undesired items to find their way to optimal recycling.

A broad targeting ecolabelling of the market could be based on a varied criteria set and point system that target both retailers/ single-brand concepts and resellers/second-hand platforms, whereas the mix and range of initiatives in their full concept would make up the individual companies applicability for getting the label.

For a full life cycle approach to both *brands/retailers* and *resellers/second-hand* platforms, ecolabels will likely benefit from a semi-flexible criteria and point-based model for compliance, where some of the core elements could be:

**Textile/Fabric Production:** Raw materials in products on the platform are sourced and produced sustainably with a strict criteria policy for raw materials, land use, water use, substance use, renewable energy use etc. possibly through lining up with own established textile criteria (e.g. Swan) and other selected/trusted ecolabels and global industry initiatives/standards. A minimum % acquisition of goods living up to criteria for sustainable sourcing or points scaling towards 100 % acquisition at best.

**Garment/Footwear Design:** Products sold are circular designed and manufactured with no unrecyclable or substances of concern + high durability, reparability and recyclability/biodegradable of apparel/footwear quality designs. A minimum % acquisition of

goods living up to criteria for circular/eco-design measures or points scaling towards 100 % acquisition at best.

Reseller/second-hand based platforms implementing quality and design differentiation in selection/acquisition policies in their business model, pushing people to buy better/higher quality products, which they subsequently can regain more second-hand value from. Setting minimum reuse conversion and value recovery rates from acquired second-hand items would push bad and low-quality designs out of favor. The better the economic regain are for the user/costumer, the higher imbedded value items should tend to have.

**Business Model:** A minimum criteria or point-model for % of products sold on a service model (subscription/rental/lease/credit-point system) that enables the platform to have control of the assets in the whole use phase and subsequently be recovered for multiple cycles within the business framework setup. Asset maintenance could be aligned with textiles service criteria for efficient energy use, water use and eco-friendly detergents.

Reseller/second-hand based platforms would have to show a successful conversion rate of items acquired in the upper quadrille, with fewer undesirable items being taken in to be donated or sent for recycling down the timeline. If second-hand items are rented out, minimum reuse-rates (number of rentals) could be set in the criteria or give points.

**Distribution, Recollection and Recovery:** Eco-efficient and climate neutral logistics must be embedded, since studies shown it can completely offset the gains from the reuse activities at e.g. fashion library models<sup>8</sup>. Eco-efficient/climate neutral modes of transportation, environmental preferable packaging solutions and smart/efficient use of distribution and return channels/points to be imbedded. New digital/technology systems and RFID tagging of assets, can help platforms to stay in control of re-use cycles, redistribution numbers and garment quality/content.

**Recycling:** Assets are recycled to highest possible value. Criteria for average use cycles must be matched with degrading fiber quality for optimal recycling. Platforms could perform some pre-sorting of assets but would likely have to partner with sorting and recycling service providers

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<sup>8</sup> Bahareh Zamani, Gustav Sandin, Greg M.Peters, 2017: "Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion?", *Journal of Cleaner Production*.

down-stream. New technologies are emerging to improve recycling capabilities in the industry, which makes it necessary to show some flexibility with compliance in the beginning and gradually strengthen the demands as the possibilities evolve. <http://wornagain.co.uk/>

The Nordic Swan Ecolabel would benefit from developing criteria in close partnerships with key Nordic/international brands, resellers, industry initiatives, second-hand platforms etc., who would want to use the Nordic market as a test bed for future circular and sharing based business models. Ecolabel organizations will benefit from establishing measures that can improve the effort already being made by some players in the market. Some platforms might be interested in acquiring the Swan ecolabel for textiles services they can use in-house for cleaning/maintenance of their garments or demand it from their service-provider. A thorough value proposition will thus have to be defined, if the whole life cycle around these businesses must be imbedded in new criteria.

Data collection and subsequently verifiability are differently challenged when it comes to the two kinds of key stakeholders we see in the market. Platforms focused on new apparel will naturally stand a better chance of carefully selecting production and designs from circular criteria. Retailer/service-platforms ranging over multiple brands must have a detailed screening process that includes third-party certifications (e.g. for organic textiles). Ecolabels could help formalize this part. Platforms for sharing second-hand items would have to make a more qualitative screening process and will not be able to guaranty traceability. A potential problem, if the clothes shared must live up to European regulations and ecolabel principles and standards.

A similar issue is likely to when setting recycling standards for the shared items. Here, platforms for sharing new and own branded items, will keep ownership and therefore control the fate of those, being able to engage the value chain more closely, since they have better or perfect information on the items, in terms of e.g. fiber content/blends, material source, quality and color. Platforms for sharing/reselling second-hand items will likely face a need to collect more data upfront and tag the items they acquire systematically. Not an impossible task, possibly a manual and likely labor intensive one, but with the help of new technology something that could be eased.

In some cases, with high-end items (that people would want to recover more money/credit for), it might also be possible for the users to help this process, by submitting different item data when trading in their items. In terms of lending/reselling-based models, the final collection and recycling of the items will need to find its way with the users/customers of the platform, such as charities and municipal textile collection systems, since full control is lost. Synergy with Nordic Swan Ecolabel criteria are deemed to be great<sup>9</sup> when developing criteria for raw material and eco-design choices, along with maintenance/textile services imbedded in the business models.

Overall there is found some relevance for ecolabels to target this market, to push transformations ahead, but it is also found challenging to go about pre-selecting winning business models. In the short-term ecolabels might not be able to transform large parts of this vast industry and beyond, but can instead, for some stakeholder's, help define measures and KPI's for tomorrow's circular business models and collectively make a direction that sets the positive example.

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<sup>9</sup>Swan criteria are established for; Textiles, Hides/skins & Leather + Textile Services + Laundry Detergents and Spot

### 3. CROWDLENDING/FUNDING

#### PRODUCT:

A growing market of platform services for private investors, linking up with start-ups, SME's and real estate projects who seek risk willing capital outside and within the normal financial institutions. Crowdfunding sites let start-ups list concepts/business projects with limited screenings. Micro-investors can then receive a reward/perks from the business as a gratitude for the financial contribution. Lending based platforms perform deeper business screenings before projects are listed, including sites devoted to real estate investments. Investments made on these platforms are generally high risk with no or limited capital insurance, but with potential high profits in return.

**ECOLABEL POTENTIAL: MEDIUM**

**SCREENING RATING: 33 (MAX 48)**

**SECTOR: FINANCIAL SECTOR**

#### SHARING CHARACTERISTICS:

Peer-2-peer and crowd-lending based platforms, pool small investments from private people to start-up/SME's who seek an easier way to raise capital than from traditional financial institutions and venture capital funds.

Business models are based on commission where the platforms provide the eco-system with different built-in fees on services and the return on investments. Fees are largely placed on the lenders.

Platforms represent more transparent investment and borrowing opportunities with limited barriers for peers to find each other.

Both the potential profits and risks for investors are high but provides an alternative to e.g. stock investments and a way to support small businesses, which the investors believe in.

Impact investment is an up-coming trend where platforms coordinates private people and businesses.

Crowdlending based platforms operate for e.g. European private investors or focus on a few national markets in the Nordics.

Crowdfunding sites operate without direct profit incentives for micro-investors but on the incentive of backing ideas, concepts and products that people want to see realized. International (American) platforms like Indigogo and Kickstarter have scale, where Nordic based platforms provide a more local alternative for businesses.

<https://crowdlendingdanmark.dk/de-bedste-crowdlending-og-peer-to-peer-lending-platforme-i-2018/>

<https://medium.com/orca-money/how-do-peer-to-peer-platforms-make-money-f41ece024dfe>

#### BUSINESS MODELS:

Peer-to-peer and C2B economy

#### POTENTIAL:

Nordic Swan Ecolabel already focus on impact funds and investments, which could result in great synergies if ecolabels were to get involved. It would not require a lot of extra work to get involved in this area. The differences between regular investment institutions and crowd impact investment is not that great – both are subject to financial supervision.

Several platforms involved with sustainable business development have this as their sole focus. It is therefore possible to make greater demands to the portfolio.

The market is predicted to be among the top 3 areas in the sharing economy and is expected to become a major area within a short period of time.

#### BARRIERS:

The market, especially in Denmark, is still very small. The platforms in the areas are also very small. The reason may be that the markets are not large enough and that there is not the same

financial challenges as in other markets. Most platforms do not have a sustainability goal and are therefore not concerned with this issue. In general, the platforms are too small to really get involved with sustainable issues.

Large platforms as Indiegogo and Kickstarter work globally. A new project with them may be interesting, but would require a coordinated effort globally with other ecolabels.

Next step for ecolabels.

It might be interesting for ecolabels to start a discussion about a joint effort aimed at the major players in the market – especially with focus on crowdfunding. In addition, it could be relevant to initiate a dialogue with a smaller platform focusing on impact investment to help making more demands in the sector.

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## PEER-TO-PEER FOCUS ON IMPACT INVESTMENT AND CROWDFUNDING/LENDING – LEVEL OF PLATFORM INVOLVEMENT SHOULD DEFINE (TYPE 1) ECOLABELS INTEREST

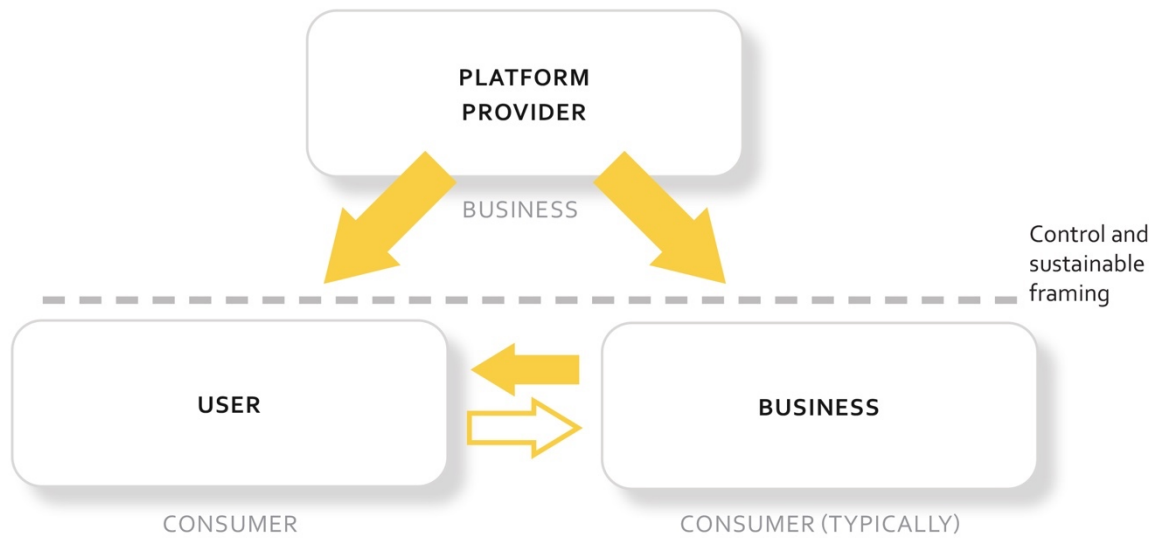
Why are some Peer-to-peer platforms (C2B/C2C models) easy for Ecolabel to work with while others are difficult, even though they are based on the same business models and have a platform that connects users for a payment?

The answer lies in the level of control, the framework and the involvement from the platform or authority. Many platforms outside the financial sector have very little control with the input of materials and the sustainability of the products. The platforms work in a grey area at many levels from work conditions over sustainability to taxes.

In the financial sector the platforms are under strict control and safety due to the financial regulation, contracts etc. Ecolabels already has certifications with some investment funds. Here it would be natural to continue the work. New impact investment platforms seem to appear all the time. New platforms as Do Land ([thisisdoland.com](https://thisisdoland.com)) can be included in the further work with impact investments. When it comes to peer-2-peer lending/funding it is more difficult. The reason is that the platforms have very little influence on the type of projects, products and solutions the companies and persons apply for a loan or funding to. The level of control, transparency and sustainability is less controlled by the platform. This makes it difficult to work with (type 1) ecolabels. Obviously, this can change over time.

Peer-to-peer platforms like [circularinnovationlab.com](https://circularinnovationlab.com) has a higher involvement and control in framing the platform for a sustainable purpose, but the platforms are still small and have not shown proof of concept yet. Maybe this will change over time.

## CONSUMER-TO-BUSINESS (C2B) MODELL



The platforms involvement and control in framing the platform for a sustainable purpose is vital for working with ecolabels.

#### 4. DELIVERY SERVICES (NON- FOOD)

##### SERVICE PRODUCT:

They function as an on-demand service by connecting professional (and in some cases un-professional) drivers and hauliers with freight jobs through a digitally driven platform.

The concept is to use idle spaces from already driving vehicles when customers need to have freight transported the same way and to more attractive prices than normal freight companies. It could for example be a used sofa the customer bought which is located at the opposite end of the country. The customers are both private and corporate customers as well as public companies.

The business model is based on cutting out intermediaries, creating synergy by controlling empty vehicles while ensuring transparency in prices and delivery services.

Delivery service companies define themselves as digital tech companies and not as transport companies.

##### ECOLABEL POTENTIAL: HIGH

##### SCREENING RATING: 42 (MAX 48)

##### SECTOR: MOBILITY INDUSTRY

##### SHARING CHARACTERISTICS:

The sharing characteristics of delivery services is based on sharing economy principles which in this case is the connecting of customers and hauliers through a digitally driven platform with the intent of using idle space in empty freight vehicles which is already driving a route.

In that way both the customer and the hauliers benefit from the platform service.

The price is another sharing aspect in this market which benefits both the customers by offering lower prices than traditional freight companies and freight drivers with an additional income.

##### BUSINESS MODELS:

Peer-to-peer economy

## POTENTIAL:

This market is considered by several experts to be the absolute largest market in sharing economy, as is also seen in the activity of the sector. The companies are growing at a high level and there is more and more competition in the market.

Ecolabels (Der Blaue Engel) have already made several certifications of transport and mobility services, which provide opportunities for synergies.

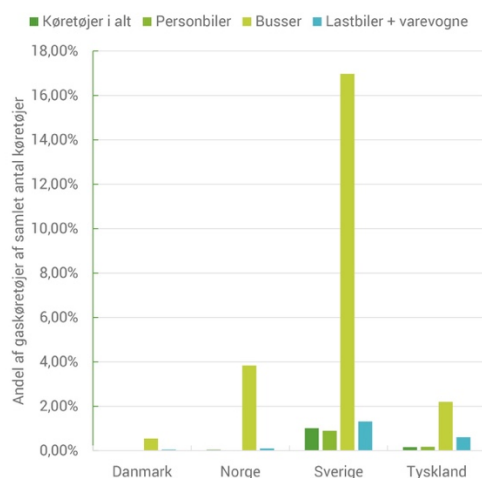
There is a huge potential in making the sector more sustainable and contributing to the transformation.

The market is already undergoing a sustainable change. Electric trucks and gas trucks are on the way.

The companies operating in this market have targeted a great untapped potential for using the existing transport industry more efficiently, by connecting customers and freight vehicles already driving on the roads with idle space. According to the transport company Mover there are more than 397,000 registered vehicles in Denmark but only approximately 3% of those are used for freight. This means that there is a big potential to cut down environmental resources by using these digital platforms more effectively.

