As-A-Service & Circular Economy

Common challenges for making As-a-Service support the transformation to a Circular Economy.

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Introduction

This white paper explores the different challenges that can be made when combining circular economy and the As-A-Service business model. Implementing a circular economy is complex and some elements should not be underestimated. This paper is written predominantly from the perspective of manufacturers and/or integrators.

The common challenges analyzed in this paper are:

- Not providing an adequate solution to foster employee engagement with the circular economy
- Not working on R&D to extend the life cycle
- Underestimating the work to analyze the user's needs
- Not maintaining the product in their original operating condition
- Underestimating the complexity of reverse logistics

This white paper is the third one out of four papers. The first one gives insight about **connecting the dots** between the As-A-Service business model and the circular economy, the second one is about the **planned obsolescence** and the last one offers 5 ways to initiate the circular economy contributions within the As-A-Service model.

1. Not providing an adequate solution to foster employee engagement with the circular economy

The environmental behavior of employees is a key part of implementing a circular economy model in the organization. A pro-environmental behavior in an organizational setting is triggered not only by the individual's environmental concern, but also by the **perceived organisational support** for employee environmental efforts. The attitude of the employees depends not only on perceptions specific to environmental issues, but also on their general view of the organization. When connecting the circular economy and the As-A-Service business model, employees' commitment can only happen if the manufacturer or integrator shows support for environmental behaviors and finds ways to increase the employees' commitment (valuing and recognizing workers' efforts, facilitating suggestions for environmentally beneficial changes).

2. Underestimating the work to analyze user needs

In the B2B buying process, the customer is more research-oriented than the end-user. The decision-making process also involves more individuals in the corporate hierarchy. The service quality must be high and consists of service process quality and outcome quality. The B2B customer service is often based on a **long-term relationship**, the B2B customer needs are different and as such require a unique approach. A manufacturer or integrator applying the As-A-Service business model must keep in mind the requirements of its customers as well as the end user.

User needs analysis are paramount when a manufacturer or integrator implements an As-A-Service model. In this model, the use is sold, not the product. Activities must be as efficient as possible to optimize results, which is why it is important to fully understand user needs. Several tools are available to analyze users (personas, user journey analysis, etc.). There are also several data collection tools that allow the following and management of the evolution of user behavior, from a tool like Google Analytics that measures behavior on a website to information collection modules that can be integrated into a product .

However, to develop products for future users, we need to understand the environmental impacts of production and the services that surround them. Human-centered design is no longer able to meet the needs of users, particularly because of the social and environmental consequences of linear production systems. This is more important than ever as there is a growth of deeper understanding that humans are part of the ecosystems and depend on nature to survive. Products designed for a linear system are not sustainable in the long term to meet the needs of present and future users.

The added value of the circular economy is more complex than that of the linear economy because the whole life cycle of the product must be analyzed. The product/s offered must be a combination of several values: functional values (performance, results, etc.), values related to the quality-risk-price ratio, symbolic values (self-expression, social and personal meaning) and values related to the experience (sensory, emotional). Engaging the B2B customer or even the user in codesign, co-creation or even co-production allows the validation of values that are essential for the end-user.

3. Not working on R&D to extend the life cycle

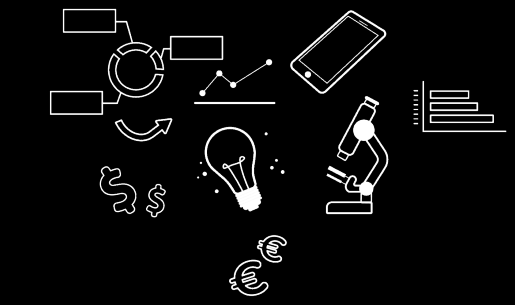
The circular economy is a system that aims to reduce the amount of waste generated by human activities. It is positioned opposite the linear system which is still the most commonly used production system today. **Life Cycle Assessment** (LCA) is an effective tool to measure the sustainability of a product, it is associated with the ISO 14040 standard. It is a scientific technique to calculate the impacts of each activity associated with a product,

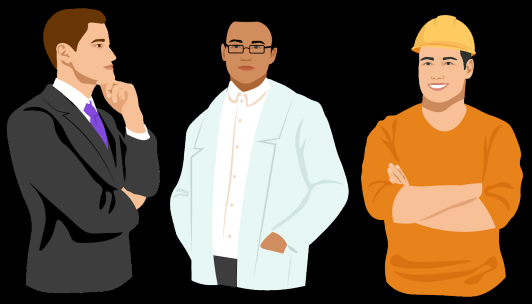
from the extraction of raw materials to the end of life of the product. LCA also gives indications on the social and environmental impacts of the end of life, for example under certain conditions, recycling is more polluting than landfill.

The advantage of LCA is its holistic approach that allows for better decision making. This tool highlights activities that need to be improved to be more circular and to better match the economic objectives of the organization.

Life cycle design is one approach to **ecodesign**, which includes eight product development strategies:

1. Selecting raw materials with low environmental impact
2. Reducing the use of raw materials
3. Optimizing production techniques
4. Optimizing distribution systems
5. Reducing the environmental impacts during the usage phase/s
6. Optimizing the initial life cycle of the product (first use cycle)
7. Optimizing the management of the end-of-life of the product
8. Developing new concepts (innovation)





In order to create good economical models, taking the life cycle perspective into consideration is indispensable.

