

# GUIDE FOR DEVELOPING PRODUCT AS A SERVICE BUSINESS

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1

# INTRODUCTION

Offering *Products as a Service* is one of the potential business models in circular economy. The Product as a Service model can offer many sustainability benefits as well as several business opportunities to companies. This guide will provide information, examples and practical tools for companies to develop and implement Product as a Service business models. By reading this guide, you can gain more understanding of what the Product as a Service model is, how it contributes to circular economy and how to create profitable business from the model.

This guide was created in the PaaS Pilots research project during 10/2021–05/2022, funded by the Finnish Innovation Fund Sitra. The research project was implemented by Turku University of Applied Sciences in coop-

eration with VTT Technical Research Centre of Finland and LAB University of Applied Sciences. In addition to the research organizations, two Finnish companies were involved in the project.

Pure Waste and Image Wear piloted and tested a novel Product as a Service model in their operative environment. The pilot company cases generated illustrative examples of developing and implementing a Product as a Service context of the textile industry for this guide. **However, the guide provides useful tips and tools for companies in general, regardless of the operative domain. Additionally, the information provided by this guide can be applied for both consumer and business to business markets.**

This guide is structured as follows: first, the guide describes what the Product as a Service models are and gives inspiration from real-life examples of the model. Next, the value of the model is discussed from the economic, environmental, and societal perspectives. The next sections provide practical guidance for developing the Product as a Service model by describing how to prepare for the process and how to implement the developer's path. Finally, the research project pilots are described in detail, before concluding the guide.

2  
PRODUCT  
AS A SERVICE  
MODELS

## 2.1 WHAT ARE THE PRODUCT AS A SERVICE MODELS

Moving towards circular economy is widely recognized as a solution to many sustainability challenges such as climate change and resource scarcity, and to bring benefits to environment, society, and finance. According to a definition by Ellen McArthur Foundation<sup>1</sup>, circular economy is a systems-level approach that strives for a transition towards renewable energy sources and increasing the use of renewable materials.

Despite the noted benefits, it is presented that currently, the world economy is only 8.6 per cent circular. In fact, according to the Circularity Gap Report of 2022<sup>2</sup>, the global “circularity gap” is continuously widening instead of narrowing down, consequently offering room for change.

Offering *Products as a Service* (PaaS) instead of concentrating on ownership is a way to implement circularity in business models. Substituting products by services and incorporating service elements such as logistics or maintenance enables lengthening the lifecycle of products and more efficient resource use.

In the Product as a Service model, the product is made as material- and cost-efficient as possible while creating environmentally and socially sustainable service offerings. The circular Product as a Service model enables closing of the material loop, as the products do not stay in the possession of customers after usage. Therefore, the customers are not seen as owners, but instead as users. The circular Product as a Service business model typically offers access to a solution through leasing, hiring, or renting a product. These models are often offered through a digital platform.

The Product as a Service model can also be seen as a form of reuse. Reuse is one of the main principles of circular economy, alongside recycling and reduction. The Product as a Service model incorporates elements of direct reuse, as there is only minimal recovery executed to the product between the uses, instead of heavily operating the product by e.g., remanufacturing. The direct reuse models typically engage intermediate actors that facilitate direct reuse by adding service elements

that are not executed directly by the company that offers the Product as a Service model; for example, delivery, reverse logistics or take-back processes, and product validation.

The transformation towards the Product as a Service model offers several business opportunities to companies, in addition to the sustainability benefits. For example, the major global trends of increasing sustainable ways of consumption and production are accelerating the market for novel, service-oriented models. However, customers tend to compare the novel circular offerings to the traditional, linear ones. Therefore, companies need to provide more attractive offers or at least the same level of function and comfort as provided by conventionally purchased products. From the companies' perspective, new approaches are required to implement the principles of the Product as a Service models, including innovations in offerings, concepts, and channels.

<sup>1</sup> [Ellen McArthur Foundation \(2019\). Completing the picture how the circular economy tackles climate change.](#)

<sup>2</sup> [Circularity Gap Report \(2022\).](#)

## 2.2 PRODUCT AS A SERVICE CASES

This section describes three real-life examples of the Product as a Service models. These cases are to give inspiration for deciding on the structure of the model, and also to illustrate the diversity and potential of the Product as a Service business.

### 2.2.1 WORKWEAR AS A SERVICE

CWS is a German company, whose portfolio consists of products and services in the areas of Hygiene, Floor Care, Workwear, Fire Safety, Cleanrooms and Healthcare.

The company manufactures and designs high-quality products and offers rental solutions and accompanying services for each sector, covering all components: individual consultation and planning, cleaning, maintenance services, and delivery and collection, all of which fit seamlessly into everyday business.

In the workwear sector, CWS offers an all-round service from advising on the selection to care and maintenance. The cooperation starts with an individual consultation by selecting the appropriate work clothing, either in the customer premises or by video call.

Sustainability, circularity and the sharing economy have been the guiding principles of the business since the company was founded. The company conserves resources and uses reusable instead of disposable products.

They are committed to social sustainability in all areas of the value chain and provide services in an environmentally conscious and sustainable manner. To achieve this, they have created a resource-saving service cycle, which their products pass through repeatedly. Using state-of-the-art technologies such as chemical-free wastewater plants, the company also reduces their environmental impact.<sup>3</sup>