Some delivery service companies have (according to themselves) great valid and transparent information and data on environmental matters such as reducing CO<sub>2</sub> levels in the cargo and freight industry, the type of vehicles, their weight and capacity on space and loads parameters.

The verifiability of these matters there for seems to have great potential for an ecolabelling.



Another great possibility worth mentioning is that freight and cargo companies are all gathered in the platform where they can be tracked and traced by the company and the customers, which can make it easier to collaborate on a possible ecolabeling scheme.

#### BARRIERS:

The growing delivery service industry are also facing some obvious challenges from an environmental perspective.

The topics is in relation to the use of the delivery routes and their efficiency, single use packaging and combustions-based vehicles.

Also, areas relating to regulation of different type of vehicles and the drivers raises question about how sustainable freight driving can become.

The market is driven by P2P models and therefore there is a great deal of variation in the services. This means that grey zones can occur.

The market for sustainable transport is not yet developed to significant point.

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Ups.com

Uber.com

## AVAILABILITY OF DATA IN THE SECTOR

The service delivery platforms usually have large amounts of data available. The following are the data areas that may be involved in any certification area.

### **USE TIME/FUNCTIONAL DATA**

(use of the asset, time, track/trace)

### **USER DATA**

(profiling, subscription trends, purpose of subscription etc.)

### **GEODATA**

(e.g. user behaviour, penetration, coverage etc.)

### **SERVICE CYCLES**

(maintenance/service performed on physical/spatial assets)

### **PRODUCT LIFE CYCLE**

(environmental impact from production to end-of-life)

### **PRODUCT WEIGHT/VOLUME**

(physical product throughput over time)

### **ENERGY USE**

(production, data storage, logistics, usage, end-of-life)

## FEASIBILITY QUESTIONS FOR ECOLABELING:

Can platform products be certified by an ecolabel without considering the choice of the vehicle by the asset provider?

If yes, then the type of the transportation vehicle should be considered.

The certification of gig economy platforms within delivery services should as a starting point include the cars and focusing on improving this area. For example: what kind of trucks, vans and cars should be required.

The truck market is changing and it makes sense to certify this type of service now. Light trucks are under development, making it possible to impose greater circular requirements for transport service in the future. The following is also an overview of gas trucks in some Nordic countries with Sweden as the largest.

## ACCOUNTABILITY IN THE MARKET?

Several of the Danish freight companies working in the sharing economy works together in (or are members?) the Platform Economics Association in Denmark (FPD), which is the industry association for platform economics companies. The association has developed the labeling scheme: "Responsible platform economics", which should help set the standard for what to expect from platform economics in Denmark. The following are the rules they work on together:

The Platform Economics Association in Denmark (FPD) is the industry association for platform economy companies. We work for the Danes to jointly and with respect for each other to earn and save money on sharing available resources through sharing economic platforms. That is why we have developed the labeling scheme "Responsible Platform Economy", which is to help set the standard for what to expect from platform economics in Denmark. The criteria for the labeling schemes are listed below.

## §1 COMPLIANCE WITH LAWS AND REGULATIONS

The platform must operate in full compliance with all applicable Danish laws and other forms of binding regulation. The platform further undertakes to adhere to the ethical guidelines adopted by the Association for Platform Economics, which aims to promote sustainable and consumer-friendly sharing and platform economics.

## §2 TAX REPORTING

The platform complies with the rules for paying tax. The platform also undertakes to enter into a dialogue with the tax authorities on the disclosure of information to people who make money via the platform to ensure proper tax payment as soon as SKAT requests this or as soon as SKAT's IT systems for this are completed.

Finally, the platform, through its website and in contracts, must make clear and clear awareness of applicable tax rules and guide relevant users and freelancers in how to report correctly to SKAT.

## §3 CONSUMER AND PRODUCT SAFETY

The Platform must have valid and complete protection for consumers so that any damage to products and goods or damage arising from the use of the Platform's services is covered or otherwise insured.

## §4 INSURANCE AND RIGHTS FOR SELF-EMPLOYED PERSONS

The platform is obliged at all times to ensure that self-employed persons are insured against accidents at work through the platform. The platform also commits itself to offering the self-employed to facilitate some of their remuneration for pension, health insurance, holiday allowance, etc. The obligation applies only to self-employed persons (private individuals) who have their primary income via the platform or earn more than 200,000 DKK annually - and not for the self-employed tradesmen on the platform.

## §5 FAIR AND REASONABLE SALARY

The platform commits to pay a remuneration which corresponds to the normal wage level in the sector concerned.

## §6 TRANSPARENT COMMUNICATION

### AND PRICING

Prices, including remuneration and any other costs must be clearly stated on the platform's website. In addition, all other communication must be easily transparent for the customer, so that there is no doubt about how responsibility is shared between the parties. It should also be easy for users to get in touch with either customer service or other responsible staff at the platform.

## §7 CONTINUOUS CONTROL AND RENEWAL OF THE LABELING SCHEME

It is the platform's responsibility at all times to ensure that it meets the criteria of the labeling scheme. The platform commits to apply for an extension of the labeling scheme at the end of each year. Only Danish platforms with taxpayers in Denmark can obtain the labeling scheme.

Source: Danskeplatforme.dk

## 5. DELIVERY SERVICES (FOOD)

### PRODUCT:

A fast-growing number of delivery services, provide new food options for families and people, with meal-boxes (incl. special recipes), catering meals, groceries and take-away food from local restaurants. Grocery and meal-box based platforms operate with own suppliers, production facilities and logistics. Platforms for take-away partner with restaurants/take-out places and use micro workers who wants to supplement with flexible work, some using it as their primary source of income. Deliveries is mainly made on bike and scooters.

**ECOLABEL POTENTIAL: MEDIUM**

**SCREENING RATING: 33 (MAX 48)**

**SECTOR: MOBILITY**

### SHARING CHARACTERISTICS:

The market has both P2P og B2C platforms, which provide secure food. The difference between the platforms is often how many parts of the value chain they handle.

The P2P platforms focus on the actual delivery of food and do not take care of anything else. The delivery is based on gig economy, where companies or individuals ensure the delivery of food. Best known in the Nordic countries is probably Volt or Just Eat. Especially the Finnish company Volt has been very successful in delivering take-away in Copenhagen.

Other parts of the market are based in a B2C model where grocery and take away platforms operate with differentiated and location-based fees on top of the individual orders.

Meal-box platforms use flexible subscription models, where food plans usually go for 2-4 days for 2-5 people with set prices per delivery and variant. The food delivery services enable efficient direct distribution and portion sized packing (limiting food waste). The meal catering services enable efficient industrial kitchen size production.

Data generation is large, since the platforms know a lot about user preferences, geodata, product throughput, packaging, sourcing etc.

#### BUSINESS MODELS:

Access and gig economy

#### POTENTIAL:

Freight and mobility are predicted to be among the largest areas of the sharing economy.

Ecolabels already have made several certifications of transport and mobility services, which provide opportunities for synergies.

There is huge potential in making the entire sector more sustainable and contributing to the transformation. The sector is an easy place to start. The market is already partially sustainable when it comes to P2P models where bicycles are widely used.

#### Barriers:

The market based on P2P models has been subject to much criticism in the Danish media during the corona crisis. One question is whether the market is in a grey zone. Again, critical questions are posed to the gig economy in the public media.

The market is tightly intertwined with the foods that are delivered, which can make it difficult to separate the food from the freight. This can cause some confusion, especially if no demands are made on the food itself.

If ecolabels are involved in this area, demands should be made on the very sustainability of the food. That in turn would give rise to several issues in relation to meat, ecology, and sustainable food production. The sustainable transformation will be less than by ordinary freight.

#### Next step for ecolabels:

Ecolabels should consider whether they want to get involved in a market that is so closely linked to food.

If Ecolabels wants to get involved in the gig economy, it should be considered which areas are least subject to media scrutiny as well as which industries are driven by more professional relationships.

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[wolt.com/da/dnk/](https://wolt.com/da/dnk/)

[deliveryhero.com](https://deliveryhero.com)

[nemlig.com](https://nemlig.com)

[aarstiderne.com](https://aarstiderne.com)

[getfitfood.dk](https://getfitfood.dk)

[retnemt.dk](https://retnemt.dk)

[saltogpeber.dk](https://saltogpeber.dk)

[simplefeast.com/](https://simplefeast.com/) (Surveyed)

[mad.coop.dk/](https://mad.coop.dk/) (Pending)

[kokkenshverdagsmad.dk/](https://kokkenshverdagsmad.dk/)

[maaltidsboxen.dk](https://maaltidsboxen.dk)

[osuma.dk](https://osuma.dk)

[skagenfood.dk](https://skagenfood.dk)

[uber.com/dk/da](https://uber.com/dk/da)

[vigo.dk](https://vigo.dk)

[shop.toogoodtogo.dk](https://shop.toogoodtogo.dk)

## 6. FOOD SHARING

### PRODUCT:

Platforms enable sharing of left-over food or soon to expire food products from restaurants, supermarkets, bakeries etc. The apps distribute offers to multiple of local users, based on profile data, preferences (users can follow favorite local spots) and location tracking. The users can then make pick-ups of discounted food at the end of the day or on the go.

**ECOLABEL POTENTIAL: LOW**

**SCREENING RATING: 33 (MAX 48)**

**SECTOR: RETAIL AND CONSUMER GOODS**

### SHARING CHARACTERISTICS:

The platforms link up private users or social food programs with bakeries, supermarkets, food producers and restaurants. Their left-over food products and meals gets channeled out with the purpose of eliminating food waste.

Information on left-over food products and meals is provided by the local source and distributed on the platform. Data is then collected on the food passing through the system with app purchases. Supermarkets, restaurants or bakeries send offers to local users for quick and discounted pick-ups. The business model is based on varied fee's/commission from the business who uses the platform.

### BUSINESS MODELS:

P2P

### POTENTIAL:

It has a great impact on reducing food waste and therefore ecolabels can support a general awareness and transformation of the market.

#### BARRIERS:

Should type 1 ecolabels work with food?

It is a grey area where there is no control with input and packaging.

There are a limited number of platforms in the market, which may make it too narrow for Ecolabels.

Platforms in the market work with certifications at company level and not at product level, which is probably more meaningful in this market.

Next step for ecolabels

Ecolabels should be consider whether platforms in the food sector is worth going into.

#### REFERENCES:

[yourlocal.org](http://yourlocal.org)

[toogoodtogo.dk](http://toogoodtogo.dk)

[matsmart.se](http://matsmart.se)

[karma.life](http://karma.life)

[redmaden.dk](http://redmaden.dk)

#### DISCUSSION OF FOOD SHARING

Limiting food waste is the core purpose of platforms like [ToGoodToGo](http://ToGoodToGo), [YourLocal](http://YourLocal) & [Karma](http://Karma), which in turn has a great social transformative impact potential. Food waste and loss are globally responsible for 8 % of GHGe, along with the general environmental effects of the global food systems, counting in land use change, forest loss, water use, pesticide/biocides and nutrient loss. ToGoodToGo are a Danish platform, which operates in 12 European countries including Denmark and Norway. It has 11.5+ M users, 25.000+ partners (independent, chains, hotels, grocery stores – hereof 2158 in Denmark) and attracted investments for around 120 M DKK to the further development and scale up of the platform. Today, they claim to have prevented food waste equaling 40+ M kg. of CO<sub>2</sub>e. The Swedish platform Karma operates in 150+ cities and towns of

Sweden and have new operations in Paris and London. They partner with 2000+ stores and have 0,5+ M users today. YourLocal is another Danish platform, which today operates in greater Copenhagen and Brooklyn NYC.

The core business model of these platforms is to provide a sales link between e.g. supermarkets/grocery stores (displaying unsold/overproduced foods) and users who can then buy discounted food items directly through the app from their preferred local stores. ToGoodToGo recently also launched an [webshop](#) with home delivery services of discounted food products they acquire from food producers/supermarket chains. One of the common selling points for the businesses partnering up is that they recover costs of overproduced/unsold food products and at the same time grow their own local customer base through the app.

Many users will shop other items when they pick up food items while restaurants/take-out places can become their new favorites places.

The platforms effectively measure the amount of food that is saved when it comes to: products sales, product types, kg., store, time/date, home distance from users. Local restaurants are encouraged to sell their leftover food as e.g. "lucky/magic boxes", which can be broken down to ca. kg and possible food types. This gives knowledge of how many % food is saved from the waste bin.

## POTENTIAL & PERSPECTIVES

Ecolabel could set the criteria for how food vendors can limit the food waste in the base production. This way the costs of overproduction could technically be recovered by their use of the platforms. As an example, the incentive for e.g. a baker to overproduce bread for the sake of showing an inviting window of baked goods all day long, may be encouraged if the baker knows he can still sell, through a platform, 5-10 breads at reduced price, in the end of the day, and break even, but then still throw out large amount of bread out. Opposite, it could be argued that food vendors will focus more on reducing food waste in general, with more attention to it and thus now have channel to combat the problem.

Based on this assessment, it is found that such platforms have an *obvious green* element imbedded, since diverting food from becoming waste are now made possible by providing the

digital infrastructure for users and local food vendors to make quick day-to-day transactions. Something that wasn't there a few years back. The question is, if ecolabels would have a relevance in making this better than it is today, where life cycle impacts like food sources, production, distribution and transport for individual pick-ups, would be difficult to come by through criteria targeting the platforms.

Ecolabels might have a relevance in terms of setting standards for the to-go packaging that is offered by eatery's, bakers, restaurants etc. The issue is here though, that it might be wrong to focus on the platforms as the key for e.g. new packaging standards at the small food vendors, since they will be autonomous in deciding what packaging they provide for their costumers, which are mainly used for their regular customers and not only for costumers from the platform.

An alternative is to make environmental preferable packaging products a demand to partner with the platform. But it is very likely be an obstacle that prevents the platforms for scaling up towards the small food vendors. Since this is also a young market, it could be argued that criteria set for this market alone would be overdoing it at present.

In the Nordic Swan Ecolabel, food waste reduction measures are already core elements for: Grocery Stores (Swan, Version 3.3), Hotel, Restaurants and Conference Facilities (Swan, version 4.6). Synergy with these ecolabel criteria set could be made more easily with adopting new points/criteria for applicants who provide or participate in a digital food sharing platform. For grocery stores a point system and criteria for measuring the amount of food waste prevented are already in place. This makes it easy to adopt an extension in a future revision – and possibly an easy way to include this market and digital infrastructure to combat food waste.

As a perspective, Ecolabel could develop a set of new criteria that targets small food vendors like bakeries, take-out places, corner stores, butchers and the likes. The new criteria could have a more limited and point-based version that would be easier to apply for the small market players, which does not have the same resources as the big players in the market.

## 7. HANDY- & CRAFTS SERVICES

### PRODUCT:

The sharing platforms enable self-taught/skilled micro-workers to find small jobs placed online by private and professional users of the platform. Typical jobs include handy/housework, garden work, carpeting, plumbing, moving etc.

**ECOLABEL POTENTIAL: LOW-MEDIUM**

**SCREENING RATING: 24 (MAX 48)**

**SECTOR: HUMAN RESOURCES**

### SHARING CHARACTERISTICS:

Like platforms for private cleaning services, these platforms enable micro-workers to find small local jobs placed by the multiple user base on the platform.

Day-to-day and single time jobs payed by the hour or with a bargain price per job done. The platforms charges commission.

