

# INFLUENCE FACTORS OF CIRCULAR BUSINESS MODELS

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## Abstract:

*This article examines the factors that influence economic units in their transition to the circular economy. From the multitude of structural factors, we chose for analysis the influences produced by the resource portfolios and the capacities of the economic units, as well as the business networks.*

*The transition to the circular economy is changing the way companies set up their resource portfolios due to new trends and requirements.*

*When the recalibration of resource portfolios is done for the introduction of the circular model, as well as in the case of business networks that have made the transition to the circular economy, organizational barriers appear.*

**Keywords:** circular economy, factors of influence, sustainable development

**JEL Classification:** O11, O44

## Introduction

The paradigm of the circular economy offers economic, environmental and social benefits. The relevant economic aspects of the circular economy option depend on a wide variety of conditions related to the value chain, the number and type of legislation, etc. Most cases have the potential for a circular alternative, but the costs and benefits vary depending on the nature of each case. More important than providing unique values for different markets is the ability to understand trends to identify potential future developments. In terms of environmental benefits, the transition to circularity would help to avoid emissions, reduce resource losses and ease global systems. For example, it has been estimated that the accelerated transition to the circular economy in the services, food and built environment sectors could lead to a 48% reduction in emissions by 2030 and an 83% reduction by 2050 from 2012 levels. Looking beyond environmental sustainability, the economic benefits and economic relevance of the circular economy are also increasingly recognized among policy makers.

The potential savings in material costs in a circular economy in complex life-sustaining products sectors (especially for cars, machinery and equipment, as well as for electric cars) at EU level are estimated to reach 630 billion euros. dollars per year, while in the consumer goods sector (mainly food, clothing and packaged beverages), net material savings worldwide could exceed \$ 700 billion annually. Moreover, the technological and organizational innovations underlying a circular economy would increase the productivity of European resources by 3% by 2030, the equivalent of 1.8 trillion in total benefits in three areas: mobility, food and the environment.

Beyond cost savings, closing production and waste loops as well as increasing the reuse and recycling of materials have been reduced and improved and can help reduce price volatility in commodity markets and supply risks. Moreover, it has been found that the absorption of circular business models is associated with a high employment potential.

Although these findings show clear benefits for companies that adopt circular business models, in practice there can be many structural influences such as differences in resources and capacities of economic units, networks that can block firms in unproductive relationships and change control through rights. specific contracts.

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## Description of the Problem

Some economic units find it difficult to adapt to the requirements of the circular economy, they face difficulties in reconfiguring resource portfolios because new investments are limited by their existing capacities. For changes such as the implementation of a circular business model, it is necessary to build and complete the resource portfolio of economic units, which will give them a sustainable advantage. The management of economic units must constantly evaluate, measure and reconfigure the resource portfolio in response to market needs, social change and technological progress. A company can reconfigure its resource portfolio by adding, combining or replacing them with new ones. Uncertainty, high costs and rigidities related to new investments due to the implementation of higher requirements, stimulate investment in resources within a company. Due to the magnitude of change, manufacturers often have to rely on the capabilities and resources of their partners to manage and overcome the challenges of profitability. The whole circular system can be in trouble if one partner in a collaboration does not work properly. The risk is very high for business models that focus on:

- (1) resource recovery through industrial symbiosis and closed-loop recycling, whereby waste materials are reprocessed into new resources;
- (2) prolonging the life of the product by redesign and reuse. For a circular business model, several new types of resources and capabilities are needed that focus on collecting or supplying unrecovered materials / resources, in order to turn them into new forms of value or goods with extended life. The difficulty of this model is to predict profitability flows, to collect information about the location and status of product returns and its life cycle.

## Methodology and Data

The methodology used in this research largely includes data from the EEA (2016). Report No 2. Circular economy in Europe, developing the knowledge base. European Commission. (2010). Making sustainable consumption and production a reality. A guide for business and policy makers to life cycle thinking and assessment (Vol. 32).

## Results

Precise information on the quantity and quality of the product life cycle status or on profitability is needed to manage profitability flows, especially when profitability rates are high or when life cycle contracts include the value proposition. To ensure a high rate of return, it is important to determine how products should be collected and by whom, as well as where collection points should be located to ensure customer coverage. Manufacturers often rely on collaborators and use third-party collection companies, sometimes sharing responsibility with them, thus emphasizing the importance of high profitability flows. After the collection of used products, recovery may involve the resale of products, repair or recycling through a series of processes, such as collection, inspection, separation, etc. Investments in financial, human and physical resources must be aligned with the information technology used in the reverse logistics process to improve partner communications, integrate information into the activities of the business unit and receive this information. In circular business models in which the ownership of the product is kept, customers access the product only at the time of purchase. This type of product-service offer consists in the use of the product or the primary result of the product. Customers could close physical products. The adoption of such models increases the importance of complementary services and resources to extend the life of products.

When post-service activities are outsourced, manufacturers and service providers must pursue the same objectives. After-sales services are also important in situations where products are disassembled and usable items are cleaned, repaired and inventoried, making recovered parts an alternative to new parts. In order to perform warranty services on the basis of a properly drawn up contract, manufacturers may hire independent service agents. This creates the possibility for employees to develop resources and, therefore, to participate in co-creating value. After-sales services include installation, warranties, extended warranties, maintenance contracts, replacement parts, training programs, and product upgrades. Businesses that make investments to implement a

circular model must consider the resource requirements that relate to after-sales services that ensure customer satisfaction and the creation of long-term relationships that involve regular payments. For economic units, the need for investment and adjustment to achieve the closed material loop varies depending on the nature of their activity. Manufacturers may need to make substantial changes to products and manufacturing processes to meet the requirements of circular business models, while recycling firms already meet these requirements without the need for further changes. For large manufacturing units, the implementation of the circular business model requires significant changes and costs to redesign the product, increase its lifespan, and add recycling functionality, as measures to gain an improved reputation and increase revenue. These transformations are based on the whole system of innovations, so they can only be achieved in combination with other complementary innovations.

Networks can also block firms in unproductive relationships or hinder partnerships with other viable firms. Thus, it can be difficult for an economic unit to move from a linear business model to a circular business model if the employees in its value chain do not want to make the necessary investments and adjustments. Therefore, substantial costs could be involved in changing business models. The creation of a circular business model can lead to the rupture of previous relationships, by forcing businesses to improve their material selection and change their current supply of inputs to non-toxic, pure raw materials. Manufacturers' decisions on product design and material selection influence the choice of network partners, and biodegradable and recyclable materials that can be separated for reuse are prioritized to close the material loop.

## Conclusions

In conclusion, the way in which new types of investments in resources and capacities are developed can lead to sustainable competitive advantages, despite their rigidity and the uncertainty involved in the transition to the circular economy.

The producing economic units that implement the circular model must set up reverse logistics networks, which is to their advantage, as they outsource high-tech repair operations, warranty parts recovery, transportation services for the product recall program, etc. Such operations can lead to collaborations with economic units, complex networks, technologies and capabilities to operate efficiently in logistics systems. Therefore, producers do not have to develop expertise in these areas, instead, they can rely on experts who specialize in these activities and can enjoy the benefits of having contractual relationships with several producers. This outsourcing contributes to the development of the networks in which the dependencies are built between the economic units, the resources and the capacities that they have. Mutual dependence and investment specific to the relationships made by economic units within the network encourage trust, reciprocity and exchange of information within it, while knowledge development, trust and information sharing will reduce the costs associated with contracts within economic units.

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