<sup>3</sup> CWS Workwear. <https://www.cws.com/en/workwear>



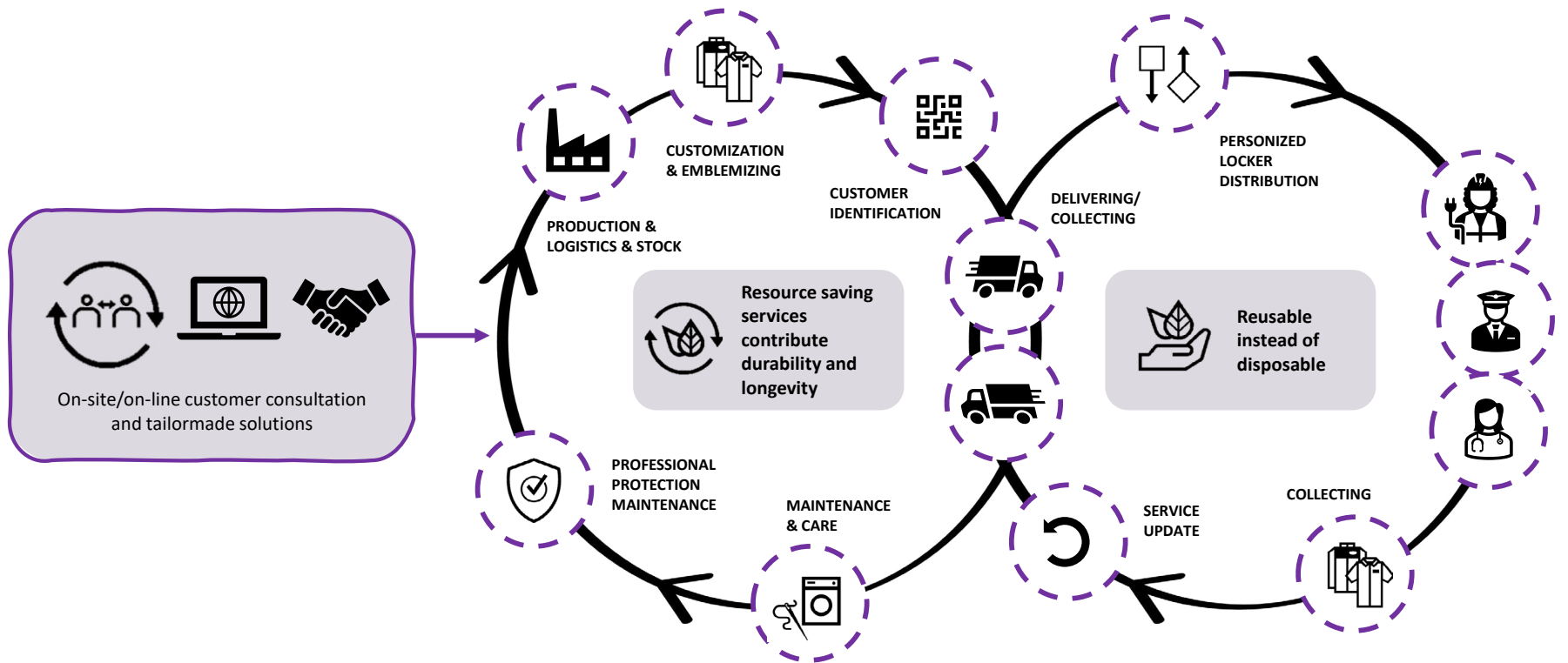


Figure 1. Example of workwear BtoB rental concept - CWS.<sup>3</sup>

## 2.2.2 TOOLS AS SERVICE

We all have tools in our cupboards that we barely use. They take up valuable storage space in our homes and are not always as high quality as we would like. The Liiteri.net pilot was designed to meet these and other everyday challenges; this service provides higher quality tools and cleaning equipment free of maintenance needs, the risk of making the wrong purchase, or breakage. Tools can be picked up 24/7 or ordered for home delivery from the Liiteri service point in the Helsinki Teurastamo centre.

The Liiteri pilot provides concrete data on consumer behaviour, the public's reception of the service and the level of interest in it. Answers are also being sought to how and what scope of solutions can be offered to consumers for renovation and building, or to fulfil more general everyday needs.

Rental models always save material resources: potentially a third or even more, depending on the collection method and distance. The more efficient the logistics chain between the rental service and the customer,

the greater the savings achieved. In addition to such savings, shifting to equipment rental has positive economic and employment impacts due to growth in the service sector. In Finland, around EUR 2.5 billion is spent on cars each year, and over a billion is spent on other consumer durables. Most of these goods are imports. If even some of these were transferred to the service business, it would have a major employment effect in Finland.

*The circular economy project, Liiteri, was being implemented by IT start-up CoReorient in cooperation with the AARRE project coordinated by VTT, which also involves the Finnish Environment Institute (SYKE) and the University of Helsinki. K-Rauta, the Helsinki Region Environmental Services Authority HSY, the Federation of Finnish Technology Industries, SER-kierrätys, the City of Espoo and Purjebägit Ltd, Kierrätysverkko Ltd, Metrosuutarit.fi, Pyörähuoltoovelle.fi and Kauppa-halli24.fi are also involved.*

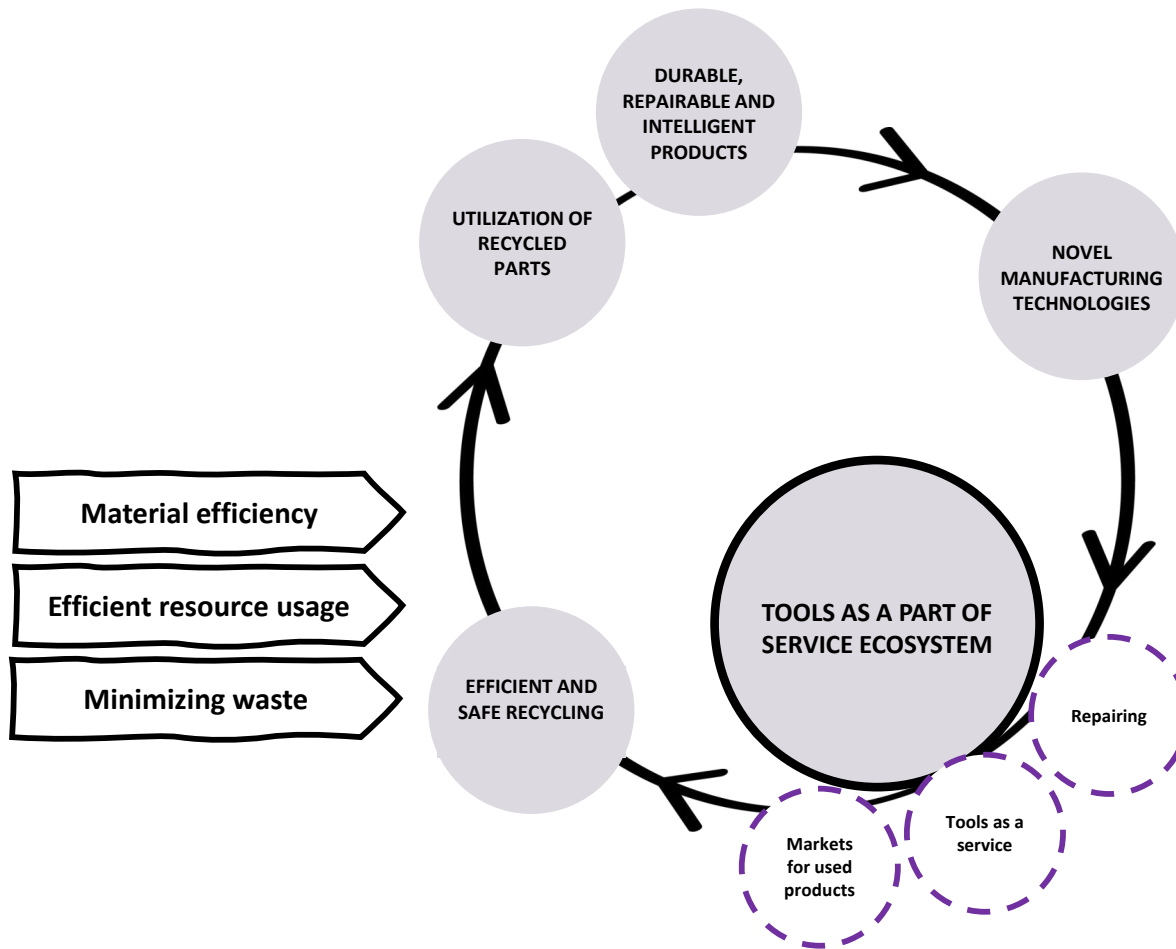


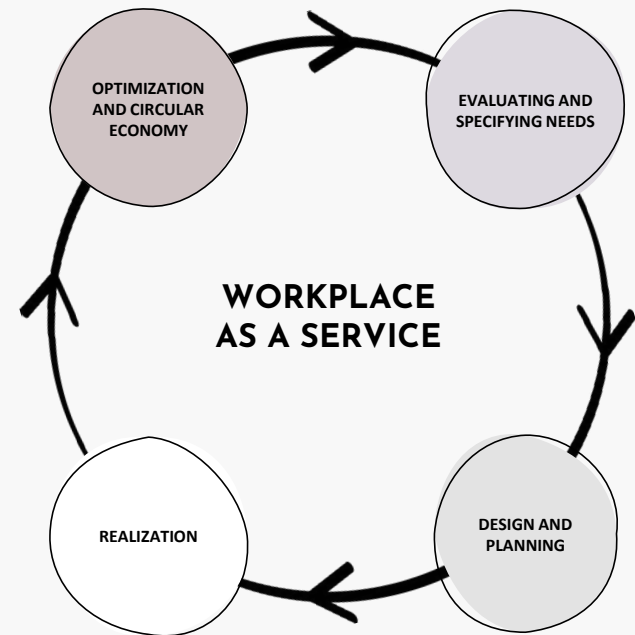
Figure 2. Example of a rental model.