The platforms provide public user rating systems and a verification of workers as part of the service. This makes it possible for users to find the best suited for the job.

### BUSINESS MODEL:

Gig, platform and peer-to-peer economy

### POTENTIALS:

The market is similar to the other gig economy platforms.

There are indications that Ecolabels can play a positive role on gig platforms. Especially on platforms where the service is crafts, cleaning or other domestic service. Ecolabels can help to differentiate between the platforms and ensure better customer retention.

## BARRIERS:

The work involves many dimensions and activities, which makes it very complex to certify the area.

The market is not that big yet.

Next step for ecolabels:

Ecolabels should wait and see if the market develops.

It will probably be more natural to certify other types of work before beginning to certify platforms.

## REFERENCES:

[handyhand.dk](http://handyhand.dk)

[meploy.me](http://meploy.me)

[www.care.com](http://www.care.com)

[cleady.dk](http://cleady.dk)

[www.jobbi.dk](http://www.jobbi.dk)

[colego.dk](http://colego.dk)

## DISCUSSION:

Several platforms focus on providing skilled micro-workers with small day-to-day jobs. The work is mainly in the residential/private market, but some also focus on temporary work hires in companies. Homeowners can get help with gardening, moving, plumping, cleaning, furniture upholstery, childcare, tutoring, smaller building projects and many other kinds of minor jobs. The platforms perform a B2C link between self-employed skilled people and the platforms users, where the life cycle impacts should be found in areas like individual transport solution, tools and materials, use of chemicals/cleaning products and waste management. As seen with cleaning

service platforms, some platforms seek to professionalize this kind of job distribution, in terms of upholding regulatory standards, tax reporting service, insurance etc., but many also let this be up to the individual worker to be responsible for. Therefore, there is severe chance that work carried out via the platforms are undeclared/unregulated. The platforms offer a new way of more flexible, digital and possible cheaper distribution of small handy jobs with less transaction's costs for both the users and the workers on the platform, but otherwise it works a lot like traditional temporary employment agencies. The platform [Meploy](#) have established themselves as an alternative temporary employment agent site, where they employ people seeking small jobs and offer those workers to businesses, where payments go through them for a commission. This way they claim to be able cut normal fees/transaction costs with other agents, since they rely on an algorithm and automated system.

#### POTENTIAL AND PERSPECTIVES

It is hard to see a perfect viable way for an ecolabel to thoroughly impact these kinds of service-platforms, since the jobs performed are so varied and the micro-workers using them, are equally scattered on many semi-professional fields. The possibility of low verifiability of the work and types of jobs carried out through these platforms, makes it difficult to see how transparent and valid measures should be established.

It must also be considered that transportation, equipment and materials used on these jobs will be solely managed by the individual micro-worker, why an environmental policy carried out by the platforms would be a big and broad task. If an ecolabel were to develop criteria for these platforms' services it would have to be a limited selection of job types maybe a combination with a general approach to "distributed residential work" where cleaning services could be part of a new umbrella.

Platforms focused on the B2B market with temporary employment, would probably have to be taken out of this equation, since the jobs carried out at businesses would be at the individual companies own varied setups and rule. All in all, it must also be assessed if these kinds of platforms are at all interested in acquiring a possible ecolabel and how/if it could benefit them in some way.

## 8. HOSPITALITY SERVICES

### PRODUCT:

The possibility to share spare room of your house, apartment or any other type of living space has been at the core of the sharing economy transformation. Hospitality based on private estate sharing, includes room or whole home rental and temporary house-swaps. Airbnb is the most successful platform today and boasts 6m+ listings, in 100k cities, spread over 191+ countries (<https://press.airbnb.com/fast-facts/>)

**ECOLABEL POTENTIAL: MEDIUM-HIGH**

**SCREENING RATING: 36 (MAX 48)**

**SECTOR: TOURISM, HOTEL AND OFFICE INDUSTRY**

### SHARING CHARACTERISTICS:

Free space is shared by people who has spare capacity in their home or when they out of town themselves. Increasingly apartments are bought to be rented out fulltime.

Hospitality platforms generally charge commission for providing the service as a % of the bargain price set on the listings, which include insurance of estate and belongings for both renters and the hospitality providers.

Platforms ensure a secure communication platform between users and hospitality providers with listing, rating, payment, calendar systems etc. on top.

Spin-off businesses/business areas now included event, experience, guide and tour services + key, welcoming and cleaning services for people who wants to rent on the platform while being away themselves.

The platforms are highly data driven with extensive user profiling and functions like regular hotel/hostel/BnB distribution channels for both private and more professional hospitality providers.

## BUSINESS MODELS:

Peer-to-peer economy

## POTENTIAL:

The market is among the largest in the sharing economy. Experts emphasize that the sector is the largest in the Danish market and will remain so for a long period. European analysis' place the market in a fourth place in 2025.

The idea that platforms can certify private homes / people is very interesting and can trigger big changes in individual homes and society in general. The idea that consumers are activated as an innovator and product developer is also interesting and very much in line with the way the platforms work. It is therefore likely that a certification would work.

Saving capacity by using unutilized space is also a plus.

Ecolabels already has experience from the hotel industry, which makes this an area of great interest.

It would give a great branding effect for both platform, ecolabels and individuals if it is feasible.

## BARRIERS:

The market is dominated by one major player, which can be a barrier.

The platforms are global, which means that the certification should be recognizable across borders or adapted to individual markets / users.

Is it realistic to activate and certify private consumers? What should the criteria be - food, energy, cleaning, washing etc.?

Is there a sustainability risk for Ecolabels by getting involved in a market that in principle gives individuals more money and thereby possibility to travel even more?

Are there too many grey zones and general problems in the market in the case of tax, urbanization, price increases on apartments, etc.?

Can ecolabels ensure control of so many individual homes and can the inherent control system in the platforms be used?

Next step for ecolabels:

Ecolabels should discuss whether the market is relevant and there are too many issues / barriers to get involved more actively.

#### REFERENCES:

[minlejebolig.dk](http://minlejebolig.dk)

[booking.com](http://booking.com)

[airbnb.dk](http://airbnb.dk)

[homeaway.com](http://homeaway.com)

[homeforexchange.com](http://homeforexchange.com)

[lovehomeswap.com](http://lovehomeswap.com)

[homeexchange.com](http://homeexchange.com)

[keybutler.dk](http://keybutler.dk)

[bytbolig.com/da](http://bytbolig.com/da)

[flipkey.com](http://flipkey.com)

[wimdu.com](http://wimdu.com)

#### *HOSPITALITY SERVICES DISCUSSION*

##### *(PRIVATE ESTATE SHARING)*

Sharing your apartment, house or vacation home is a global phenomenon today. Platforms like [AirBnB](https://www.airbnb.com) or [HomeExchange](https://www.homeexchange.com) are almost synonymous with the sharing economy and sharing platforms today. This phenomenon has spread to all corners of the world and have had a huge impact on tourist culture, housing dynamics in cities and modern travelling patterns. It is now very common that people living attractively in e.g. cities, are renting out their apartment or extra rooms, while maybe using the extra generated income to travel abroad themselves and in some places buy and manage several apartments as a way of living. Spin-off services with cleaning/house-keeping, key-delivery, welcoming and online reception have developed to service this industry of private estate rentals, making it easier to be part of the platforms whether you are renting or hosting, or both at the same time. Keybutler, who claims to be the biggest of those

platforms in Denmark, Norway and Sweden, have now also targeted property management and short-term rentals of [commercial buildings](#).

In a previous study from 2017, the direct life cycle impact on CO<sub>2</sub>e from private estate sharing are found to be less compared to hotels, since hotels have a lot of energy intensive operations. This includes use of water, heating/cooling, electricity, with food making in professional kitchen/bars, pool/spa, more frequent cleaning. This amounts to 85% of GHGe related to the life cycle impact of a hotel building operation.

## POTENTIAL & PERSPECTIVES

It is questionable if Ecolabel could positively influence environmental impacts from the P2P based hospitality platforms, since at the core of this operation it is totally managed by private individuals renting to other private individuals. This would mean, that platforms would have to enforce criteria on thousands of random hosts, which must be considered to be unfeasible.

A more likely scenario is that a platform could pick out premium/super hosts with a longer history of using the platform and a more professional rental business around their estate. This would maybe enable platforms to advertise specific and special environmentally friendly homes at selected locations. It would however require, the local offices of the platform to self-audit and be in more direct contact with those hosts to ensure the new standards are met, meaning an increase in the transaction costs that has to be derived from the commission they generate.

The benefit for the hosts would be to get more standout profiles and target new customer segments, which subsequently should cover and increase their income from renting out an attractive "eco-home". A partnership agreement between an ecolabel organization and platforms like Airbnb, could possibly look into this if the model is feasible and relevant from both a commercial and environmental perspective – e.g. through a pilot project. Relevant environmental issues to target could be setting demands for; cleaning, offered amenities, included food/drinks (like breakfast), shared bikes and energy/water saving installations.

Potentially easier and a more effective alternative for ecolabels like the Nordic Swan Ecolabel is to target the before mentioned spin-off rental-service businesses of private estate sharing. Life cycle impacts to target could be: cleaning service, provided amenities, washing and offered sheets/towels, waste management and the transport to and from the homes they administrate.

This could be a potential competitive advantage for some these business in this market, and ultimately something to highlight for the private users in their listing.

Going back to the first approach with selecting environmental preferable homes in a partnership with platforms like airbnb, the selection of “eco-friendly” listings to advertise, could also be helped if homes with an ecolabelled rental service were picked out. This means a potential partnership would include both the platform, rental service and selected users with listings. The rental service business could also form some sort of quality insurance/satisfaction link with the costumers, on how the listings live up to environmental criteria, when being in close contact with the tourists both on arrival and leave.

The build in P2P rating systems on the platforms, forms the core quality and trust ecosystem for users. A partnership project would thus have to see how, objective criteria and the flexible user-rating systems on platforms could effectively merge or complement each other.

It should be strongly noted that such a partnership potential hasn’t been analyzed through interview with stakeholders and simply should be seen as an exploration of the ecolabelling potential in this evaluation.

From the ecolabel’s perspective, they would somehow rubber stamp the platforms as being environmentally preferable (to e.g. hotels), even though it is argued in several studies that social and environmental externalities/rebound effects like increased tourism, flying, consumption, gentrification/price jumps in cities are possibly neutralizing or worsening the social and environmental benefits they create as whole.

On the other hand, a more pragmatic attitude would say that this industry won’t disappear soon and that it should be seen as an embedded part of the accommodation offers available today, why effecting what happens on the ground through possible partnerships and criteria development could be way forward for the Nordic Swan Ecolabel to expand the range covered within the hospitality industry today.

The validity of a new criteria would need deep testing with an alternative setup as described, so a new product category for “eco-friendly” home listings could become reality. However, presently it is not found possible to make valid criteria that could be implemented directly by platforms. This is highlighted by the closedness of the platforms in previous studies<sup>10 (p. 58)</sup> where it has been hard

to engage them on data exchange for scientific studies. This shows some problems in terms of transparency. Verifiability, validity and transparency are subsequently hard issues to come by.

## Ecolabeling in a Peer-To-Peer economy?

The analysis of several markets shows that Peer-to-Peer models where the consumers are engaged will be difficult for (type 1) ecolabels to work with. This includes platforms such as secondhand shops, private leasing of assets and complicated gig services such as handy help.

The problem is control with the products on the platform. A secondhand shop cannot guarantee harm free ingredients or the correct production facilities for a given product put on sale by a user. Even though it may be desirable, it would not make sense for the platforms to try and fulfill the normal criteria put forward by (type 1) ecolabel. There will be very few products to sell, if all products must be documented. A person renting out his or her home, car, boat or tool will have a hard time documenting and complying with sustainable criteria unless the platform is also involved with the sale/leasing of the boat/car/house etc.

Platforms such as eachthing og Hollandske Madaster are some of the companies, who tries to obtain full transparency and lasting documentation of the products. Their work can be influential for ecolabelling of other companies in the future. At present Type 1 ecolabels will only make sense in a few limited

peer-to-peer businesses where the platforms have high levels of control with the products on the platform.

In our interviews and discussions with persons from secondhand platforms and other platforms two ideas were put forward.

### THE IDEAS WERE:

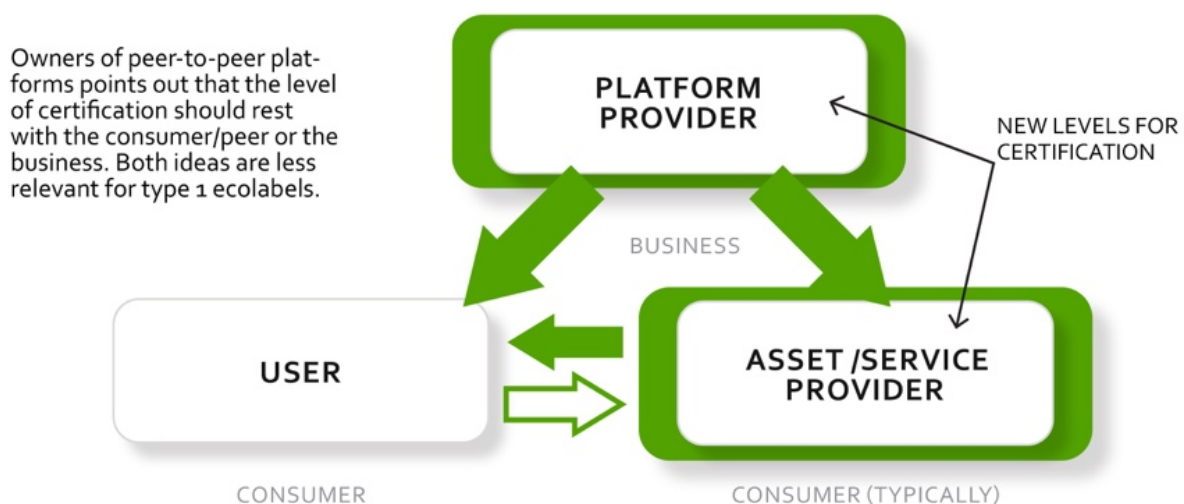
The certification should solely focus on the platform. Area of interests should be the daily operations, sustainable goals etc. This means that the certification would be limited to the

business level. Labeling projects like B-Corp have focus on this level and we see an upcoming trend for some companies and platforms to work on this level. But it would not be relevant for a type 1 ecolabel to work in that direction.

Certifications of the peer by focusing on the individual level would be interesting. If persons can be certified as products by their use of renewable energy, the sustainability of products bought, their use of food, consumption, travel etc. it would be interesting. This could move the market and transform it. Another interesting perspective is the work carried out by the platform Deemly, which tries to bring trust into the peer. This area has not developed in the Nordics yet, but may be relevant in the future.

Presently, both ideas seem unrealistic for type 1 ecolabelling to work with. But the ideas give a hint of, which direction the sharing economy may go in the future and the thoughts in the businesses.

## DO WE NEED NEW LEVELS FOR CERTIFICATION



## 9. MICRO MOBILITY

### PRODUCT:

City-bikes, e-city-bikes and e-scooters are part of a super fast-growing market of micro-mobility services mainly operating in cities around the world. The services offer a solution to congestion and pollution problems and is an environmentally friendly answer and flexible alternative to public/private modes of transportation. Platforms enables users to find and use the bikes/scooters on the go and is seen as an integrated part of the future transportation eco-system with multiple mobility as a service offers.

