

BUSINESSES AND THE CIRCULAR ECONOMY – QUO VADIS?

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ABSTRACT

In the contemporary business environment marked by uncertainty and rapid changes, it is imperative for firms to adapt to new challenges by identifying strategies that ensure sustainability and long-term success. One of the significant approaches that emerge in response to these challenges is the circular economy. This paper offers an analysis in compedium of this paradigm and how companies can adopt practices and strategies derived from the principles of the circular economy, to maximize their resilience and performance in the face of challenges. Additionally, trends that can influence the evolution of circularity are examined. This study draw attention to the fact that enterprises are the driving force of the economy, so engaging entrepreneurship is a sine qua non condition for the transition to a circular economy. The circular economy, in essence, can be viewed as a modus vivendi for business sustainability and the achievement of sustainable development goals.

KEYWORDS: *circular economy, strategic management, sustainable development, sustainable enterprise.*

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1. INTRODUCTION

In a business environment characterized by uncertainty and rapid changes, enterprises need to be prepared to face with a wide range of challenging situations, ranging from constraints on resources, natural disasters, conflicts, and pandemics.

The linear business model, relying on extraction, production, consumption, and disposal of resources, has become increasingly unsustainable amid the environmental crises faced by contemporary society. These threats, sometimes underestimated or ignored, pose a significant danger to the future viability of these businesses across all economic sectors. The risks associated with the linear model are complex and interconnected, having a profound impact on the environment, economy, and society.

First and foremost, resource constraints and deficits represent a fundamental issue. Natural resources are finite, with population growth and economic expansion leading to continuous pressure on these resources. For instance, essential raw materials such as rare metals necessary for modern technology could become increasingly scarce, and their growing demand may lead to significant price increases. As such, linear businesses, which greatly depend on resource and energy-intensive consumption, become vulnerable to global market fluctuations. Volatile energy and resource prices can significantly impact production costs and profitability for these businesses.

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At the same time, regulatory requirements and environmental standards are becoming increasingly stringent as governments worldwide escalate their efforts to combat climate change and protect the environment. Companies failing to comply with these regulations may face sanctions and additional costs, which can, to some extent, affect their profitability.

Moreover, markets are undergoing drastic changes, with a significant increase in demand for sustainable products and services. Growing awareness of environmental impacts may drive consumers to change their preferences over time. Consumer behavior will play an important if not the most important role in transitioning to a circular economy with sustainable consumption and production (Lakatos et al., 2018). This could pose a threat to linear businesses that do not adapt to this paradigm shift. Over time, these companies may lose market share and revenues, even risking obsolescence.

Finally, the consequences of environmental degradation can be devastating. Environmental degradation can cause disruptions in supply chains, affecting the stability of business operations. Furthermore, the impact on product and service quality can erode customer confidence and lead to significant costs to remediate these issues. Last but not least, reputational risks can negatively affect a business's image and credibility, resulting in loss of customers and business partners.

Thus, risks associated with the linear business model are significant, and there is currently an urgent need to address these issues more sustainably. Companies that do not adapt to these realities face the threat of falling behind and suffering severe economic, social, and ecological consequences (World Economic Forum, 2022).

One of the significant approaches emerging in response to these challenges is the circular economy. The circular economy is an increasingly popular, transitioning sustainable economic and development concept, focusing on reducing consumed resources and waste generated in production and consumption processes. The circular economy, sustainability, and sustainable development are interconnected concepts, but they have specific definitions and goals, hence a delineation of each one and their role in business sustainability is needed.

This theoretical research explores the role of entrepreneurship in the circular economy, highlighting the importance of innovation, sustainability, and business opportunities. The circular approach to resource and waste management is becoming increasingly relevant in the context of environmental problems and limited resources. Moreover, the key concepts of the circular economy, its impact on the environment, and ways in which entrepreneurs can contribute to the development of this field are examined. The paper aims to analyze *in compendium* how adopting this type of circular economy could ensure business resilience and performance in these critical times, identifying practices and strategies through the lens of circular economy paradigm. Lastly, the paper also analyzes the evolution trends of the circular economy and future research directions derived from them.