### 2.2.3 WORKPLACE AS SERVICE

Can a company change its business model from linear to circular? It can, at least if one is talking about Martela Oyj. It is a company with a long history in the design and sales of office furniture. They are a part of the user-centric workplace and learning environments design business. Today, the company is the largest one in its sector in Finland.

Their transformation towards the circular economy business model was more or less driven by the need to stay relevant and competitive, as well as the willingness to contribute to sustainable development. They believe that circular economy enables them to create more value to their customers by rationalizing for example the use of raw material and energy. The company developed Workplace as a service business model in co-operation with the customers.

<sup>4</sup> Martela – Workplace as a Service. <https://www.martela.com/services/furniture-optimisation-recycling/workplace-as-service>



The company offers its customers a range of services covering the entire cycle of changing the customers' work environment. Through the Workplace as a service the company offers change and flexibility for the customers. The customer can use a product without being the owner. Therefore, the company shifted from selling a product to selling a service. This allows them to focus on the changing customer need instead of focusing on just the best design or price.<sup>4</sup>

Figure 3. Example of workplace as a service model.<sup>4</sup>

3

BUSINESS MODEL  
VALUE CREATION

### 3.1 VALUE OF THE PRODUCT AS A SERVICE MODELS

The PaaS model is considered as a sustainable business model (with some limitations: read more in chapter 3.2), and it includes benefits for society and the environment in addition to the economic value. These three aspects are often called the triple bottom line of sustainability. It is important for companies to understand both the positive impacts and the challenges that arise from exploiting the Product as a Service model from the perspective of all these aspects.

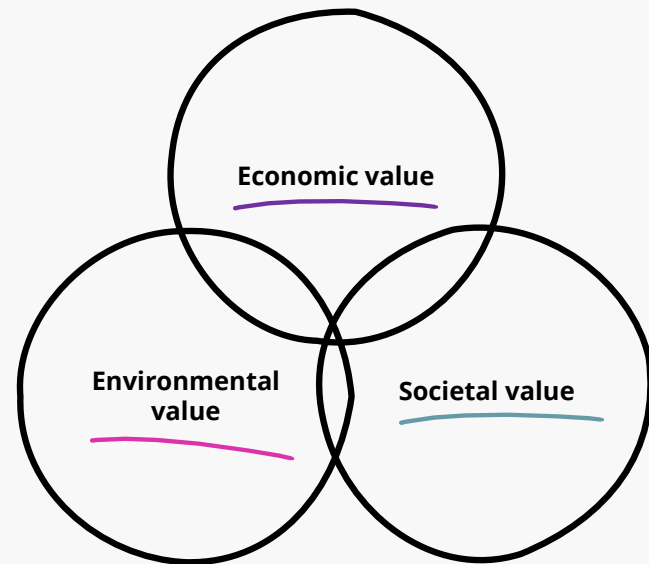


Figure 4. The triple bottom line of sustainability.

## How to gain economic benefits from the model?

Sustainable business needs to be economically sustainable in addition to environmental and societal sustainability. Economic sustainability may be gained by profitability of business or with public or private economic support when the activity is regarded as generally valuable for a society. In sustainable business, the aim is to optimize the profitability to produce environmental and societal value – rather than to maximize the profit. The goal is to achieve the correct (dynamic) balance.

From the business point of view, the Product as a Service model offers several benefits compared to other business models.

The benefits include:

- Potentially new customers who, for example, cannot afford to buy the product
- Competitive edge over the cheaper but less durable or less effective products when the life cycle costs and profits can be raised as a decision criteria
- Tighter and continuing relationship with the customer

The potential challenges or barriers for companies to deploy the Product as a Service model may include e.g.:

- The service provider must invest in the product and find funding
- Arranging the logistics in a sustainable manner
- Customers compare the price of the novel service mainly with the price of the traditional offering, i.e., product
- Rapid changes of trends, fashion and developing products

## Value for customer

The form of need (and use) affects the benefit that the Product as a Service model offers to the customer. If the product is used occasionally for short periods, the conclusive value for the customer is different than if the product is used continuously. Examples of the former are rental (or service) of formal wear, tools, or a truck for private use. Examples of the latter are work wear, productive machine hours, or transportation services for continuous business use.

From the customer point of view, the product as a service model offers several benefits compared to other business models. The benefits may include e.g.:

- Confidence that the product is ready for use when you need it
- No need to care for the product after or during use

- Flexibility when needs change – if you need something more or less, or something different
- No need to invest in the product

The challenges or barriers included in the product as a service model from the customer's perspective may include e.g.:

- Moving away from the ownership of the product (change in the mindset)
- Sharing the product with other customers (e.g., hygienic concerns)
- Arranging the logistics and product-maintenance (if not provided as a service)
- Requirements for planning (e.g., timing of product use)
- Incompatibility of the product selection with specific customer needs

## How does the model affect society?

One of the most used tools for assessing the impact of the Product as a Service model for society are the Social Impact Assessment and the Human Rights Impact Assessment. Social impacts can be categorized in human rights (e.g., child labour, forced labour, non-discrimination), labour practices and decent working conditions (e.g., wages, benefits, safety at work, job satisfaction), society (e.g., corruption, job creation, support of local suppliers, and product responsibility (e.g. product safety concerns, labelling, ethical marketing communications)).



## 3.2 ENVIRONMENTAL VIEWPOINTS FOR DEVELOPING A PAAS MODEL

PaaS is often assumed an environmentally friendly way to provide goods. However, there is a wide variety of product-service systems, and many are still under development. Before any sustainability claims, the potential environmental impacts of the system should be studied. A recommendable method is life cycle assessment (LCA), which covers everything from raw materials and manufacturing to logistics, use phase and final disposal. This way, the biggest environmental risks can be identified from the life cycle, and the findings should be used to design a truly sustainable product-service system. In this chapter, some relevant environmental viewpoints are presented.

### **Environmental savings by less production and responsible usage?**

Sharing the same product with multiple users can reduce the number of products in the market, while still satisfying user needs. If this leads to less demand on raw materials and manufacturing, natural resources are possibly saved, and emissions avoided. Another benefit comes in disposal: providers likely know the materials used in their product, which enables efficient reuse, waste sorting and recycling. With less products in use, also less wastes are generated.

When a product is offered as a service, it likely gets more uses during its lifetime than

a single owner would do. It may also wear out faster, so proper maintenance is needed to replace parts, clean the product between users etc. In product-service systems, the provider is able to control the product's use phase, track faults, guide users for careful handling and set up a proper maintenance system. This may prolong the active usage time for the product or its parts and avoid unnecessary repairs. In general, any avoided human operations are good for the environment.