### ECOLABEL POTENTIAL: MEDIUM-HIGH

**SCREENING RATING: 36 (MAX 48)**

### SECTOR: MOBILITY

### SHARING CHARACTERISTICS:

Business models are built on set price pay-per-use models, based on minutes or hourly rates, and some provide discounts for longer use-times (x-hours/time of day).

Platforms uses geofenced solutions for the operation area, where the bikes/scooters are found and returned to. Locating, unlocking and payments are made through dedicated apps.

Some e-city-bikes solutions have chosen dedicated docking stations for charging and set distribution around the cities. In Nordic cases it is a part of a public transportation offers (Helsinki/Copenhagen).

E-scooter companies generally operate with a "harvest" model, where all scooters with low charge, gets collected and charged elsewhere overnight to be redistributed the next day. This job is usually filled by micro-workers, so-called "juicers" with pick-up trucks/vans, who works for the platform. Other platforms employ people to do the groundwork of collection, charging and distribution. This is the costliest part of the business model.

### BUSINESS MODELS:

Access Economy

## POTENTIAL:

Mobility is the largest economy within the sharing economy.

Ecolabels (Der Blaue Engel) already have experiences with the market

The users are adapting to the market and desire more services, which will lead the market to expand.

It is based on a B2C access model, where there is full control over the supply to the market. B2C models in the transport sector are generally an interesting area, which is not so complicated.

Several players are fighting for the market, which could make sustainability an issue in the effort to stand out.

The economy has a medium potential for sustainability and improvements from a circular perspective.

## BARRIERS:

This part of the sector is less polluting than other parts of the transport sector, so why focus on this market?

Is increased mobility with, for example, scooters part of the ecolabel's focus areas, or is there a sustainability risk involved in this area.

Should ecolabels look more at new bicycle concepts such as swap bikes and support the bicycle market more?

The companies in this part of the sharing economy are focused on scaling up their business and might be less concerned with sustainability.

Next step for Ecolabels:

Ecolabels should discuss how they can support the access economy, including whether interaction between individual mobility platforms can be established.

## REFERENCES:

[donkey.bike](https://www.donkey.bike/)

[voiscooters.com](https://voiscooters.com)

[tier.app](https://tier.app)

[li.me](https://li.me)

[bycyklen.dk](https://bycyklen.dk)

[lyft.com](https://lyft.com) (Int.)

[bird.co](https://bird.co) (int.)

[kaupunkipyorat.hsl.fi/en](https://kaupunkipyorat.hsl.fi/en)

[sharebike.com](https://sharebike.com) (Surveyed)

<http://citybikes.se>

Swappfiets

## 10. PRIVATE TRANSPORTATION

### PRODUCT:

As part of the transition to and adoption of Mobility as a Service, platforms for cars and ridesharing forms a new alternative to private car ownership and public transportation solutions like city buses, metro, trams and trains. The platforms enable users to grab a car on the go/locally, plan for flexible long-distance travels, or catch cheap private rides from A to B with other travelers. These services provide access to a car, and sometimes a cheaper or more flexible alternative to private car ownership or trains.

**ECOLABEL POTENTIAL: HIGH**

**SCREENING RATING: 39 (MAX 48)**

**SECTOR: MOBILITY INDUSTRY**

### SHARING CHARACTERISTICS:

The new services offer direct alternatives to mobility solutions like; private bus-services, minibus services, private cars, traditional car-rental, private car-leasing and classic taxi-services, and indirectly on public offers like trains, trams, metro and busses, besides regular walking and biking. Car-sharing are found in many forms:

B2B models for companies, municipalities, and housing unions which can include an option to lease vehicles directly from them, or just simply the electronic key-system/management platform to share and track the vehicles on.

Station based car-sharing, where the vehicles have dedicated parking spots (e.g. with charging) around town and then a monthly subscription model allowing users to book them.

Geo-controlled free-floating cars for usage on per-per-use models (minute/hour/day rates) in larger cities.

Platform-enabled sharing of privately-owned cars with the individual car owner setting their own price for other local users of the platform to book them. The platform then charges commission

on the bookings – new business models include private car-leasing with the option to share the vehicle through the same platform (+ insurance).

Ride sharing, where users are matched up on location and destination through the platform, to share the cost on a pre-negotiated price – platforms then charge commission for their link-up service.

Business models range from: pay-per-use (all costs included, pay per minute, with options to buy discount hour packages, weekend discounts etc.).

Subscription models, is based on usage-differentiated monthly base fee's, booking fees and subsequently use payments based on the driven km or/and hourly rates. Discounted rates are thus offered for primary users and in B2B agreements.

The myriad of car-sharing solutions are proven alternatives to private car ownership, mostly targeting people in cities making up a critical customer mass and to become an add-on to public transportation and micro-mobility solutions. Other customer segments are larger organizations or housing unions, who want a fleet management and car-sharing system for their employees or residents.

Access-based platforms build on great sets of data (supply, profiling, usage, geodata, product data, EoLM) to select and utilize their vehicle assets most efficiently and provide a competitive service to regular car-ownership.

Maintenance, cleaning and asset recovery are key elements for most platforms to integrate.

## BUSINESS MODEL:

Collaborative Economy/Consumption

Peer-to-peer economy

Access economy

## POTENTIAL:

All business models are needed in the mobility mix of both the present and future, since they cover different areas and consumer segments, but help increase the more efficient use of cars overall. However, some of the business models are in direct competition with each other today.

Setting criteria around efficiency use of the car-service, depending on its nature. Minimum substitution level of private owned cars.

The potentials are high in this sector. Can Ecolabels help to transform the sector into a more sustainable sector with less material waste and less pollution?

Ecolabels already has a focus on this sector, so there is knowledge about this area in the organization.

Pure access-based models offer a lot of opportunity to work around the production of the cars, car-types and design, and setting environmental criteria for EOU/EOL (repurpose, reuse and recycling).

Both a potential and maybe a barrier, to set design requirements for material use and recycled content in the design of cars. Maybe better to include in a point model.

Require companies to work with smart-grid solutions and conscious charging, when there is most RE in the grid or off peak-demand.

Washing and maintenance routines on site – done with ecolabelled products and possibly dry-washing. Ecolabelled car-washing if done off-site.

Onsite waste management/information – collaboration with local authorities on providing guidance to users and making street sorting/waste bins available e.g. in hot spot areas.

Different pricing depending on type of car/how energy efficient cars are.

Minimum requirements of guidance for more economical driving with rewards.

Minimum requirements for car usage (driven km) over the course of the lease

Requirements for EV's only or high percentage of EV's in the fleet of services

Cars are generally leased by the companies, which will have a positive impact since they will get used much more each day and over the course of the typical 3-year cycle compared to regular car-ownership. This means a better use of the resource, while having faster adoption of new technology, safety and electrification in the car-pool.

Criteria should be developed accordingly with the future outlook of robo-taxi services and privately-owned AV's (that can be rented out on sharing platforms/ or new businesses that will

evolve around this), will be coming to market in the next decades. A huge change will occur here, when cars don't necessarily have to be parked or charged on the streets of the city's overnight, but can drive out of the inner city themselves for service and then "go to work" in the early morning.

Future potential for AV's to also operate in less dense populated areas – substituting inflexible public bus-services and providing better links between countryside and city. However, there is a need for cars to operate from cities to provide a critical mass of costumers.

#### BARRIERS:

Skeptical user who are used to or prefer gas-powered vehicles over EV's or Hybrids.

Will an increased focus on private cars result in increased consumption of cars?

To encounter that car-owners will drive more ecofriendly and take care of their own car, much more than a user would – especially with free floating car services.

Leasing with the option to rent out, opens up for car-leasers who wouldn't otherwise have chosen to have a car. However, it also makes cars available to others who just need to rent a car occasionally. Trash culture among users in relation to drop off situations.

Possibly a hidden preferability of subscribers/users to comfort and luxury vehicles over maybe smaller and more efficient cars, that would have been much better for the use of space in cities and less emissions.

Ecolabels can't regulate spatial use (for parking) and residential licenses, which is up to the local authorities.

#### NEXT STEP FOR ECOLABELS

Access based companies with business models like ShareNow and LetsGo offers the best options for ecolabelling and could benefit from having a set of sustainability criteria. Platforms such as GoMore, who offers both ride-hailing and P2P car rental, has less control of all the vehicles presented on their platform, where users can both rent out their privately bought vehicle or vehicles leased through the company.

It will thus be necessary to divide ecolabel criteria into categories for the different types of business models, so the different business areas of the individual companies comes into play. As

an example, the leasing-with-option-to-rent-out part of GoMore's business model gives them much better opportunity to control the whole life cycle and efficient usage of the vehicles.

All three business that was surveyed expressed a positive view on ecolabels, could see a potential for it to evoke trust in their brand and service and would likely apply if such a criteria set was developed. In this, they were very open to help in the development process of such.

#### REFERENCES:

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gomore.dk (Surveyed)

letsgo.dk (Surveyed)

greenmobility.com

your-now.com

snappcar.dk

tadaacar.dk

m.co/se (former sunfleet.com)

aimosolution.com

bilkollektivet.no

nabobil.no

uber.com

lyft.com

#### FEASEABILITY QUESTIONS FOR ECOLABELLING

The mobility market is fast growing internationally and expected to revolutionize mobility solutions over the next decades. Research shows that car-sharing can substitute about 5-8 cars in cities, against present private car-ownership. Those numbers are of-course very depending on the types of services provided, their market penetration and local car culture, but tells something about the possible efficiency gain on the usage of those vehicle assets. Regular cars are only utilized 5% of the time, making them idle most of the time and taking up valuable space.

The future of autonomous vehicles, is expected to start mass adoption over the next decades and is expected to make car use more efficient e.g. through robo-taxi, ride-pooling and ride-hailing services. The technology for autonomy is close to being there, while regulation and quality of road infrastructure (signs and markings) is behind in this transition. Some fear the increasing congestion of vehicles through an unprecedented new influx of short-ride costumers will simply neutralizing the efficiency gain. On the other side, fewer vehicles would be needed to perform the same services while many more mobility needs could be met. No one really knows what the future holds in this matter, but great changes are lining up in the foreseeable future. Now, the main difference lies in how cars are owned (from a private to an enterprise asset), giving control of the products and thus pushing access-based models to take over a lot of the car-based mobility. This is why we talk about "Mobility as a Service"(MaaS) and every car conglomerate in the world has a branch out to be part of this transition – even Apple is working in the shadows to make an AV of the future, which is deemed to be a total new market for entertainment and work. Hence, just look to the infotainment systems of Tesla cars out there today. Access based business models will thus also allow for new sustainability measures to be adopted by mobility providers, why ecolabeling might have a role to play in setting a standard for circularity in this sector.

## MARKET ANALYSIS

Three different companies have been surveyed in the study including ShareNow (former DriveNow), LetsGo and GoMore, each representing different business models within car-sharing. Here we will go through some of the highs-lights and draw the picture of the essential potentials and barriers for ecolabelling of car-sharing services. Based on the revenues and growth of these companies and the vast number of companies and organizations providing or using car-sharing, the Nordic market cap is in the 100's m. EUR or potential over a billion EUR as of now. And growth and transition to more access-based mobility is in the future line everywhere.

### *SHARE NOW*

#### *(FREE-FLOATING/ONE-WAY CAR-SERVICE)*

The franchise is owned by of the international conglomerate BMW and Daimler AG, the enterprise offers a range of services which, besides SHARE NOW, includes; parking, charging and

mobility planning. However most of these other services are not yet available in the Nordics. Recently the two similar operating free-floating car services Car2Go and DriveNow was fused in to one and now called [SHARE NOW](#). In the Nordics they currently operate what has until recently been *DriveNow* in Denmark and Finland. We have talked to the Danish franchise operator Arriva, who runs the service in Copenhagen. Their current turnover in Copenhagen is about 20 m. EUR/yr. and in high growth. They currently have one direct competitor in Copenhagen called Green Mobility (+400 cars) who are offering a somewhat similar service-product (and are also in Aarhus, Oslo, Gothenburg and Malmö).

In the startup of this service it was only electric vehicles which was introduced (400 electric BMW i3s) and today EV's are still the majority of the cars they operate in the City. However, in recent years they have found it necessary to introduce petrol vehicles, which then makes up about 1/3 of their fleet today. This is mainly because parts of their user-base wanting security of range (if they go out of town e.g. on weekend trips) and other users simply being skeptical of driving an EV. SHARE NOW operates with a service level, where they want to always secure an available car within 300 m. in their operational zone of the inner city. In extension they have partnered with the airport, hospitals and IKEA, as target locations outside of the inner city where users can also leave the cars. Washing services is made with ecolabelled products on site, but generally ecolabelled products and organic food are consciously chosen throughout the whole company (as part of the Arriva Group) e.g. for printed materials, events and hand-outs.

Every deployed car makes about 6-8 trips a day and are driven for 11-12 km on average per trip. As of writing they claimed to have about 90.000 users in Copenhagen (which have been active), and about 20-30% of the users are booking cars every month. Cars are unlocked through their app. Bookings are often based on a sense of "security" and convenience. In their own study, they saw that people chooses the most charged (fx 80%), even though a car with e.g. 50% charge is closer or right next to the others. In this, if one car is plugged in for street charging people picked the one that wasn't. So, the psychology and hereby "sense of having enough" and what is easiest for them, makes a big difference among the user-base. The way SHARE NOW gets the cars charged are by awarding free SHARE NOW credit for charging or refueling the car, depending on how discharged the car was at the end of the ride.

They found that about 60% prefer EVs and are enthusiastic about that for environmental reasons.

About 30% don't care and 10 % prefer ICE cars. Best indications from their data shows, that 1 of their cars substitute 6 new cars in the city over time. Convenience is a big factor with flexible drop and drop off sites all over the city.

Cars are leased from BMW and the model i3 was cherry-picked because it was designed with huge environmental advantages and a good life cycle approach. Light weight carbon fiber is used in the cars structure and produced in Germany with local resources instead of relying on a global supply chain. 95 % of the car is recyclable. E.g. most reinforced plastic can be recycled and the dashboard is cellulose based (recycled paper mass). When BMW gets the cars back from SHARE NOW, after the lease is over, they are sold on the secondhand market. The large and expensive batteries are taken out and repurposed e.g. as storage in buildings (when reaching approx. 70% of original charge capacity). After EOL batteries are sent back to the OEM for recycling. This all means that a lot of the resources stays in the loop and BMW is doing some good work to create a circular business around the cars they manufacture.

SHARE NOW also has some issues. They can see that ICE-cars are only driven 9-10 km/l. So there is huge educational hurdle for them to control and build incentives for them to make users drive more eco-friendly because it is not their cars and they pay-per-minute. They try to counter this by e.g. coding the cars to startup in eco-mode, or trying to engage costumers with information and maybe future bonus incentives to drive more efficient. Here they believe in the carrot and not the whip.

Another big problem is waste on the street and other costumers meeting piles of plastic, carboard and food waste that the previous user just dumped after their ride. Here, they are trying to work with information and City of Copenhagen and the Airport to provide available sorting options close to main drop of points. However, it is still a hard issue to come by. Vandalism and smaller damages of the cars are also a huge issue for them, why they have about 25 cars in for service constantly.