2. SUSTAINABLE DEVELOPMENT, ENTERPRISE SUSTAINABILITY AND THE CIRCULAR ECONOMY

2.1 Sustainable development

In the report of World Commission on Environment and Development (1987), entitled "Our Common Future", sustainable development was defined as *development that meets the needs of the present without compromising the ability of future generations to meet their own needs* (p.300).

The purpose of the report was to ensure development on three levels: economic, environmental, and social.

Sustainable development is a global aspiration, and the United Nations (UN) Agenda 2030, adopted by world leaders in 2015, represents the new global framework for sustainable development and sets 17 Sustainable Development Goals. It constitutes an ambitious commitment to eradicate poverty and ensure sustainable development worldwide by 2030.

It proposed balancing the three dimensions of sustainable development – the economic, the social, and the environmental dimension – through specific actions planned for the next 15 years, focusing, among others, on: human dignity, regional and global stability, a healthy planet, resilient and equitable societies, and prosperous economies. The goals contribute to increased convergence among EU countries within societies and the rest of the world.

The European Union has built a sustainable development policy to provide "a long-term vision of sustainability in which economic growth, social cohesion, and environmental protection go hand in hand and are mutually supportive". According to Article 3(3) of the Treaty on European Union, sustainable development has officially become one of the European Union's long-term objectives. Additionally, the European Commission has presented its strategic approach to implementing the United Nations' (UN) Agenda 2030 and achieving the Sustainable Development Goals (European Union, 2017).

Therefore, sustainable development is a global aspiration, focusing on multi-dimensional development, including the economic aspect, and the Agenda 2030 contains ambitious goals, among them that of a prosperous economy.

2.2 Enterprise sustainability

The term sustainability is encountered both as a term similar to sustainable development, and when referring to enterprises and organizations. Enterprise sustainability is a concept that has two meanings. In the first sense, the enterprise conducts its activities in such a way as to protect the environment, being called a green enterprise. In the second sense, this concept is more comprehensive, where the company must demonstrate social responsibility.

Thus, sustainability is that strategy of an organization to target profit while simultaneously considering social and environmental protection (Firescu et al., 2010). A sustainable organization has management that tackles economic, environmental, and social risks using sustainable practices, in a collaborative manner with stakeholders, thus obtaining a long-term competitive advantage (Amui et al., 2017; Firescu et al., 2010).

British economist Elkington (1997) sought to find a way for businesses to develop sustainably, and for corporations to be more responsible to people and the environment overall. He proposed a concept called the "triple bottom line," where businesspeople had to view their activity from three perspectives: risks regarding profit, social risks regarding people, and environmental risks regarding the impact on the planet.

As we can note, business sustainability does not have a precise definition; instead, it is composed of a series of recommendations and actions aimed at more than just immediate profit, leaving to future generations a sustainable economic environment and a cleaner planet.

Sustainable development and corporate social responsibility are analyzed together in the specialty literature, because sustainable development "embraces the three pawns of environmental protection, social responsibility, and economic development" (White, 2009, p.387). A firm's social responsibility consists in its contribution to efforts towards sustainable development.

Therefore, enterprise sustainability focuses on how a company manages and optimizes its impact on the environment, society, and the economy in conducting its business. This concept involves reducing carbon emissions, efficient resource management, respecting human rights in the supply chain, and corporate social responsibility. Enterprise sustainability can be seen as a component of sustainable development, but it is more specific to the business sector.

The enterprise is the basic cell of the economy. This statement represents a synthesis of economic and managerial concepts underlining the central role of enterprises in the economy since they essentially provide goods and services, create jobs, and contribute to economic growth. Therefore, the enterprise is a significant player, through its contribution to the efforts made by European and international bodies for sustainable development and the transition to a circular economy, through

measures of corporate social responsibility, the design of environmentally friendly, durable products susceptible to recycling, and reuse, within the limits of its field of activity. The enterprise is not just about profit but also the behavior adopted towards employees, consumers, other economic operators, and other stakeholders, in short, towards society.

2.3 The circular economy

According to forecasts from the World Economic Forum, the global population will be close to 9 billion by 2030, including 3 billion more middle-class consumers. This puts enormous pressure on natural resources to meet the future demand of consumers. The circular economy, in this forum's vision, is a redesign of this future, in which industrial systems are restorative and regenerative by intention. Nothing that is achieved in a circular economy becomes waste, moving away from our current linear economy of type *take, make, and discard*. The potential of the circular economy for innovation, job creation, and economic development is huge: estimates indicate a one trillion-dollar opportunity (World Economic Forum, n.d.).