## Logistics and customer behaviour need attention

Transportations are often needed in between of the use periods. The pick-up and return of the product, storage and packaging, travel of the maintenance staff and other logistics cause a lot of environmental risks and emissions. It must be ensured that customers can reach the product without useless travelling – preferably by walking, biking, or public transport. The optimal service place would be where the customers are likely to pass anyway, so there is no need for extra travels. If the product requires checking and maintenance between use periods, those operations should also happen within a short distance to avoid excess transport emissions.

Product as a Service can reduce material consumption, but the opposite may happen if the service attracts new customers that otherwise would not use the product. Therefore, the service should be designed for real needs rather than creating new ones. The users are responsible for many environmental impacts, so they should be advised to maintain and transport the product in a sustainable way. Actual customer behaviour may be hard to control: there are always risks of diminished product lifetime and emission intensive travels. Another concern is if no one wants a slightly worn-out product, meaning that it must be disposed too early or stored very long before the next user.

## Assessing the environmental impacts

Compared to traditional life cycles, Product as a Service mostly affects the use phase of a product. More transportation and maintenance are needed, possibly with new infrastructure like lockers and mobile reservation apps. The life cycle emissions of one product may be higher than those of a single user alternative, but such comparisons are unfair if the product-service system also reduces material consumption and waste. A more complete view can be achieved by scaling the life cycle impacts against active usage time.

Many LCA studies indicate that user transportation has major environmental impacts in product-service systems<sup>5,6</sup>. This especially increases the global warming potential (=carbon footprint) of the product. Environmental savings are mostly visible through smaller demand of natural resources, i.e., less products on the market. It is rare that one solution would be the best in all environmental impact categories, which makes life cycle comparisons even harder. Also, the LCA results highly depend on assumptions: travel modes and distances, expected product lifetime and active uses, maintenance needs etc. These parameters can be tested by making multiple scenarios of the life cycle and seeing which are the most environmentally sensitive factors. Before any global conclusions, more research is still needed from actual product-service systems, especially their using phase.

<sup>5</sup> Martin et al. 2021: Environmental assessment of a product-service system for renting electric-powered tools. *Journal of cleaner production* 281 (2021), 125245

<sup>6</sup> Levänen et al. 2021: Innovative recycling or extended use? Comparing the global warming potential of different ownership and end-of-life scenarios for textiles. *Environmental research letters* 16 (2021), 054069

## Conclusions and recommendations

The environmental impacts of product-service systems are uncertain, depending on how this system is executed and analysed. It is not obvious if the avoided burdens of material consumption overcome the added logistics impact. Critical LCA studies with various scenarios should be done to optimize the product-service system, and to choose if that is even the right business model for a certain case. Environmentally, product as a service is most suitable for products that include critical materials or cause high emissions during production.

To maximize the environmental benefits and minimize risks of a product-service system, at least the following points should be noted:

- Pay attention to transportation distances and methods!
- Ensure proper maintenance to maximize the product lifetime but try to avoid any unnecessary operations.
- Before shifting to a full-scale system, pilot trials should be done and carefully documented to further improve the environmental performance.

# 4

## BUILDING A PRODUCT AS A SERVICE MODEL

Moving towards circular economy enables companies to produce more value with less resources. When deciding what kind of business model a company wants to foster, they should keep in mind the key principles of circular economy<sup>7</sup>, such as prolonging the life cycle of a product, creating value in collaboration, and advancing knowledge and awareness, as well as the possibilities they offer. Are some of these principles already a part of the company's strategy and which ones should they focus on hereon?

Circular economy business models can be divided into five subcategories:

1. Renewability
2. Sharing platforms
3. Product as a Service
4. Product-life extension
5. Resource efficiency and recycling<sup>8</sup>.

For a deeper perspective, circular business models can be divided further into models of producer ownership. These are related to change in the ownership of materials and products, whereas circular economy business models are more broadly focused on the circulation of materials and products. These models are Product as a Service, material as a service, performance as a service, and function guarantee.<sup>9</sup> Here we have concentrated on Product as a Service models.

Before building a new business model, the following questions should be considered: *How does this new business model contribute to the market, what kind of issue can be solved through this and is it profitable for the company?* One should have an idea of what kind of actors have already implemented similar business models in the field, how have they worked, and what kind of added value

can be brought to the market by this business model. This evaluation of existing models as well as the one under construction lays out the criteria for a successful circular business model. Success can be measured also by imagining the value the business model might and is hoped to have for the customer and the company, as well as the environmental and social impact i.e., the net-positive impact it might entail<sup>10</sup>.

The company should keep in mind that the product in question should be an alternative to purchasing something new, be utilized better than the non-circular alternative, be more efficient in terms of operational impacts, and incentivize to design for cyclability and sustainable behaviour among the consumers<sup>11</sup>. The goals for the process should also be set: *What are the issues studied during the process? What do we want to accomplish?*

<sup>7</sup> Circle Economy. The Circular Toolbox: Key Elements of the Circular Economy Tool.

<sup>8</sup> Sitra. New business models play a key role in enterprises' strategies. 2019.

<sup>9</sup> Sitra. Rethinking ownership. 2020.

<sup>10</sup> Circle Economy. The Circular Toolbox: Circular Business Model Success Criteria Canvas.

<sup>11</sup> Circle Economy. The Circular Toolbox: The Urgency of Circular Business Models.

Before entering the market, the company should familiarize itself with it, as well as the potential customer and the stakeholders in the market i.e., the ecosystem the company is taking part in. As stated before, there is demand for circular business models. In addition, there are already many examples of Product as a Service cases from clothing as a service to tires as a service.

Based on research the Waste and Resources Action Programme conducted, the customers, in addition to the state of the market, are ready for new innovations and consumption models. New alternatives to the linear consumption norm have attracted the interest of citizens. Young, higher-spending, frequent shoppers are the most interested in the new models.<sup>12</sup>

When creating a new business model, getting familiar with the customer is just as important for the company as getting to know

the market. For some companies this might be the same target group as the one they already have. However, most companies must do an evaluation of their customer base to spot the ones who might be interested in the new business model. The customers targeted in the business model are the ones who define the needs, interests, and challenges, which should be considered when constructing the model.

The concept is built based on these three objectives: customer, market, and stakeholders. Some obstacles might be recognized here:

- how to get the customer interested in the product offered
- will the process run smoothly
- are the customers committed
- how will the marketing work
- is the offered product truly a more ecological alternative?

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<sup>12</sup> WRAP. Changing Our Clothes - Why the clothing sector should adopt new business models. 2020.

These obstacles help in planning out the platform used, and products offered in the business model. The operational ecosystem will differ in each case and will highlight the needs for any additional services crucial for the customers or the service providers.

Moving towards circular economy and implementing the business model needs testing and validating or/as well as visioning and road mapping <sup>13</sup>. Testing and validating is an agile and quick way to get results from the process and its implementation, and to find out whether additional value can be created through this process. As a result, a company has gathered knowledge and possibly conducted a successful pilot. This might be a risky yet fast way to proceed with the process.

Visioning and road mapping, in turn, builds a more sustainable and future oriented strategy for moving towards circular economy. The road map offers clear steps for how to make the vision come true. With this, the company can integrate the new business model into its operations.

The two strategies presented here can also be used side by side. The process can be scaled up or down based on the organization in question. Every company has unique needs and purposes for forming the base for the circular business model.