## LETS'GO

(STATION-BASED/TWO-WAY CAR-SHARING)

LetsGo is a Danish company offering station-based/two-way car-sharing. In collaboration with local authorities and other private companies, they have designated parking spots for their about

250 cars mainly placed in Copenhagen and Aarhus. With different monthly subscription plans (from about 50 DKK/m), it lets you book and use wide array of different car types, sizes and mini-vans. Here you pay a lower fee per hour and the km you drive. The target segments are city residents, who needs occasional access to cars, but otherwise bikes or uses public transportation for their everyday lives. LetsGo have +4000 subscribers.

LetsGo are similar to swedish M (former Sunfleet, backed by Volvo Car Mobility) who has +550 cars in cities and towns across Sweden – mainly in Gothenburg and Malmö. As a subsidiary company called Letsgo Fleet Management Systems they also sell their hardware/software for managing, tracking and electronic key/app system to local independent, private and public car-sharing organizations. Here they have delivered their system to Bilkollektivet in Oslo, who has +250 cars, but increasingly also sell the technology to municipalities, independent local private car-sharing organizations and larger companies.

LetsGo has under 15% EV's in their fleet, since most of their subscribers are using the cars for occasional longer rides e.g. to their holiday home or family, and previously didn't book these much. Here they decided to partner with Toyota and today their fleet consists of hybrids and plug-in hybrids with a battery range of about 60 km. This means they also consciously decided to skip diesel cars and go for more flexible and environmentally friendly cars. In these years better EV's are coming to market with longer range and charging capabilities, why it is likely to change what cars they want to lease in the future. In addition, some potential customers have aired that they didn't want to subscribe, since they LetsGo had to few EV's available today.

In their data and costumer surveys, they found that 1 car is substituting around 8 cars. This means 8 families who would have chosen to buy a car instead, gets serviced this way. LetsGo claim their cars are in use for about 35% of the time. So no matter what, this saves a lot of resources and space compared to regular car-ownership. Another advantage they have is parking with designated spots, which makes a big difference to most subscribers in the city. LetsGo sees that cities residential parking license makes a big difference in e.g. Norway and Sweden, where the price per year is much higher than in Denmark. This makes the incentive to choose car-sharing subscription greater against owning a car.

LetsGo has made conscious choices to use dry-wipes for cleaning the cars as well as tire-change on site. This means nothing goes directly to the sewer and the equipment is taken to be cleaned industrially and is then reused.

## GOMORE

### (RIDE SHARING/P2P CAR RENTAL)

Starting out as a Danish company, Go More are also present in Norway and Sweden today.

GoMore was started as a ride-sharing service and still offers this option to link up people going one-way through their platform. The other business area is private car owners who uses the platform to rent out their car to other users (P2P) on independently chosen day prices. They then charge commission for making those links and provides insurance while the car is in the hands of another user. Private car owners naturally choose when and how often their car is available to rent on the platform – exactly like an AirBnb host would.

GoMore recently introduced an electronic key service, where they will install (free of charge) a module in your car allowing people to book and rent cars without having to meet up. The owner is charged 200 DKK a month to have this installed, but is then freed from the hassle of meeting up for key-exchanges. This is a huge advantage and GoMore writes that such cars gets book up to 5 times more than other cars on the platform.

Another business area is regular leasing of cars through the company, where they offer a wide array of models including EV's and Plug-in hybrids from e.g. Peugeot, Hyundai, Kia and Tesla. Together with their insurance this leaves the car-leaser with an option regain some of the monthly payment by renting out the car on the platform, which about 50% does.

## POTENTIAL DATA GENERATION FOR VERIFIABILITY

Depending on the type of car-sharing service and control level of the business model, the companies have different opportunities to measure and collect data from their service-products (and the vehicles used to deliver them). Those vast datasets can thus be used to measure and verify the environmental performance of the service in question. Of the three companies surveyed in the study and their responses, data and information is spread out as seen in the table

below. ShareNow has very good information around the full lifecycle (from raw material sourcing to EOL), whereas GoMore naturally has much less. However, with GoMores services-product *leasing-to-ten-out* they could technically get much closer to the car-brands they collaborate with, if they want to in the future. The direct link between ShareNow with the OEM of the cars they operate provides a huge advantage here compared to the other service-providers, since they can select and return vehicles directly from them, with much more in depth information on their production and EOU destiny. Also, they already have deployed the technology to gather real-time data on their whole fleet e.g. where the cars are, their acceleration, speed, battery level and so forth.

	USE TIME/ FUNCTIONAL DATA  <i>Usage, acceleration, speed,</i>	USER DATA  <i>profiling, subscription trends, purpose of subscription, booking behavior</i>	GEODATA  <i>user behavior, penetration, coverage, heatmapping</i>	SERVICE CYCLES  <i>maintenance/ service performed on vehicles</i>	PRODUCT LIFE CYCLE  <i>environmental impact from production to end-of-life</i>	PRODUCT WEIGHT/ VOLUME  <i>throughput of vehicles over time</i>	END-OF-LIFE MANAGEMENT  <i>reuse handling, sorting, recycling, reutilization/ remanufacturing</i>	ENERGY USE  <i>For production, data storage, logistics, usage, end-of-life</i>
ShareNow								
LetsGo								
GoMore								

#### POTENTIAL:

- All business models are needed in the mobility mix of both the present and future, since they cover different areas and consumer segments, but help increase the more efficient use of cars overall. However, some of the business models are in direct competition with each other today.
- Setting criteria around efficiency use of the car-service, depending on its nature. Minimum substitution level of private owned cars.

- Pure access-based models offer a lot of opportunity to work around the production of the cars, car-types and design, and setting environmental criteria for EOU/EOL (repurpose, reuse and re-cycling).
- Both a potential and maybe a barrier, to set design requirements for material use and recycled content in the design of cars. Maybe better to include in a point model.
- Require companies to work with smart-grid solutions and conscious charging, when there is most RE in the grid or off peak-demand.
- Washing and maintenance routines on site – done with ecolabelled products and possibly dry-washing. Ecolabelled car-washing if done off-site.
- Onsite waste management/information – collaboration with local authorities on providing guidance to users and making street sorting/waste bins available e.g. in hot spot areas.
- Different pricing depending on type of car/how energy efficient cars are.
- Minimum requirements of guidance for more economical driving with rewards.
- Minimum requirements for car usage (driven km) over the course of the lease
- Requirements for EV's only or high percentage of EV's in the fleet of services
- Cars are generally leased by the companies, which will have a positive impact since they will get used much more each day and over the course of the typical 3-year cycle compared to regular car-ownership. This means a better use of the resource, while having faster adoption of new technology, safety and electrification in the car-pool.
- Criteria should be developed accordingly with the future outlook of robo-taxi services and privately-owned AV's (that can be rented out on sharing platforms/ or new businesses that will evolve around this), will be coming to market in the next decades. A huge change will occur here, when cars don't necessarily have to be parked or charged on the streets of the city's overnight, but can drive out of the inner city themselves for service and then "go to work" in the early morning.
- Future potential for AV's to also operate in less dense populated areas – substituting inflexible public bus-services and providing better links between countryside and city. However, there is a need for cars to operate from cities to provide a critical mass of customers.

## BARRIERS:

- Skeptical user who are used to or prefer gas-powered vehicles over EV's or Hybrids.
- To encounter that car-owners will drive more ecofriendly and take care of their own car, much more than a user would – especially with free floating car services.
- Leasing with the option to rent out, opens up for car-leasers who wouldn't otherwise have chosen to have a car. However, it also makes cars available to others who just need to rent a car occasionally.
- Trash culture among users in relation to drop off situations.
- Possibly a hidden preferability of subscribers/users to comfort and luxury vehicles over maybe smaller and more efficient cars, that would have been much better for the use of space in cities and less emissions.
- Ecolabels can't regulate spatial use (for parking) and residential licenses, which is up to the local authorities.

## GOING FORWARD

Access based companies with business models like ShareNow and LetsGo offers the best options for ecolabelling and could benefit from having a set of sustainability criteria. Platforms such as GoMore, who offers both ride-hailing and P2P car rental, has less control of all the vehicles presented on their platform, where users can both rent out their privately bought vehicle or vehicles leased through the company.

It will thus be necessary to divide ecolabel criteria into categories for the different types of business models, so the different business areas of the individual companies comes into play. As an example, the leasing-with-option-to-rent-out part of GoMore's business model gives them much better opportunity to control the whole life cycle and efficient usage of the vehicles. All three business that was surveyed expressed a positive view on ecolabels, could see a potential for it to evoke trust in their brand and service and would likely apply if such a criteria set was developed. In this, they were very open to help in the development process of such.

## 11. PACKAGING (REUSE/MULTIUSE)

### PRODUCT:

Reusable packaging solutions are often very efficient today, when it comes to e.g. milk crates or eur-pallets. However, new platforms offer alternative options for areas where single-use or simple recycling are the dominant choices. This includes reusable containers for food and personal care, boxes for to-go meals and soft packaging for smaller freight packages.

**ECOLABEL POTENTIAL: MEDIUM**

**SCREENING RATING: 27 (MAX 48)**

**SECTOR: CONSUMER GOODS AND RETAIL**

### SHARING CHARACTERISTICS:

A few companies have started to offer new alternatives, rivalling the dominant cardboard and single-use plastic packaging options used for food and online freight. This way packaging is shared between many people.

The platforms provide circular ecosystems with production, distribution, re-collection system and sanitation/cleaning of the reusable packaging.

These packaging options are focused on multiuse, where the assets are returned and looped as much as possible.

A model for to-go boxes are targeting the "zero-waste community", and places annual subscription fees on the users, which in return gets to use the system.

A reusable container system for food/care products has a business model build on top of a deposit-refund system with a base subscription model for zero-wasters. Suppliers are selling their products on the platform and include auto-refill options after the containers have been collected and cleaned.

A small freight reuse-packaging concept has built a B2B concept where they provide a packaging ecosystem e.g. for online clothes shops, that enables easy returns (in the same packaging). A voucher is then placed on the packaging and can be claimed by the costumers.

A varied data collection is deemed eminent, since asset management and reuse are ingrained in the concepts.

#### BUSINESS MODELS:

Platform and B2B

#### POTENTIAL:

Packaging is a huge problem for companies who wish to work with circular economy.

The access economy may be an area where ecolabels can make a standard certification process and hereby help spread the model to other sectors.

#### BARRIERS:

Limited market at present

It is difficult to know whether the business models for reuse of packaging will survive in the long term.

Is it much more sustainable to produce quality packaging than reuse cardboard for example?

Next step for ecolabels

Ecolabels should wait and see if the market grows and then assess whether the sustainable potential is large enough.

#### REFERENCES:

[originalrepack.com](http://originalrepack.com)

[loopstore.com](http://loopstore.com) (Int.)

goboxpdx.com (Int.)

## 12. STREAMING

### PRODUCT:

The platforms give people access to stream flow tv and movies/series. We have only mentioned the most popular services in The Nordics above. All in all, there are many streaming services and the market is huge. The market is similar to other services in the same sector including several online services and data storage.

**ECOLABEL POTENTIAL: HIGH**

**SCREENING RATING: 42 (MAX 48)**

**SECTOR: ENTERTAINMENT, MULTIMEDIA AND TELECOMMUNICATION**

### SHARING CHARACTERISTICS:

Based on a subscription where the users pay for access to the service

The price is based on the service rendered

The content is controlled by the platform and it is a B2C model.

Maximal use of content without physical products such as dvd players.

### BUSINESS MODELS:

Access and platform access

### POTENTIAL:

The market one of the biggest within the sharing economy. Experts highlight this market as the second or third largest market in sharing economy.

Acces economy is an easy area for ecolabels to work with.

The business is using huge amounts of energy to storage of data in the cloud. A lot of this energy is based on fossil fuels. Therefore, the business has the potential to change the global CO<sub>2</sub> footprint.

Big data centers use many materials and are expanding.

In addition, the location of the data centers is relevant in terms of utilizing renewable energy from excess power.

Movies, tv-series, and games are very similar markets. A certification in one area could inspire other to do the same and easily be transferred from one business to another.

#### BARRIERS:

The platforms may not see the need for a certification, which can be challenge.

Several services operate abroad.

It will be difficult to change the sector overnight.

Step-by-step changes need to be embedded, including work on roadmap methodology. The companies must accept to use renewable energy.

#### NEXT STEP FOR ECOLABELS

The next step should be to decide whether Ecolabels should get involved with the market and what criteria the companies should fulfill to get a certification.

Then initiate dialogue with the players about a joint project.

#### REFERENCES:

Netflix

HBO Nordic

Viaplay

D Play

C More

TV2 Play

Apple

## WHY ACCESS ECONOMY IS EASY FOR TYPE 1 ECOLABELS TO WORK WITH

Peer-to-peer business models are probably the most known business model within the sharing economy. Here the peer buys access to assets from other peers. This model has been highly influential in the rental housing sector. But large parts of the shared economy are based on another business model where companies are involved. An increasing number of platforms within the sharing economy are driven by companies. The companies make their assets available to a larger audience for payment. The platforms are developed and run by companies in a classic set up. When the shared economy in the early days was a new and disruptive element, many of the business models are today adopted by the traditional economy. In a sense, you could even argue that the term sharing economy has lost some of its original meaning.

Access economy as a traditional b2c/b2b economy will grow and become a larger part of our daily lives. Therefore, this area of the economy is highly relevant for type 1 ecolabels to work with.

Like other parts of the sharing economy access over ownership is closely knit to the circular economy. The advantage of the access economy in terms of ecolabels is that the companies in the economy have full control with the products throughout the lifetime of a product. This makes it easy to introduce the closed systems needed for a circular economy. This also means that type 1 ecolabels can increase the demands for circular economy in the criteria for the label.

Modes of payments as leasing, pay as you go, rent, user payment, subscriptions, access by payment are normal ways of working for the companies involved with the model.

The reason why ecolabels should focus these types of services are that they often are characterized by:

The platform is developed and managed by a company.

The company is in full control of the physical products and services in the market.

Certification and the subsequent control can happen in a set up between an assessment organ and the company. There are no private users, who can meddle with the way the business is conducted.

Classic set-up between ecolabel and business makes it easy to engage with businesses within access economy



### 13. Shared Workspaces (co-working spaces)

#### PRODUCT-SERVICE DESCRIPTION

A fast trend all over the world is the large community in and around shared workspaces (also called co-working spaces) targeting the scene of start-ups, SME's, remote/flexible workers, local and corporate office/ innovation hubs in cities. Often shared workspaces are established at central locations in refurbished and sometime as new buildings, accommodating many companies under the same roof.

There are many forms and variations of shared workspaces providing everything from closed and open offices to flex desks and with a high focus on creating positive social and business dynamics between the renters. They hold many great amenities, along with business/ knowledge /innovation relevant events and community access to investor partner groups.

Some shared workspaces are local set-ups with very little international interface, others like Regus for example have offices or satellites in most international metropolitan areas and at airports which makes it easy to act globally

#### ECOLABEL POTENTIAL: HIGH

#### SCREENING RATING: 36 (MAX 48)

#### SECTOR: TOURISM AND HOTEL INDUSTRY

#### SHARING CHARACTERISTICS:

Shared workspaces are characterised as a community, business and innovation-based environment for entrepreneurs, SME's and satellite corporate branch outs who seeks flexible, equipped and social work facilities under the same roof. They hold companies in the 10's or 100's at the same time often with a close international community network with thousands of others. The close sharing of space between peers naturally results in efficiently utilization of the highly valuable spatial asset and resources in cities.