The first vision of a closed-loop economy was mentioned in 1976 in the report for the European Commission "The Potential to Replace Human Labour with Energy" co-authored by Walter Stahel and Genevieve Reday. The report presented the vision of an economic loop in relation to the creation of new jobs, increasing economic competitiveness, resource saving, and waste prevention (Târțiu et al., 2018, p.26).

The Ellen MacArthur Foundation was one of the pioneers in promoting the circular economy and defines this concept as a rethinking and regenerating technique by design and aims to keep products, components, and material at their highest utility and value at all times (Ellen MacArthur Foundation, 2013).

The principles of the circular economy, in the vision of the aforementioned inspirational foundation are threefold and consist of *circular design*, *avoiding negative externalities*, the second principle consists in *maintaining products and materials in use as long as possible, at the highest utility*, and the third principle refers to *the regeneration of natural systems*.

The European Commission adopted in 2015 an ambitious plan regarding the transition to a circular economy, where the value of products, materials, and resources is maintained as long as possible, and the generation of waste is minimized, and when a product reaches the end of its lifetime, it is again used to close the circle, which creates additional value. The circular economy is an opportunity to transform the economy and generate innovative and sustainable competitive advantages in Europe. The circular economy will boost the competitiveness of the European Union by protecting businesses against resource scarcity and price fluctuations, contributing to the emergence of new business perspectives and the development of more innovative and efficient ways of production and consumption (European Commission, 2015).

Kirchherr et al (2017) examined and analyzed 114 different definitions of the circular economy, with the aim to identify common elements and to provide a clearer understanding of this complex concept. In their view, the circular economy is an economic system that replaces the end-of-life concept with reduction, reuse, recycling, and recovery of materials in production and consumption processes.

The circular economy operates at three different levels: *micro* (influencing consumption and production), *meso* (interacting with industrial networks), and *macro* (society). The positive benefits of circular economy initiatives in the context of sustainable development at these three levels underline the fact that the circular economy can be considered a tool of sustainable development (Sauve et al, 2016; Santeramo, 2022). From the two definitions, it can be observed that the circular economy and sustainability act simultaneously on three essential dimensions: the environment, the economy, and society. These three dimensions are often referred to in the specialty literature as the "*triple bottom line*" or "*3P: People, Planet, and Profit*" (Ibrahim, 2023; Parida, 2019). Sustainable development is a broad concept that encompasses all these dimensions, while the circular economy

is an umbrella concept, a tool used to achieve sustainable development and, at the same time, an essential condition (Geissdoerfer et al., 2017; Velenturf & Purnell, 2021). However, it is important to mention that these two concepts are often used interchangeably, with the circular economy seen in Walker's (2021) vision as an evolution of the concept of sustainability (Potra, 2022).

3. PRACTICES AND STRATEGIES FOR CIRCULAR BUSINESSES

The connection between entrepreneurship and sustainability objectives has been explored in numerous specialized studies (Munoz & Dimov, 2015; Neumeyer & Santos, 2018), demonstrating that entrepreneurship can be a central force in pursuing sustainability objectives (Terán-Yépez et al., 2020; Youssef et al., 2018). Furthermore, it has been considered that entrepreneurship should be viewed as a solution to environmental degradation and that there must be new business models combining environmental concerns with financial and social objectives (Ferreira et al., 2022; Raposo et al., 2020). Empirical evidence has shown that entrepreneurship plays a significant role in transitioning from the traditional economy to the circular economy. Additionally, it is suggested that when viewing entrepreneurship as a national phenomenon, we can identify beneficial effects on the sustainability of countries (Fernandes et al., 2023). The paper aligns with these perspectives and hold the belief that *businesses are the engine of the economy*; therefore, entrepreneurial involvement is a *sine qua non* condition for transitioning to a circular economy.

On the other hand, in light of the complexity of global resource and environmental challenges, as illustrated at the *incipit* of the study, it became evident that the risks associated with linear business models are substantial. Consequently, we may assert that the circular economy model can be regarded as a *modus vivendi* for business sustainability and achieving sustainable development goals.