<sup>13</sup> Sitra. Kestävää kasvua kiertotalouden liiketoimintamalleista. Käsikirja yrityksille. 2022.

## DEVELOPER'S PATH

This chapter will give a more detailed guide for developing the PaaS model. The developing of the model can be done with the help of the developer's path illustrated below.

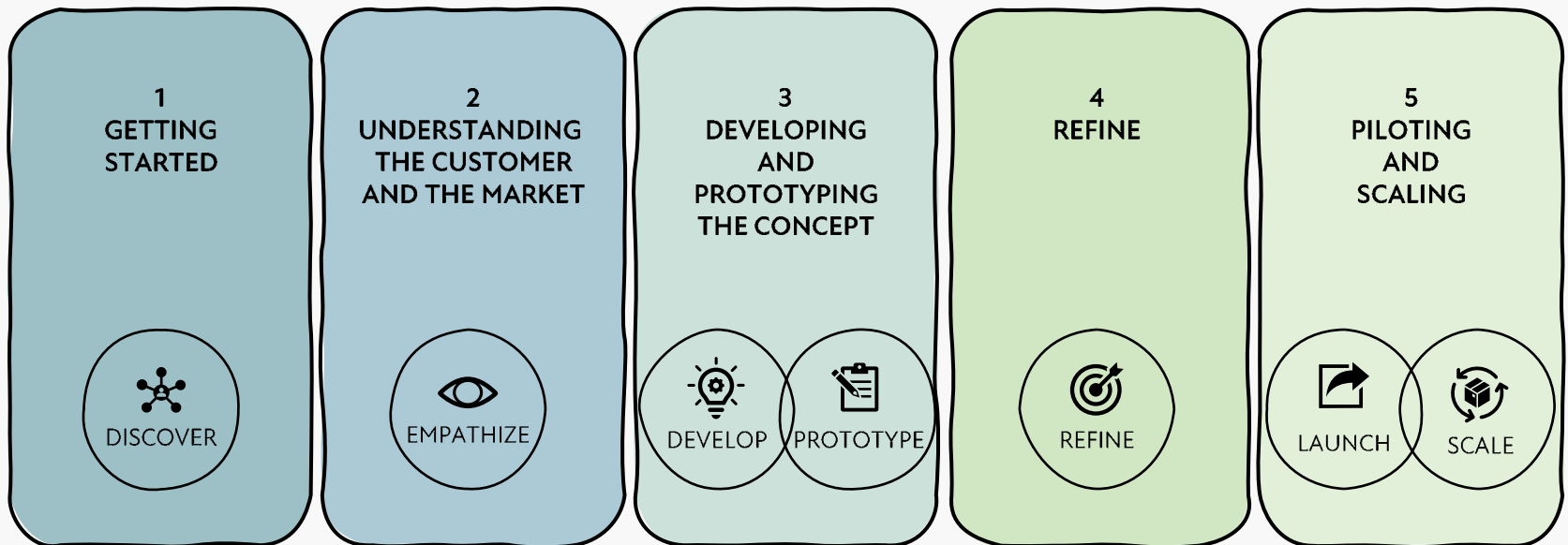


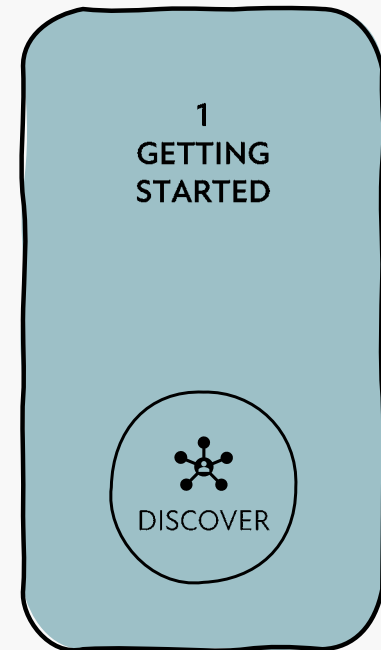
Figure 5. Product as a service developer path.



## GETTING STARTED

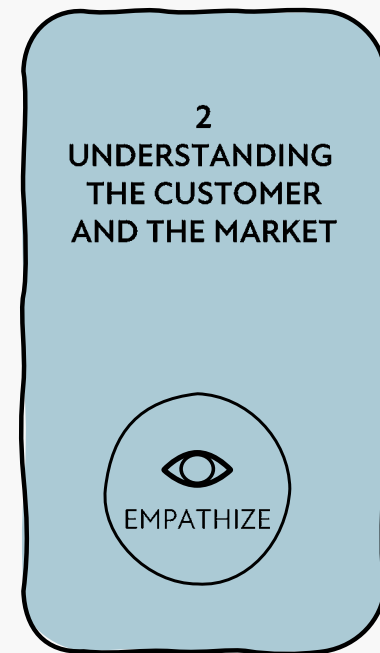
- Consider the rising demand and need for the circular business models on the market and figure out what kind of sustainable model you could aim to contribute the trend.
- Whether you are planning to go for circular economy by creating a Product as a Service concept or to transform your current linear business model towards circular by launching Product as a Service model, you need to map your circular business success goals on key areas: Your company and circular business model idea, from your customer's perspective and the environmental impact of your business.
- Use for example the CBM, Circular Business Model Success Criteria Canvas<sup>14</sup> to align on what you want to achieve by these focus areas.
- Prioritize the key targets. What kind of acts these targets require in your concept under construction?
- Scan relevant stakeholders, what kind of ecosystem: partnership or facilitators your circular concept would need, e.g.: digital platforms, delivery services, logistics, maintenance, take-back and post customer waste processes.
- Make it tangible, visualize a stakeholder map.
- Find out collaborative opportunities to co-operate with local non-profit organizations (which support entrepreneurship) and university level RDI projects to get sparring in your project.

<sup>14</sup> Circle Economy. The Circular Toolbox: Circular Business Model Success Criteria Canvas.



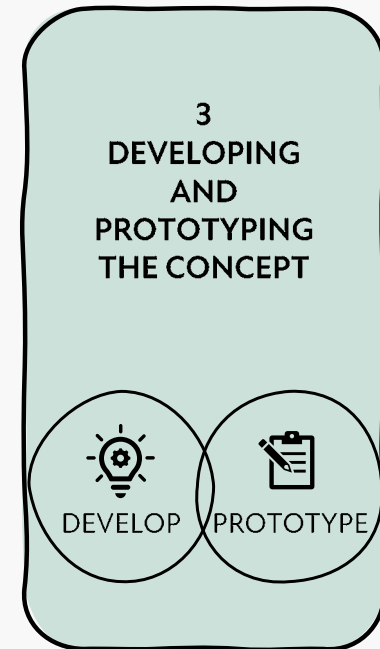
## UNDERSTANDING THE CUSTOMER AND THE MARKET

- Who is the potential customer?
- Define your ideal customer profile and customer persona.
- Recognize your customer demographics, needs, values and “jobs to be done” (problems).
- Find out how your service and concept idea correspond to your customers’ needs.
- Create a preliminary value proposition statement by reflecting the customers’ and market needs.
- Clarify how such a circular business model creates value for your customer, which factors in your concept get the customer to make a sustainable choice; e.g., Product as a Service system instead of ownership.
- Ask your customer: exploit customer surveys and / or customer interviews.
- Get to know the market.
- Consider the rising demand and need for the circular business models on the market and figure out how your business idea could contribute to the trend.
- Benchmark and scan the market, who are the relevant competitors? How do they operate?
- Consider how your Product as a Service model is special compared to the traditional linear business model and, also to the circular equals already on the market.
- Scan the potential partners to collaborate with.
- Ask advice from experts and partners.