The amenities are very varied from high-end to simple setups, including everything from exclusive spar, restaurant and hotel service's to elements like shared reception/lobby, Wi-Fi hotspot, meeting rooms, inhouse café's and bike/car-shares, design labs, 3D/VDC rooms etc. Also, different platforms and/or apps are often used to facilitate community engagement, events and to provide general information.

The companies split the fees for services like prints, coffee, food, drinks, transport etc. whereas general maintenance of the building like installations, interior, energy, cleaning, waste management all are a naturally parts of the daily operation.

The daily data operation is managed by the staff, which enables the potential to measure and optimize the space/usage for both environmental and economic gains.

The business models are based on rentals of desks, rooms or m2 on a monthly basis, or subscription to flex-desks often with a network of international partners and office locations, for remote work/business travels.

## BUSINESS MODELS:

Access Economy

## POTENTIAL:

Acces economy is an easy area for ecolabels to work with.

Ecolabels already certifies hotels and conference venues, which means that there are several opportunities for synergies

Access economy is an easy area for ecolabels to work with.

The risk of entering the market is small and there are few grey areas.

The market has seen a huge growth with more and more places.

## BARRIERS:

The market is small and is not seen as interesting enough for ecolabels by the experts.

There is no real transformative perspective of getting involved.

#### NEXT STEP FOR ECOLABELS:

The next step could be a systematic review of the possibilities of exploiting synergies on existing certification schemes within hotels, restaurants and conference facilities.

In addition, it will be relevant to talk to some of the major players in the market if they might be interested in working with the certification scheme, so as to form a more complete picture of the market potential.

#### OVERVIEW OF COMPANIES

[Foundershouse.dk](http://Foundershouse.dk)

[Bloxhub.com](http://Bloxhub.com)

Soho.dk

Symbion.dk

Umaworkspace.com

Respace.dk

Republikken.dk

[Rainmakingloft.dk](http://Rainmakingloft.dk)

Wework.com

Regus.dk

#### FEASIBILITY AREAS FOR ECOLABELLING

Specific areas concerning criteria development, opportunities and barriers for Ecolabel to take into account is outlined here which is gathered from the intensive workshop carried out in the summer 2019. The results are summarized in appendix 2.

The potential to ecolabel shared workspaces can easily be applied to areas such as energy, food, waste management, furniture, office supplies, cleaning products, electronic and in relation to education schemes to employees on topics concerning environmental awareness and behaviour.

Also, areas revolving future design of new buildings and their infrastructure and the use of old buildings to be used more efficiently has potential to further examination.

#### IMPEDIMENT AREAS FOR ECOLABELLING

However, barriers arise when looking at the general building where the shared workspaces is operating from. Usually shared workspaces are rented office spaces from the owner of the building, which usually also is the provider of energy, water and heat to the building. This is therefore a quite relevant area to take into account.

Another area is waste management and sorting systems, which often isn't an integrated part of all buildings, which again can make it difficult for shared workspaces if they don't have a waste management system to sort out their waste.

A third consideration is regarding electronic equipment. shared workspaces usually have their own electronic suppliers and a joint reparation system. However electronic items such as computers, phones, hard discs, wirers and so on are more personal electronic items that workers in shared workspaces bring with them, which can make it difficult to control.

The fourth area is in connection to more or less newly established shared workspaces where focus mainly is on the economic side of their business, with concerns on renting out spaces- rather than on the environmentally sound side of their business, at least to start with.

Finally, the fifth area is in connection to the brand and image of the shared workspaces where some businesses are very interested in obtaining a "green profile" whereas others are more interested in a high-quality design image.

#### MARKET REFLECTION

The entire development of shared workspace is closely related to the major changes that are taking place in the labour market area. The increase in the number of freelancers is perhaps the biggest area to see the biggest changes. We also see an increase in entrepreneurs, but nothing of great importance.

We also see a tendency for large companies to want to get closer to innovation environments and hence using shared workspaces for meetings, conferences and moving satellites out to innovation environments. Smaller companies with a global profile are also connecting to international shared workspaces in order to have global workplaces and access to different networks.

In the United States, the growth of the freelance workforce has exploded, exceeding the total US workforce growth by 300 percent since 2014. In 2017, 57.3 million Americans freelanced, which is equivalent to approx. 36 percent of the entire US workforce. If this growth continues, the majority of Americans will be freelancers by 2027. This is showed in a new study from Upwork (source). Shared workspace in the US has grown to 71 million square feet- a 600 percent increase since 2010 [according to data from CBRE](#) (source), which tracks the top 40 US office markets. This year a record of 36 percent growth in coworking office space is expected.

#### COWORKING SPACE AS SHARE OF TOTAL US OFFICE INVENTORY

- Low Forecast 6,5%
- High Forecast 22,2
- Mid Forecast 13,3%
- Historical

#### *Flexible commercial office space data for the top 40 US markets*

The same trend is evident in Europe. Overall, EU member states have seen a 45% increase in freelancers from 2004 - 2013. Taking into account that the financial crisis cut 7 million jobs during this period, the figure is striking. Thus, the freelance segment is the fastest growing segment in the entire EU labour market, according to figures from EFIP.

In Denmark, the number of self-employed has increased from 108,100 in 2010 to 144,600 in 2013 - an increase of almost 34 percent, according to figures from Eurostat. This means a transition from thinking in permanent employment to thinking in "loose employment" or project-based employment. The trend is already seen in many creative industries where there is far greater financial aspect in hiring skilled freelancers who work project-based rather than permanent employees. That way, the company can scale up and down quickly as needed.

#### GOING FORWARD:

The next step could be a systematic review of the possibilities of exploiting synergies on existing certification schemes within hotels, restaurants and conference facilities.

In addition, it will be relevant to talk to some of the major players in the market if they might be interested in working with the certification scheme, so as to form a more complete picture of the market potential.

## 14. Tableware & Cups

### PRODUCT:

In addition to traditional tableware rental services of glass, metal and porcelain, new companies have focused on providing sturdy often plastic-based cups and to-go boxes on a service, which can be used in bars, clubs, restaurants, coffee shops. The products can also be used at larger setups like festivals, airports, campuses, sports arenas, concert venues, amusement parks to substitute single-use plastic, paper and card-board options.

### ECOLABEL POTENTIAL: MEDIUM

### SCREENING RATING: 36 (MAX 48)

### SECTOR: CONSUMER GOODS AND RETAIL

### SHARING CHARACTERISTICS:

Tableware and cup service companies provide the services of lightweight and sturdy items for events, substituting single-use options.

The assets are often managed with either deposit-refund systems or in a geo-fenced area to ensure returns in collaboration with the event provider. A deposit is placed on e.g. the cup, which people can reclaim at the bars, dedicated stalls or in collection machines. The tableware is then washed and reused.

The options include multiple design variations for different purposes (pitchers, cold or hot drinks, wine's, shots). Companies often provide customization of the items with logo's and graphics for the local purpose and wish.

Reuse cycles are shown to be 5 times for simple cups for open setups, but up to +132 (on average) for in-house setups, before the assets are set for recycling. In closed loops, new cups can be produced from the plastic of old ones, keeping the cycle going.

Some services include collection, wash, drying and redelivery of the assets.

Business models vary, but full-service options with year-based contracts and pay-per-use for the wanted number of items are one model. Others offer direct item sale and consulting of inhouse asset care, where the event provider or restaurant are the owner and designs their own closed loop system with collection and washing facilities.

Assets are sometimes tracked with built RFID tags to ensure data collection on both use-cycle efficiency and system-losses.

#### BUSINESS MODELS:

Access and platform economy

#### POTENTIAL:

The market does not have any major problems and is very similar to ordinary rental companies, where both tents and other party equipment can go to waste.

There are synergies with existing Ecolabel focus areas

The business model is B2C / B2B and is based on Access Economy

The risk of entering this market is small and there are no grey areas of significance.

#### BARRIERS:

The market is small and not highlighted by experts as an area to focus on.

#### NEXT STEP FOR ECOLABELS:

The market is not immediately a first priority.

## REFERENCES:

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## Ecolabeling in a Peer-To-Peer economy?

The analysis of several markets shows that Peer-to-Peer models where the consumers are engaged will be difficult for (type 1) ecolabels to work with. This includes platforms such as secondhand shops, private leasing of assets and complicated gig services such as handy help.

The problem is control with the products on the platform. A secondhand shop cannot guarantee harm free ingredients or the correct production facilities for a given product put on sale by a user. Even though it may be desirable, it would not make sense for the platforms to try and fulfill the normal criteria put forward by (type 1) ecolabel. There will be very few products to sell, if all products must be documented. A person renting out his or her home, car, boat or tool will have a hard time documenting and complying with sustainable criteria unless the platform is also involved with the sale/leasing of the boat/car/house etc.

Platforms such as eachthing og Hollandske Madaster are some of the companies, who tries to obtain full transparency and lasting documentation of the products. Their work can be influential for ecolabelling of other companies in the future. At present Type 1 ecolabels will only make sense in a few limited peer-to-peer businesses where the platforms have high levels of control with the products on the platform.

In our interviews and discussions with persons from secondhand platforms and other platforms two ideas were put forward.

## THE IDEAS WERE:

The certification should solely focus on the platform. Area of interests should be the daily operations, sustainable goals etc. This means that the certification would be limited to the business level. Labeling projects like B-Corp have focus on this level and we see an upcoming trend for some companies and platforms to work on this level. But it would not be relevant for a type 1 ecolabel to work in that direction.

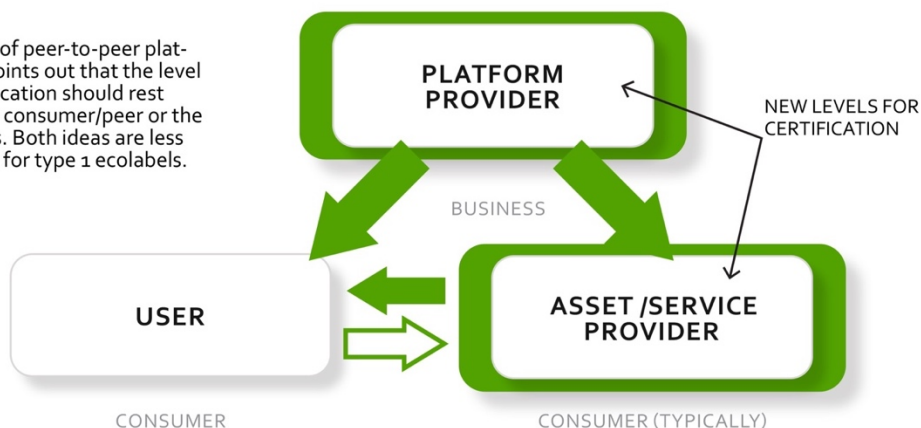
Certifications of the peer by focusing on the individual level would be interesting. If persons can be certified as products by their use of renewable energy, the sustainability of products bought, their use of food, consumption, travel etc. it would be interesting. This could move the market and transform it. Another interesting perspective is the work carried out by the platform Deemly, which tries to bring trust into the peer. This area has not developed in the Nordics yet, but may be relevant in the future.

Presently, both ideas seem unrealistic for type 1 ecolabeling to work with. But the ideas give a hint of, which direction the sharing economy may go in the future and the thoughts in the businesses.

The sustainable framework is important for whether Ecolabels can be integrated in the markets. This can be difficult for some markets, especially small markets, which are still struggling to gain a real position in the market.

## DO WE NEED NEW LEVELS FOR CERTIFICATION

Owners of peer-to-peer platforms points out that the level of certification should rest with the consumer/peer or the business. Both ideas are less relevant for type 1 ecolabels.





## 5. CONCLUSION

The sharing economy changes the way we do business. New market segments, new business models and active producing consumers are all new ways of doing business. The businesses have brought new market segments such as C2C, C2B, which challenges the B2B and B2C ways of doing business. This transformation makes it relevant for ecolabels to expand its scope and get involved with the new businesses.

In our report we have analyzed the predominant trends within the sharing economy.

BROADLY SPEAKING THE SHARING ECONOMY CAN BE DEFINED AS:

“a socioeconomic system enabling an intermediated set of exchanges of goods and services between individuals and organizations which aim to increase efficiency and optimization of under-utilized resources in society.” Muñoz & Cohen, 2017:

There are many ways to further analyze the economies. In our report, we have divided the sharing economy into 3 distinct models: Access economy, gig economy and peer-to-peer economy.

ACCESS ECONOMY IS THE MOST RELEVANT BUSINESSMODEL WITHIN THE SHARING ECONOMY FOR ECOLABELS TO WORK WITH.

The business model is usually based on a B2C/B2B model. The platform has full control of the products, initiatives and working conditions relating to the platform, which makes it easier for ecolabels to work with. There are also fewer grey areas regarding taxation and regulation, which makes it more transparent and feasible to work with for ecolabels. The B2C business model should be the main priority when looking for sectors and deciding the next steps for ecolabel.

GIG ECONOMY HAS SOME RELEVANCE FOR ECOLABELS TO WORK WITH

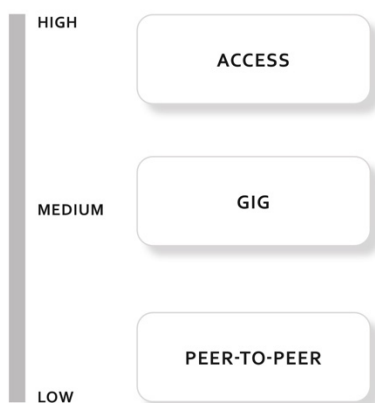
Large parts of the gig economy are related to the peer-to-peer economy (see below) but there is potential to market services with a more sustainable focus within the market. Gig economy is easier to certify than peer-to-peer, because the service in many cases is standardized for instance cleaning or transport. But we still need some more practical experience from the ground to move forward.

Therefore, we recommend beginning with testing a smaller area like cleaning, where ecolabels already has valuable experience.

Ecolabels should be aware that the business models in the gig economy may promote grey areas. The model has no traditional employer and employee relationship and therefore may not be accepted in all countries. In the model, the employee loses his workers' rights and act more freely as company / peer in the execution of the job. The model works well in the areas where the job is carried out by professional companies, such as in the freight area. But the worker risk losing benefits in the new model as well as the treasury may lose taxes, because the transaction is carried out in a way that hides the income.

#### PEER-TO-PEER ECONOMY HAS SOME OR LOW IN RELEVANCE FOR ECOLABELS

Many peer-to-peer businesses are built up as a link between active users/businesses and consumers. Often there is little control with the input of materials and the sustainability of the products. The platforms work in a grey area at many levels from work conditions over sustainability to taxes. A few platforms within impact investment may be relevant in the future. The possibilities for introducing a sustainable product and thereby a sustainable framework at the platforms is very important. On smaller platforms, this rarely makes sense because the platforms are too small to run sustainable business areas unless they are born sustainable and are thus based on a sustainable business model.



Ecolabels and the sharing economy are knit closely to the circular economy and in many ways helps to promote it. The circular mindset/approaches in businesses working with ecolabel and companies working in the sharing economy are in many ways similar. But there are also great differences. This shows that there both opportunities and barriers for ecolabels to enter the sharing economy.

In the figure we have listed differences and similarities between the sharing economy companies and Nordic Swan Ecolabel Companies.