4. Not maintaining the products in their original operating condition

Quality management within an organization is a way to assess and improve efficiency, reduce waste and improve business processes. With effective customer service comes an increased competitive advantage. Product performance and customer service are closely linked to user satisfaction. The better the product quality, the less the user service operation will be called upon to correct subsequent problems. A high demand on the user service operation leads to lower user satisfaction and higher costs (repairs, product changes). Keeping the product in its original operating condition is called **proactive maintenance**. Through preventive and predictive maintenance, the manufacturer or integrator keeps the product's operating performance high. Reactive maintenance puts the organization in an emergency state and is more costly (complex repairs, safety and environmental risks, missed deadlines, dissatisfied users, etc.). Proactive maintenance

allows the product to operate longer, thus extending its life cycle and reducing its impact on the environment. Maintaining the product in as close to original condition as possible allows the user to keep a high performance, for example an employee on the move will lose productivity if the battery life of his laptop is reduced.

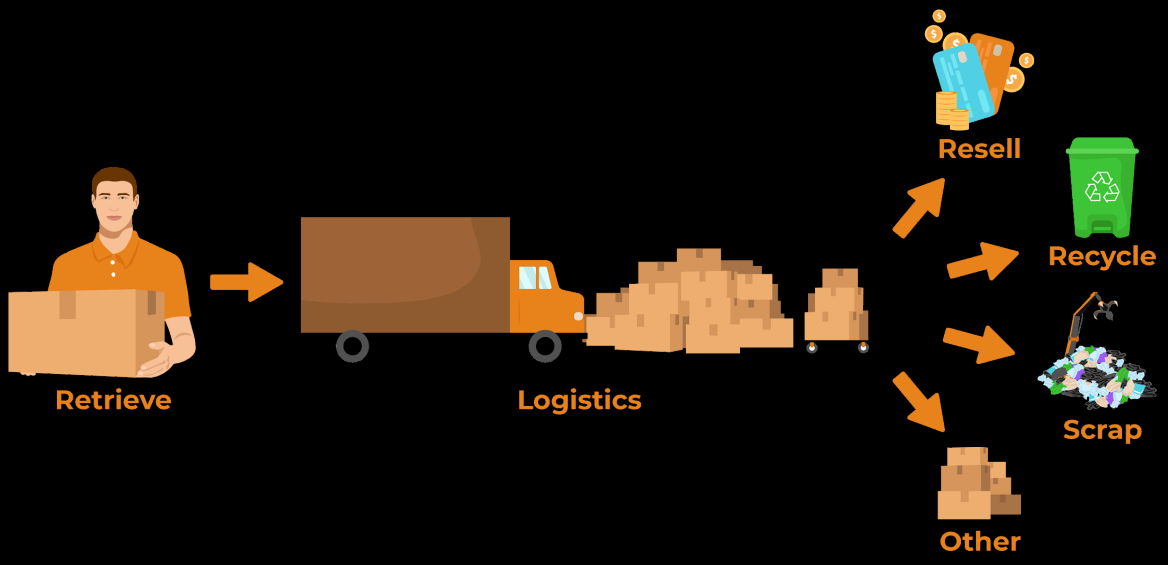
A lower quality product breaks more easily. In a linear economic model, this is called planned obsolescence (to learn more about planned obsolescence, see our second white paper) and it is responsible for many social and environmental impacts (greenhouse gasses, mountains of open dumps, etc.).

5. Underestimating the complexity of reverse logistics

Reverse logistics is considered a very effective tool in the fight for environmental preservation. It is not only the return of products from the user's hands to the manufacturer's or integrator's hands, but also takes into account all the activities surrounding collection, disassembly and treatment of materials. This concept of reverse logistics prevents products from ending up in a landfill or incinerator. The complexity of reverse logistics lies in the fact that it must go back up the entire supply chain.

This raises many questions:

- How do you recover the products and later the materials within the products?
- Who is in charge of reverse logistics? The manufacturer, the distributor, or the user?
- Can product recovery be done within existing infrastructures?
- What are the costs and benefits of reverse logistics including the environmental perspective ?



- For electronic equipment, how to manage the private data of the users?
- How to manage customs and associated taxes when retrieving products?

To be truly effective, reverse logistics must involve all stakeholders in the supply chain: key suppliers must be involved in the **eco-design** of products to facilitate collection and disassembly.

Employees must develop their ecological awareness and thus participate in the development of technological innovations.

6. What Black Winch can do for you

Black Winch supports organizations in creating and/or improving As-A-Service business models according to their objectives. The Black Winch experts help organizations to tackle the potential challenges experienced in feasibility analyses, improving profitability, securing the market share, and improving customer loyalty.

Turning and developing the product-based linear business model into an **in-house subscription model** brings added value to all the stakeholders from end users to shareholders.

Black Winch aids organizations in developing successful As-A-Service business models through a proven methodology. With a **personalized framework**, Black Winch helps to build or adapt an As-A-Service offer, find financial partners, bring employees on board, train teams, and provide the financial engineering required to ensure the success of the project. Additionally, Black Winch introduces the circular economy and sustainable development which assists in reducing pressure on the environment and waste creation. Black Winch is proud to be part of the Ellen Macarthur Foundation community.

Do you want to connect your business to As-A-Service while going towards circular economy?

Contact info@blackwinch.eu

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