## DEVELOPING AND PROTOTYPING THE CONCEPT

- Make the concept brief:
  - Define targets and goals for the Product as a Service concept by using the discovered material in previous steps.
  - Define your financial business goals, make calculations, estimate variables, and set the price for the service.
- Work collaboratively with your team and stakeholders.
- Co-design with your partners and customers.
- Visualize a customer “journey map” considering every interactive step the customer should take before, during and after using your service.
- Explore the decisive gaps, gains and pains, from the customer’s perspective.
- Test quickly with your customer. Use easy prototyping methods to get fast reactions and pros and cons.
- Develop and prototype the concept:
  - Sketch out the concept by considering key partners, key activities, key resources, customer relationships and segments, channels, value proposition and finally cost structures and revenue streams. Use Business Model Canvas templates to visualize the concept.



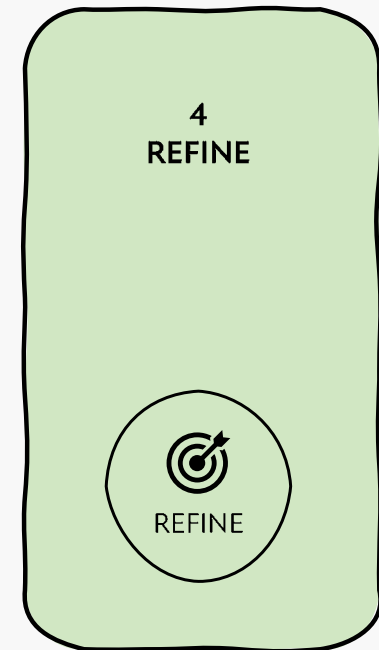
## REFINE

- Identify the steps and decisions you still need to make before launching by using for example the Business Model Blueprint canvas<sup>15</sup>. This template helps to map out systems, processes, content, and capabilities that need to be in place to deliver your business model to the customer.
- Update and define the value proposition statement of your circular business model and the Product as a Service concept strategy.
- Define your partners, use a partner database and partner guidance tools to explore the most common challenges that brands experience as well as how to tackle these challenges.<sup>16</sup>
- Cross-check your circular business model to avoid common blind spots and to ensure it has a net-positive environmental and social impact. For example, the Impact Dial template<sup>17</sup> is helpful.

<sup>15</sup> Circle Economy. The Circular Toolbox: Business Model Blueprint Canvas.

<sup>16</sup> Circle Economy. The Circular Toolbox: Identifying and selecting partners.

<sup>17</sup> Circle Economy. Circle Economy. The Circular Toolbox: The Impact Dial Template.

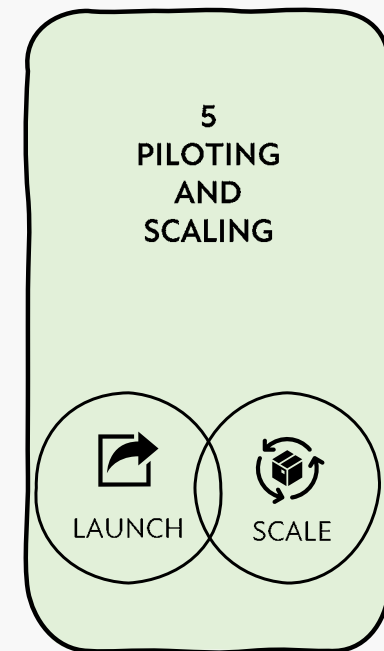


## PILOTING AND SCALING

- How to tell the story for the audience?
- Create marketing campaign ideas and a concept: Think how you could shift the customer behaviour change towards a sustainable choice by benefitting your Product as Service concept?
- Build a pilot plan and test the concept in practice by piloting it with customers.
- Follow the piloting process, collect the data and feedback from the process team, customers and involved stakeholders.
- Align and engage your team for measurable goals for your business model by setting objectives, key results and initiatives for the pilot. By defining these factors, a clear separation between

outcomes (what did we achieve?) and outputs (what did we do?) can be seen. Use for example the OKRs and Initiatives template to figure out.<sup>18</sup>

- Measure, if possible, the concept's impact for emissions and / or carbon footprint and make a product lifecycle analysis.
- Exploit customer surveys and / or customer interviews during the pilot.
- Analyze the data, challenges, obstacles, and opportunities.
- Define and scale the final circular business concept, service, and the brand.



<sup>18</sup> Circle Economy. The Circular Toolbox: Piloting your business model.

## HELPING HAND

There are plenty of different readymade templates and even toolsets to use in refining your business model into a circular one.

### **CIRCULAR ECONOMY BUSINESS MODELS FOR THE MANUFACTURING INDUSTRY**

For meeting the needs and figuring out the right circular business model for the company, a [Playbook](#) published by Finnish Innovation Fund Sitra is a good toolset to start. The Playbook follows the path of building up the circular business and offers basic key templates to work with. The Playbook is made specifically for the manufacturing industry. It gives real life examples from Finnish companies from the fields of Machinery & Equipment, Marine, Energy and Transportation.

### **THE CIRCULAR TOOLBOX**

Another publication that follows the developer's path very well is the Circular [Toolbox](#) by Circle Economy. The Toolbox is made specifically for Product as a Service and Resell business models and there are many useful templates. The Toolbox is made for apparel brands, but the templates work for any kind of industries.

### **LEAN SERVICE CREATION HANDBOOK**

It is possible that when a company starts to develop new business models, the problem is not actually in markets or with the customers, but the problem is in the company culture. To help the change also inside the company, for example this Lean Service Creation [Handbook](#) by Futurice can help. The objective of the Handbook is to form better digital solutions, but the tools and templates can be used to design the new service and facilitate the change in any kind of companies to a customer centric way, which is initial specially in service development and also in circular economy.

5  
PRODUCT  
AS A SERVICE  
PILOTS

## 5.1 WORKWEAR AS A SERVICE – CASE IMAGE WEAR

### Company introduction

Image Wear is solid family-owned workwear supplier which has manufactured working clothes since 1959. Currently there are more than 5000 different kinds of articles in their selection. The company operates in several countries and emphasizes the quality of their materials, design, manufacturing, and professional customer services as their core values. Collaboration with their partners plays a fundamental role in their business model.

Image Wear Corporate includes the Tampere-based parent company Image Wear Oy, a daughter company in Estonia and a retail chain as a distribution channel. The company offers professional BtoB workwear and industry-specific clothing solutions for almost all sectors including transportation, security and industry, trade and services,

healthcare and catering. In addition, the majority of Finnish uniform users are customers of the company. Currently, Image Wear mainly operates by selling workwear clothes and items, but they have developed an experimental rental service concept for selected BtoB professional sectors.

Image Wear is committed in an environmentally responsible manner of operation to support sustainable development and circular economy in their business. The company highlights sustainable principles as their strategy in terms of developing business and collaboration. Image Wear's ambition is to help their partners and customers to reach safe and better working days and effective working conditions.