	Nordic Swan ecolabeled companies today	Sharing economy companies from a circular perspective
<b>Circular Value chain focus</b>	Primarily focus on companies working with circular supply and services as the primary business model - involving 6 drivers for a closed circle.	Focus on companies at all levels of the value chain and circular business models: Supply, recovery, lifetime extension, sharing and service.

<b>Business segment</b>	Focus on B2C and B2B businesses.	Focus on B2B, B2C, C2B and C2C
<b>Trust</b>	Trust is generated in a traditional relationship with B2C or B2B segments.	Trust is generated on many different levels and technologies including ratings, blockchains etc.
<b>Consumer</b>	The consumer is defined as passive.	The consumer can be both passive and actively creating.
<b>Product</b>	The product is usually physical or services.	Primarily digital products.
<b>Sustainability</b>	The scope is the environmental consequences of producing and using products and services. Social aspects are included for areas where there are problems with working environment aspects.	The scope is different from company to company. The concept of sustainability can be understood widely and focus on different aspects of sustainability. The social aspect is just as important as the environmental.
<b>Sustainable assessment level</b>	Mainly on product and product service level.	Possibilities for assessment on product, business, and consumer level. Digital solutions support certifications and transparency.

To investigate the businesses that would be relevant for ecolabels to target, we have developed a screening model and applied it to 14 markets. The screening model is based on ecolabels synergies, market relevance, Eco Risk and circular change. See below.

Themes	Elements	Evaluation Question	1. Cleaning Services	2. Caring Services	3. Crowdfunding / lending	4. Delivery Services (Non-Food)	5. Delivery Services (Food)	6. Food Sharing	7. Handy and Craftwork	8. Hospitality (private estate sharing)	9. Micro Mobility	10. Private Transportation	11. Packaging	12. Streaming	13. Shared Work Spaces	14. Tailors & Cup Services
Synergies for Ecolabels	Criteria synergies	Is there a strong link to present European/Nordic Ecolabel product/service categories and criteria?	6	6	6	6	3	3	3	6	6	6	6	3	6	6
	Businessmodel synergies	Are there similarities and synergies at the business model level that will fit Ecolabels way of working?	3	6	3	3	3	3	3	3	6	3	6	6	6	6
Potential for sustainable change	Eco potential	Are there huge environmental benefits from affecting the market and its lifecycles?	3	6	3	6	3	6	3	6	3	6	3	6	3	3
	Transformability	Does Ecolabels have the potential to push a greater transformation beyond the companies operations/customers/users?	3	3	3	6	3	6	3	6	3	6	3	6	3	3
Market relevance	Market size and potential	Is it a large or growing market?	3	3	3	6	6	3	3	6	6	6	0	6	3	3
	Competition in the market	Is there a competition in the market, which makes Ecolabels attractive to work with?	3	0	3	6	6	3	3	3	3	6	0	6	3	3
Eco risk	Grey zone risk	Are there any grey zones in the market, which ecolabels should be aware of?	3	6	6	3	3	6	3	3	6	3	6	6	6	6
	Enviromental risk	Are there any immediate environmental disadvantages of involvement in the market?	6	6	6	6	3	3	3	3	3	3	3	3	6	6
			30	36	33	42	30	33	24	36	36	39	27	42	36	36

The model gives a quick screening of the potential for certain types of businesses. The model makes it possible for ecolabels to assess, which areas of businesses have the greatest potential to yield positive returns.

Our qualitative analysis of the sectors also shows that some area of business is more relevant for ecolabels than others. As stated earlier in the report, the best chances of success are within the access economy.

In our analysis we have investigated many different markets and business models to find the best suited candidates for ecolabelling. The analysis points to two sectors that are particularly interesting for ecolabels. This is respectively the mobility and entertainment sector, which is also among the largest markets. The following is the result of the screening model where we list the sectors we have analyzed and their convergence with ecolabels.

## MOBILITY:

Ecolabels should focus on on-demand models (car, bicycle or other transport use), rental, leasing, pay as you go, but also to focus on freight where the business model and gig economy is in place. Ecolabels should also contribute to changing the transport sector. Carpooling clubs, ride sharing and car sharing without strong control and framing of platform are not relevant at present.

#### **CONSUMER GOODS AND RETAIL:**

The clothes industry is a relevant sector to certify. The business will undergo tremendous changes over the coming years. Focus should be on lending, leasing, services, and other access models, where a circular system can be implemented. The focus should be on platform businesses involved in production, design, and sale.

It is not relevant to investigate secondhand markets and peer-to-peer sharing clothes.

#### **OFFICE, TOURISM AND HOTEL:**

The platforms are global and it immediately seems less relevant to work with local labeling schemes. However, Ecolabels can work together on schemes for the global platforms, thus creating labels that are specifically targeted to individual markets.

#### **ENTERTAINMENT, MULTIMEDIA AND TELECOMMUNICATION:**

The area is growing rapidly and has a huge impact on our consumption of energy. It is an area of great popular interest. The platforms work with B2C segments and have full control of the content. This would be a highly relevant sector to certify with ecolabels given the need for a more sustainable data storage and streaming.

A model should be found to move forward towards a CO<sub>2</sub> neutral sector.

Community platforms offers some interesting perspectives for ecolabels but the lack of control with content should be taken into consideration.

## **FINANCIAL SECTOR:**

The Nordic Swan ecolabel already have focus on certifying investment funds. Impact investment is a market on the rise with a growing number of funds. Presently, there is a big discussion in the sector on how to measure impact. Here ecolabels can play a major role by introducing criteria for the measurement. Several impact platforms are based on Consumer-to-Business models but there is a high level of control. Therefore, it might be relevant to include these platforms as well.

Community creation, community financing and peer-to-peer lending are present mostly focused on finding new ways for funding and do not have a specific focus on sustainability. Therefore, it has little relevance to ecolabel.

## **HUMAN RESOURCE SECTOR:**

This is an interesting sector, which is linked to the gig economy where people are offering to work for others. In our analysis we have found that cleaning and delivery are areas of interest for ecolabelling. Another area to test could be taxi driving.

Parts of the sector is in a grey zone when it comes to work conditions and tax, which is a challenge for ecolabels. On the other hand, it is possible to work with many companies simultaneously and thereby steer the sector to a more sustainable course. Many platforms have a broad scope and complex services. It is therefore important to choose strategic areas of interest.

## APPENDIX 1 - SCREENING MODEL ELEMENTS

The Screening model has been developed on basis of Ecolabel's elements, RPS Principles and Ecolabel's wish to strengthen the circular economy through the shared economy.

The screening model is therefore based on the following elements:

### 1. RPS – PRINCIPLES

Three underlying principles are used to define the product-specific requirements. These are:

Relevance (R), Potential (P), and Steerability (S), where:

Relevance identifies the extent of environmental problems in the product group.

Potential determines what can be done about the problem.

Steerability identifies how well the Nordic Swan Ecolabel can alleviate the problem.

## 2 ASSESSMENT OF TYPE-1 ECOLABELLING PRINCIPLES AND ELEMENTS

Standard (ISO 14024) – principles and standard elements for SBPS.

When screening the market for SBPS that potentially could benefit from being certified with an ecolabel, we take the standardized value set into account, in reference to ISO 14024. The core elements of type 1 ecolabels form the foundation for e.g. Nordic Swan Ecolabel, EU Flower or Der Blau Engel. The elements that are found important in this screening, should be how they effect and could be addressed in according to SBPS, enabling an eco-effective impact by making it easier for users to choose the environmentally preferred services. So here we ask "*How Type 1 ecolabel principles and standard elements will apply to sharing based platform services?*" and discuss the basic and general applicability to develop ecolabel criteria.

### Applicability of Principles

#### 1) Environmental Labelling Programs Should be Voluntary

Sharing based platform service should be able to acquire the ecolabel, if they fall under the ecolabel provided product category and they can sufficiently document how they live up to the criteria put forward. An ecolabel can't be forced on a specific market through legislation, but market demand might pressure market players to adopt the label to stay competitive. Pressure might also come from local authorities, which could credit ecolabel standards as part of a license to operate, strategies to enforce environmental protection or in public tenders.

## 2) Compliance with Environmental and Other Relevant Legislation is Required

Compliance with normal EU legislation/regulations, through e.g. CE labels on physical products utilized by the platform to deliver a service should be easy for most platforms to fulfill. However - some platforms operate in grey areas, where utilization of private acquired stuff is shared such as sharing of clothes or tools. In this case it won't be possible to ensure full compliance due to simply lack of traceability for the shared assets. On the other hand, it must be considered that most stuff shared on such platforms will be acquired on local/European markets and thus expected to live up to EU or national legislation. Also, such platforms might also represent green alternatives to regular linear consumption. If certain traceability issues are found important, requirements for regular samplings, documentation or limits could be considered as a way to go forward in the criteria development.

## 3) The Whole Product Life Cycle Must be Taken into Consideration When Setting Product Environmental Criteria

Utilized physical assets as well as environmental impacting life cycle events from services (e.g. logistics, data storage operations and office solutions) to deliver the final product-service, could all be addressed. The life cycle perspectives on physical assets used to deliver a specific service-product should be possible to address for most platforms, even though data from the supply chain and reversed logistics might be complex. Other platforms might operate with sharing reused items or private property of various kinds. In these areas' traceability and verification on product content and design won't be possible to easily obtain or at all. However, companies might be able to define their own quality standards, for what is and is not shared on their

platform. Finding criteria for an ecolabel in this regard, should illuminate what those quality standards should be.

If services are bound to criteria that can have companywide effect, where structural distinctions between different service-products cannot be made, it might be affecting the ability to make them fair for anyone. E.g. a criterion on using sustainable server storage solutions, would most likely affect to whole parent company and not just a single service-product that they deliver.

#### APPLICABILITY OF STANDARD ELEMENTS VALIDITY

The market for shared economy is constantly changing, which makes it hard to define a future set of ecolabelling criteria that will last. Data on how subscribers use different services, how companies use their asset and provide service will quickly be outdated. The use-phase, end-of-life handling and reversed logistics are areas where the platform companies should be able to give reliable data, reporting on e.g. use-cycles, user base growth, geodata, energy use, performed maintenance, repairs, collection system/efficiency, reuse, remanufacturing and recycling of physical assets. Also, data on green logistics or data-storage solutions, could be specific target areas around the life cycle of delivering the services.

Ecolabel should be expanded to include workers' rights if the label wants to maintain its credibility. Presently, many platform companies have found loopholes in the legislation, which has enabled them to avoid compliance with work environment legislation, local tax-systems and contractual salary. If Ecolabel does not take social factors into account and certify companies with low social standards, they could be blue stamping companies that are in fact undermining the welfare state.

The use-phase, end-of-life handling and reversed logistics are areas that submission of data should be possible for platform companies, reporting on e.g. use-cycles, user base growth, geodata, energy use, performed maintenance, repairs, collection system/efficiency, reuse, remanufacturing and recycling of physical assets. Also, data on green logistics or data-storage solutions, could be specific target areas around the life cycle of delivering the services.

## VERIFIABILITY

The main documentation will have to focus on the efficiency of physical assets in use and their ability to be part of a circular design. External eco-labelled products/materials could also come in play. If the platform companies can get the information from their supply chain, it would also be relevant to look at how circular economy can be adapted in the early stages of value chain such as product design and clean manufacturing.

## TRANSPARENCY

The criteria must be developed together with stakeholders from the target markets. As usually, criteria and application terms will be publicly shared, so the shared based platform companies can apply and acquire the ecolabel on a fully informed basis. Data transparency on performance will help to engage the market.

## SOUND CRITERIA

Studies on product design technicalities, the digital architecture behind the platforms and life cycle impact measures could form the basis for criteria development, together with references to relevant standards, other certification schemes/eco-labels and selected testing methods etc. Criteria must target one or more types of services delivered by platforms on a specific market, on areas where significant life cycle impacts are taken place and where the ecolabelling body has a solid methodological foundation to both ensure better environmental standards on the market and to acquire the right documentation to uphold the criteria put forward.

## FEASIBILITY

The feasibility of sharing-based markets would have to address problem areas such as; the material flow and the possibility for eliminating material uptake in the economy, by delivering access to the functionality of physical products, through the services in question. Resource efficiency is the core aspect in the environmental promise of sharing services, which has to be

addressed and verified before criteria can be set. Sharing services are in general in a position to produce a lot of data, tracking their asset use, acquire product information and measure material flows. It must be considered whether this data generation is enough to proof a positive environmental impact and optimal asset use. A main question is therefore: If it is possible to acquire enough data or will new data sets have to be developed/delivered in the documentation phase – how markets players respond to those?

## SELECTION OF CRITERIA

### Identification of Product Life Cycle Stages of Relevance

Compliance with criteria should target the physical assets used to deliver the service, even if they are not part of the company's in-house operations and gets manufactured by external partners – not the OEM. This might involve making large changes in the supply chain and re-developing/designing the physical products normally used, before the ecolabel can be obtained. The differentiation of products and their impact of life cycle stages must at least level the most environmentally good physical products on the present market, to define a standard for new criteria. If very little or no major difference is found between the products on the market, a set of reasonable and sound minimum criteria must be developed. Strengthening of those criteria in the evaluation period of a new certification category, must then be prioritized as the markets are expected to evolve. An example could be green vehicles, which must be expected to develop fast in the coming years as the electrification of mobility solutions will transform this sector.

### USE OF WEIGHTING FACTORS

Weighting factors can be used to clarify how well a platform service is performing on the life cycle stages that has significant environmental impact. Since weighting factors are always prone to discussions on whether they have right weight according to importance and impact, our use of the factors must be justified. In some cases, it will probably make sense to put different weight to some data set depending on context, e.g. a service when operating in large cities opposite to towns or the countryside, or at different times of the year/season/day.

## ACCURACY OF CRITERIA

Minimum or threshold criteria are a solid way to ensure environmental performance to a certain level or degree. Such measures could very well be a good way to go for ecolabel when it comes to shared based platform services. Given that the nature of the services is to ensure efficient use of assets, a minimum/maximum criterion can help separate the good companies from the rest. Points could be used to divide services products in relation to e.g. operation area, time slots or different user types.

## REFERENCES FOR DOCUMENTATION

Physical products must comply with chemical/substance requirements to ensure the ecolabel. They are subject to documentation through tests, standards or certificates to acquire the license. Using eco-labelled products could be a way to ensure compliance in the platform services, where it makes sense. Characteristics such as design for durability, reparability, disassembly, recycling etc.

## APPENDIX 2 - NCE - WORKSHOP ON ECOLABELLING POTENTIALS FOR SHARING SERVICES

### PARTICIPANTS

- Ari Nissinen, Finnish Environment Institute (SYKE), Center for Sustainable Consumption and Production, Development Manager, PhD (Environmental Science and Policy)
- Bjørn-Erik Lønn, Svanen-gruppen
- Elisabet, Svanemerket/Miljømerking i Norge, Senior environmental expert
- Søren Mørch Andersen, Miljø- og Fødevareministeriets departement
- Lisbeth Engel Hansen, Ecolabelling Denmark Kriteriechef
- Anja Gylling, MFVM
- Ana Maria Arbelaez, Lund University, PhD Student
- Jagdeep Singh, IIIIEE, Lund University, Postdoctoral Researcher
- Åke Thidell, IIIIEE Lund University
- Anders Jelstrup Besenbacher, Drive Now, Partner & Corporate Sales Manager
- Frederik Ferbing, Founders House + Startup Village (The Creators Community) General Manager

Benjamin Egeskjold, Cargo Match/ Fragtopgaver.dk, Founder han aflyste på dagen pga. sygdom/  
Mathias lavede oplægget for forsamlingen, med udgangspunkt i deres fremsendte slides

### AGENDA

#### NCE - Workshop on Ecolabelling Potentials for Sharing Services

Over the past couple of months, Minor Change Group has been looking into new markets of sharing-based platform services in the Nordics, as part of a study on behalf of the working group on Circular Economy (NCE).