## Image Wear Rental service concept

The current concept includes rental workwear services for BtoB customers and professional sectors. The rental system is based on a contract with monthly invoicing. Customers make their individual choice from the Image Wear workwear selection and decide a suitable rental period. Selected items are tagged with a digital RFID system to follow the rental process. The customer profile can be added to a digital data system and with the help of the RFID tag it can be linked to the selected clothes.

The rented items are delivered for the customer from the Image Wear stock by

post. During the rental period, the customer is responsible for the washing and cleaning. When the customer decides to return the clothes and update the selection, or to terminate the contract, the clothes will be either collected by a co-operating laundry or the customer shall send them by post to the laundry, where the clothes will be washed and checked. Finally, after maintenance, the clothes are delivered back to the Image Wear stock.

In terms of targeting profitable business and benefiting the company and customer even better, the current rental service needs

to be refined further. PaaS Pilots, the Product as a Service project offers a great possibility to update and develop the concept. Customer-centred Design Thinking and Service Design principles are worth to consider in this project. From this point of view, the fundamental issues for the question “How should the current concept be developed?” are: Who is the ideal customer for the concept? What kind of services does the customer need? How can the customer needs be responded?

## Pilot planning and piloting

The target for the project was to test the rental concept by piloting it with selected customers, collect the data and exploit the feedback of the piloting process. The project core team started the development work by discussing and listing the challenges and opportunities of the current concept. First of all, the team defined the targets for the pilot:

- Update the current concept and process
- Find out how the rental concept will generate a profitable business
- Increase customer engagement and added value

Major challenges in the product as a service system are rental process functions in practice and customer engagement. Also, rental concept brand designing, and marketing need special consideration in terms of customer embracement for renting instead of owning.

The pilot planning focused on highlighting the process, the customer feedback, and the rental items. It was crucial to define what kind of data needed to be collected and how the data was collected. The discovery consisted, on the other hand, of project core team discussions, as well as market benchmarking and BtoB customer interviews. In addition, the pilot agenda was divided into supportive workshops which each assist to

figure out gains and pains of the concept and to brighten the focus, e.g., circular business model criteria, profiling the BtoB customer and mapping the customer journey and steps before, during and after the rental process. Finally, the concept was tested by piloting with selected BtoB customers. In the end of the piloting period, the collected data and feedback were analyzed in a co-design workshop considering customer feedback and rental process workability to map out systems, processes, content, and capabilities that need to be in place to launch the concept.

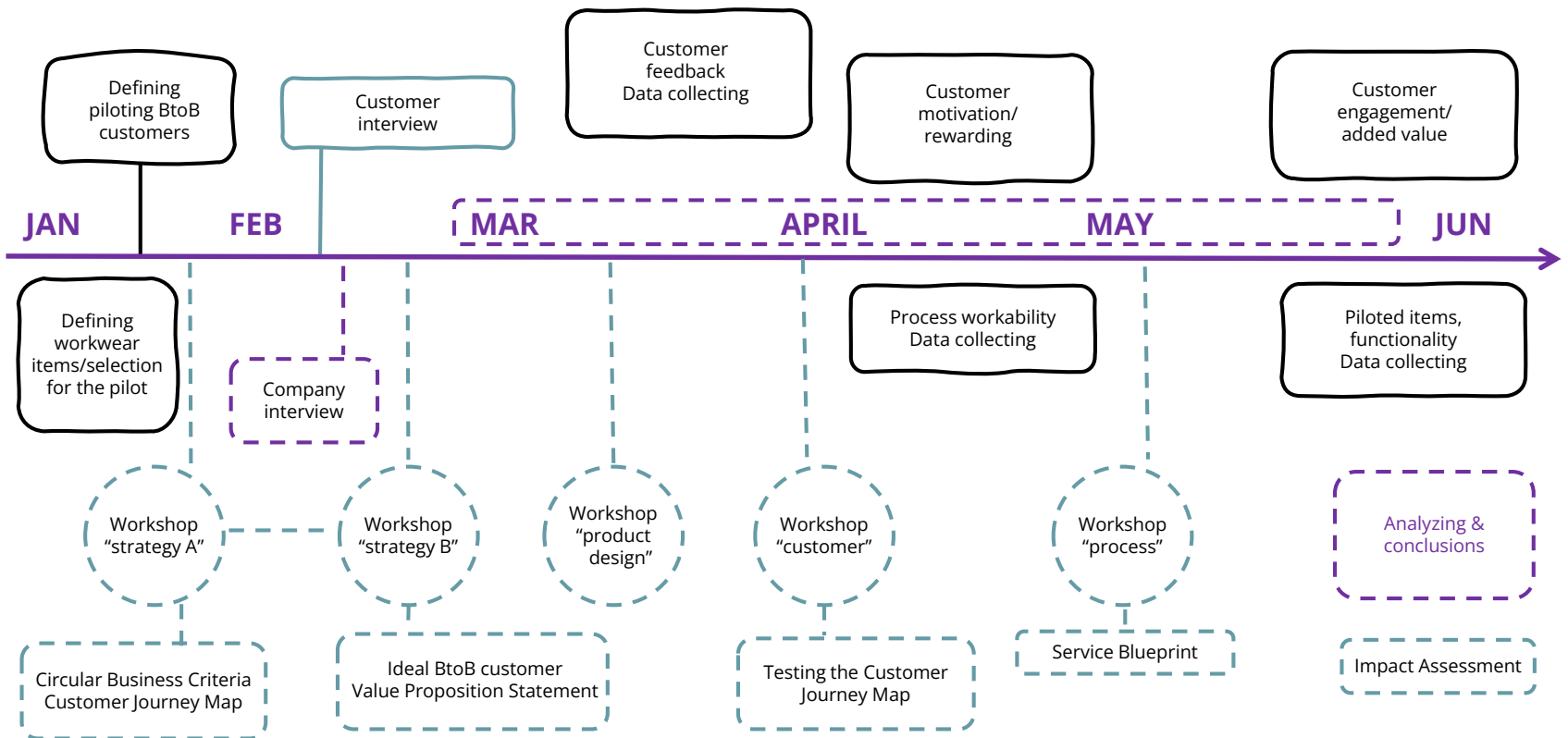


Figure 6. Workwear as a service pilot timeline and major activities.

## 5.2 CASUAL WEAR AS A SERVICE – CASE PURE WASTE

### Company introduction

Pure Waste Textiles was established in 2013 based on an idea which was born at an accessory brand Costo Oy. The idea was to use only 100% recycled fabrics in the production. Fabrics made entirely out of recycled materials were nowhere to be found, so Costo Oy started developing their own. In 2011 they run tests in China on the premises of a local partner. When Pure Waste Textiles was established, the production moved to other premises which are located in India. Pure Waste is based in Helsinki.

Pure Waste operations are based on collecting and recycling cutting waste from textile industry in India. This cutting waste is sorted, processed, and manufactured into textile products.

The products are made fully out of recycled fibres i.e., no virgin material is used in the manufacturing of the products.

Pure Waste mostly produces garments for consumer use, but they also market their products to companies. Currently, Pure Waste is piloting and developing a rental service concept for selected consumers as a result of their strategy to improve the circulation of textiles and sustainable manufacture. The company wants to offer more environmentally friendly solutions for consumers, who want an alternative to owning as well as variation in their wardrobe. This can be done by reducing the need for owning and the need for long-time commitment to a garment.