The purpose of this workshop is to gather experts and dive deeper into how criteria could be developed and benefit 3 different sharing markets, where there has been found greater potential for it to be relevant for type-1 ecolabels (with special attention to the Nordic Swan Ecolabel).

Three companies have kindly agreed to join us on the day and tell us about their business, what environmental actions they have taken and how they think an ecolabel could maybe help them in the future.

After each presentation there will be a short open dialog, with the possibility to ask questions and elaborate with the companies. In the afternoon we will work in groups for each of those markets (Mobility, Shared Workspaces and Delivery Services), defining what a potential ecolabel schemes should hold, on; life cycle impact focus areas, potential criteria and verification methods.

Each group will thus present their output in the end of the day, where the results will be gathered as part of the final study report.

Looking forward to see everyone.

#### TIMETABLE

**9.30** – Arrival and light breakfast (at “project space”)

**10.00** – Welcome and introduction to the market study so far. We will go through the themes and potentials

in type 1 ecolabelling of sharing services.

**10.30** – Presentation of Drive Now, by Anders Jelstrup Besenbacher, Partner & Corporate Sales Manager

(Mobility)

**11.00** – Presentation of Founders House, by Frederik Ferbing, General Manager (Shared Work Spaces)

**11.30** – Presentation of Cargo Match/Fragtopgaver.dk, by Benjamin Egeskjold, Founder (Delivery Services)

**12.00** – Lunch

**12.45** – Introduction to the workshop

**13.00** – Round 1 – on the themes; “Mobility”, “Shared Work Spaces” and “Delivery Services”

**14.00** – Coffee break

**14.15** – Round 2 – Continued work in groups

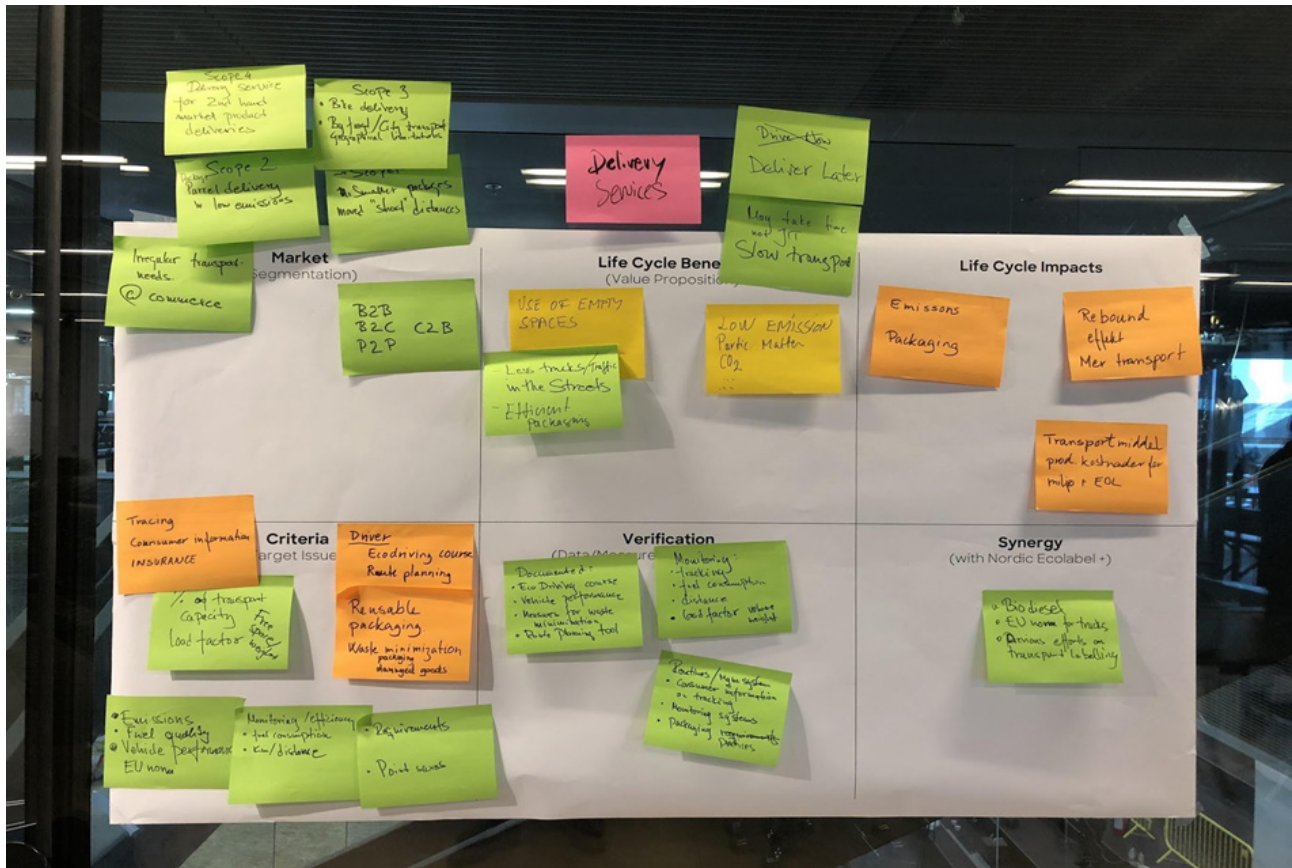
**15.15** – Presentations of the output from each group

**15.55** – Follow up on the day

**16.00** – Thanks for today

*The workshop will take place in BLOXHUB, room: “Project Space”. When you arrive, please go to the front of the building at Bryghuspladsen. Take the escalator/stairs down to -2, and go to the right double-door. Press the Bloxhub button to be let in and take the elevator to 3rd floor “members lounge”.*

## WORKSHOP - DELIVERY SERVICES



## MARKET

(segmentation):

Irregular transport needs

@Commers

B2B, B2C, C2B, P2P

Scope 4 : Delivery service for 2nd hand markets products deliveries

Scope 3: Bike delivery, By ?/ city transport, geographical limimtations

Scope 2: Package parcel delivery w low emissions

Scope 1: Smaller packages moved short distance

## LIFE CYCLE BENEFITS (VALUE PROPOSITION):

### **Deliver later**

Many takes time- n(ot JiT)

Slow transport

### **Use of empty spaces**

-Less trucks/traffic in the streets

-Efficient packaging

### **Low emission**

#### **Partci matter**

CO<sub>2</sub>

### **LIFE CYCLE IMPACT**

#### **Emission**

#### **Packeting**

#### **Rebound effect**

#### **Mer transport**

TRANSPORT MIDDEL

Prod kost for miljø+EOL

### **CRITERIA**

**(target issues):**

Tracing

Consumer information

Insurance

**% of transport capacity**

Load factor

Free spare weights

**Driver:**

Ecodriving course

Route planning

**Reusable packaging**

**Waste minimisation:**

Packaging

Damaged goods

**Emissions**

Fuel quality

Vehicle performance

EU (now)s

**Monitoring/ efficiency**

Fuel consumption

Km/distance

## **Requirements**

### **Poit scores**

#### VERIFICATION

(Data/measures/documentation):

### **Document**

Eco driving course

Veiche performance

Mesures for waste minimisation

Rute planing tool

### **Monitoring**

Tracking

Fuel compsumption

Distance

Load factor: Volume, weight

### **Rutes/ (Mgh)systems**

Consumer information on trafficking

Monitoring systems

Packaging practise

### **SYNERGI**

(with Nordic label):

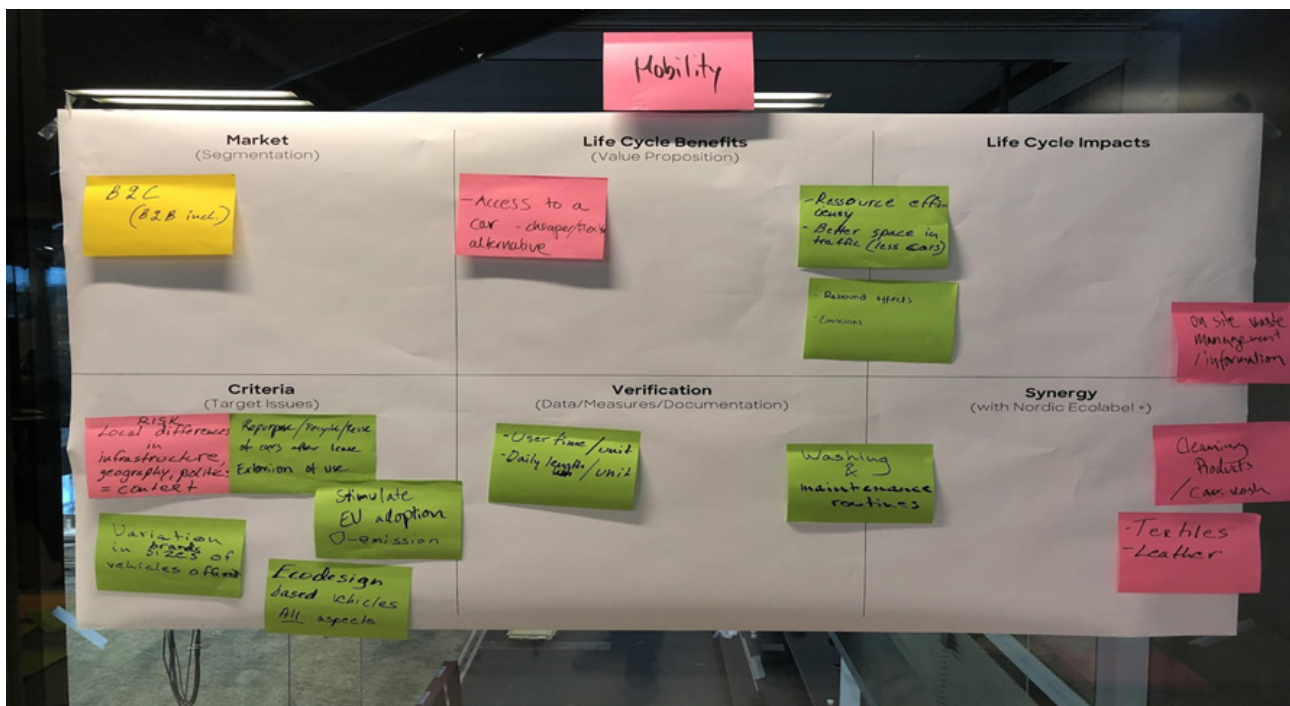
Biodiesel

Eu home for trucks

Previous effort on transport

labelling

## WORKSHOP – MOBILITY



### MARKET

(segmentation): B2C, (B2B incl)

Life cycle benefits (value proposition): Access to a car, cheaper/flexible alternative

(Between): Recourse effectivity, Better space in traffic (less cars). Rebound effect, emission

**Life circle impact:** Onsite waste management/information

**Criteria (target issues):**

Risk: Local difference in infrastructure, geography, politics= Context

Variation: Brand sizes of vehicles offered

Eco-design: Based vehicles. All aspects

Stimulate: EU adaption. Emission

Repurpose, recycle, reuse: Of cars after lease. Extension of use

**Verification (Data/measures/documentation):** User time/unit, daily length/ Unit

**Between:** Washing and maintenance routines

**Synergy (with Nordic label):**

Textiles letter, cleaning products, car wash

THIS IS FROM THE RECORDED FILE FROM THE WORKSHOP

**Other impacts to consider:**

Rebound effect, shared cars and emission

What is the target group?

Can't regulate the spaces.

**Criteria:**

Consider context (this is the lock in effect, hard to change).

Work with energy sources available

Infrastructure and policies.

**Eco-design content**

What is the portion of reused material in the cars?

Is material efficiency taken into account in the design?

Can we stimulate design of smaller cars?

Synergy with other eco labels and cleaning services.

Criteria that services such as cleaning should be eco labelled.

### **Information for users on where to place waste etc.:**

Lack of responsibility

Need for behavioral change.

### **Documenting the efficiency of the unit:**

Define use efficiency per car and reporting.

Third party involved in reporting.

Audit, and trust

### **Market:**

B2B

Difficult for p2p as private cars (go more case)

### **Should it be the platform?**

Or is it the use of the platform?

Responsibility passed on to the users of the platform and not the suppliers

Would be impossible to certify all private

Spaces - business that uses the platform will be certified, not the platform

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## MARKET

(segmentation)

**Offices in general (not just shared ones, but they would be good here)**

B2B

Under offices: Catering, cleaning, printing

**Are there several actors at the market?**

Yes

**Used time (evening, night, after hours, peak hours)**

Space which is not normally used for office work.

Cafeteria etc.

**Building of the public sector**

In municipalities

Schools 24/7?

Afterschool, language classes, adult classes etc. (of course been done always)

Could be more efficient

Specific space/ specific keys

LIFE CYCLE BENEFIT

(VALUE PROPOSITION):

**Avoided new building area and its energy and material use**

**Use of square meter is alders there**

Using m<sup>2</sup> more efficiently

**Offering ecologically sound seminars for workers/ the people who work there**

**Prolong the life span of furniture**

**Special value in being on a co-working space:**

For the working people

For companies considering own or shared space/office

**If it is eco-label office, the good experience is for a number of organisations (e.g. 20) and not for more**

**LIFE CYCLE IMPACT:**

**When you create more opportunity, you also create more demand.**

E.G people leave their home office due to co-working space

So, more consumption?

**On the other hand, the company perhaps don't need the old office, with lower space effect anymore.**

This perhaps is somehow measurable

**Energy consumption:**

Water

Procurement/use of products

**Indoor quality:**

Chemicals

Furniture/interior prod

## CRITERIA

(target issues):

**What is the use of rate minimum (how much is it used, hours and m2)?**

Minimum: air quality, vegetarian food, cleaning products

Points: Eco labelled products, energy, organic food

Energy: New; existing, age, swan? For houses

**Infrastructure: Flexibility in interior design**

**Services that the shared offices company offers to workers**

Eco-system of eco-efficient

Services, e.g. for aged:

Computers, mobile phones

Furniture

Leftover food

Links to local public traffic

Cycles (? etc.)

**Look also at goals and criteria in:**

**Swan criteria for houses, hotels**

EU GPP criteria for office buildings

EU levels

**Balance between sharing-idea/space and house focus**

VERIFICATION

(Data/measures/documentation)

**An independent third-party third-party verifier is important.**

To inspect, to see the place

Reporting: Documentation:

Made in a way that guides you to reach the goals

Document the yearly results, improvement

**Special features of shared spaces, due to many organisations etc.**

The sharing company documents the criteria

How can they guide/control so many people or organisation?

Is there a challenge

**SYNERGY**

(with Nordic label):

Swan-ecolabel product/service groups

Cleaning services and products

Things for the toilet (soap, papers)

Printing and printing paper

Catering

Office supplies

Furniture

Coffee service

Organic food

**Economic resources**

Innovative atmosphere contacts

Homework distance

Community

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