## Pure Waste Rental service concept

The base for building a clothing as a service model at Pure Waste started with an experiment in 2020. The experiment was carried out by Turku UAS. 20 participants were chosen for the experiment. They got to wear the chosen garments for two weeks, after which they were returned to Pure Waste, where they were washed and returned to the participants. The experiment lasted for eight weeks altogether.

PaaS Pilots, the Product as a Service project offered a great possibility to update and develop the idea of a rental service into a business model. The focal goals selected for the piloting process were:

- Closed loop for garments, management of risks and the environmental effect
- Added value for customer
- Strengthening the brand image and trailblazing the way
- An alternative to owning

The Pure Waste rental concept currently offers customers the possibility to rent clothes for a period of their choosing from 1 month up to 3 months. Rented items are delivered to the customer either by a re-pack postal system or by delivering them to Pure Waste's flagship store. The customer is responsible for the washing and cleaning during the agreed rental period. When the rental period ends, the customer returns the items either with re-pack by post or by delivering them back to store. After the items are returned, they will be washed, checked, and delivered back to Pure Waste stock by a co-operating laundry.

## Pilot planning and piloting

The development work started by discussing and listing the challenges and opportunities of the current concept. First of all, the team defined the targets for the project:

- How many people are interested in this service?
- How many people take part in the pilot?
- How are the garments affected during the pilot?

The crucial pressure points were outlined at the very beginning of the process. These included the logistics, timetable, choosing the proper additional services, the demand exceeding all expectations, and the customer returning a Pure Waste product which is not included in the rental service.

In the pilot planning, the team focused on the process and customer experience. The plan for collected data was outlined. During the process, two types of interviews were conducted, piloting company interviews and consumer interviews. Also, the feedback from the customers was gathered about the idea of Product as a Service in general, about the ordering process, and finally

about the experience on the whole service from the participants.

During the process, four workshops were organized to help in establishing the gains and pains of the concept, as well as to elaborate the focus for example customer personas and the customer journey, and marketing. The concept was finally tested by the piloting customers, and feedback was collected. Based on the feedback, collected data and success of the process, a service blueprint and impact assessment about the actual service were laid out. The environmental impacts of this trial are assessed in a Bachelor's thesis of a student at Turku UAS.

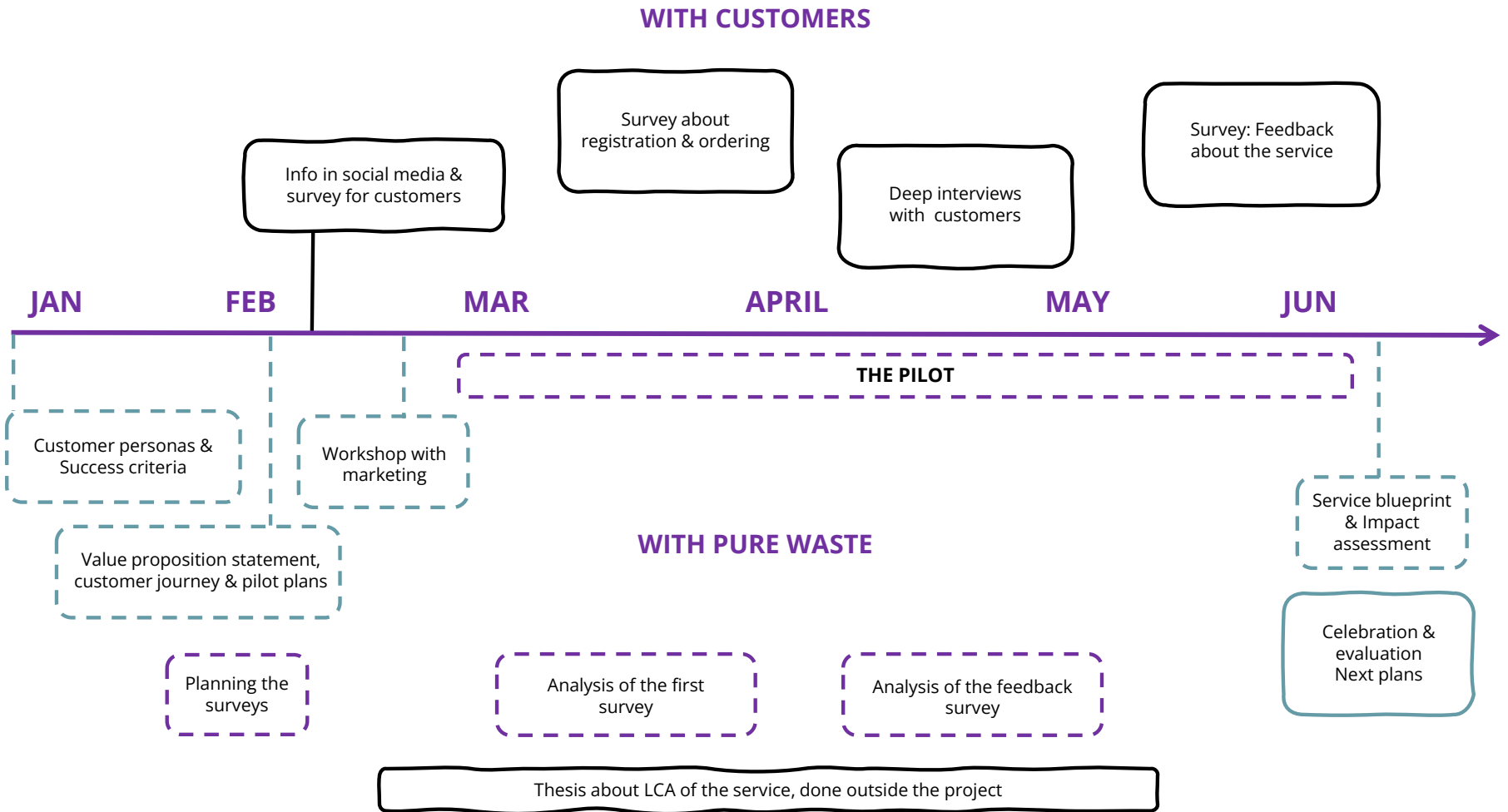


Figure 7. Casual wear as a service pilot timeline and major activities.

# 6

## CONCLUSIONS



This guide has aimed at providing useful tips and tools for companies interested in the *Products as a Service* business model. We piloted the model with two Finnish textile sector companies. Still, we want to emphasize that regardless of the company's operative domain, the guide helps you form a circular business model, no matter the business sector you come from.

What have we learned having done this research and pilots with the companies? We learned that it is definitely easier to provide the information for the companies to start building a new business model, than it is to actually implement it. In addition, the business models, just as the companies building them, vary. There might be a new startup creating something from scratch or on the contrary, an experienced company, which has decided to make its business more circular. There is no one answer to questions like: what is the target group or how much the customer is willing to pay for the service.

The Product as a Service model can offer many sustainability benefits as well as several business opportunities for companies. However, some things, like the environmental effects of each service, are not so straightforward. It should be considered that sometimes the new business model is not environmentally or otherwise more sustainable than the already existing model. However, this does not mean that one should not try to pilot a concept. It is definitely useful to pilot and document each step, so that progress is made possible. At best, the circular business model is more beneficial than the linear model both environmentally as well as economically.