Taking these considerations into account, several practices and strategies viewed through the lens of the circular economy, can be distinguished. It is worth emphasizing that this compilation is not exhaustive and provides potential avenues for future research. Among these circular practices and strategies inspired from circular principles are:

(a) Life Cycle Assessment

The transition towards a circular economy is a multifaceted process that hinges on a robust interdisciplinary framework, harmonizing the domains of economics, environmental sciences, and engineering. At its inception, a critical aspect involves the thorough assessment of the ecological footprint. The implementation of advanced techniques, particularly Life Cycle Assessment (LCA), permits a methodical and in-depth analysis of the environmental repercussions stemming from various products and processes. This approach yields essential data, pivotal for pinpointing specific areas where intervention and optimization are necessary.

(b) Circular Business Models, Product, and Service Design

Moreover, designing products and services in accordance with circular economy principles represents an essential component of this transition. This involves not only using renewable and recycled materials but also intelligent design that facilitates reuse, repair, and recycling. Addressing this aspect requires complex skills, with intersections between engineering, industrial design, and materials engineering, with innovative measures being of particular importance. In terms of design, conceiving business models that allow customers to share products or lease them, thereby reducing the need for individual ownership, is another aspect to consider.

(c) Resource Saving

Another strategy concerns resource saving through the implementation of efficient resource management practices, such as water, energy, and raw materials consumption monitoring and optimization, and investments in technologies that reduce waste and resource consumption during production.

Efficient resource management not only helps conserve valuable resources but also often leads to cost savings for businesses. By minimizing waste and optimizing resource use, organizations can reduce their environmental footprint and improve their overall sustainability.

This strategy is in line with the broader goals of achieving a circular economy, where resources are used more efficiently, waste is minimized, and products and materials are designed with reuse and recycling in mind. We can consider that it's an important step in the direction of sustainable and responsible business practices.

(d) Resource Reuse and Remanufacturing

Cost reduction through resource reuse and remanufacturing, and improved material efficiency is a crucial opportunity. This practice not only contributes to process efficiency but also reduces dependency on finite resources. Furthermore, the circular economy offers significant potential for CO₂ emission reduction throughout the value chain, thus aiding in the fight against climate change.

(e) Collaboration with Companies, Institutions, and Authorities

Collaboration and extended partnerships play a crucial role in the successful implementation of the circular economy in corporate practice. These not only contribute to the creation of a sustainable circular ecosystem but also promote innovation and knowledge exchange between different stakeholders. In addition, interdisciplinary partnerships between companies and academic institutions can bring substantial benefits, contributing to advanced research and the development of innovative technological solutions. Moreover, higher education institutions can influence the development of skills to discover and exploit economic opportunities related to sustainable development (Badulescu et al., 2015). Yet, another significant aspect is engaging in dialogue with authorities to promote environmentally favorable policies for the circular economy.

(f) Raw Material Source Diversification

The circular economy also provides solid protection against linear risks, such as raw material shortages and price volatility. By diversifying raw material sources and promoting reuse, companies become more resilient to market disruptions.

Moreover, the company's adoption and promotion of sustainable practices confer a substantial competitive advantage (World Economic Forum, 2022). Differentiation from competitors in terms of price, quality, and sustainability becomes a palpable reality. Also, educating employees, customers, and business partners about the principles of the circular economy, community engagement, and customer involvement in recycling and reuse initiatives not only attracts and retains environmentally conscious customers but also reinforces the company's sustainable reputation. Plus, the circular economy improves attractiveness to investors by enhancing ESG (Environmental, Social, Governance) performance. Companies become more attractive for investments, reflecting the increasing concerns of investors regarding sustainability and social responsibility.

Hence, this transition to the circular economy opens new economic horizons by opening new markets, exploiting previously unexploited revenue sources, and strengthening the presence in niche markets. Therefore, the circular economy is not just an ecological imperative but also an engine of innovation, competitiveness and sustainable prosperity for companies in a constantly evolving world.

4. PERSPECTIVES ON TRENDS THAT COULD INFLUENCE THE CIRCULAR ECONOMY IN THE FUTURE

The circular economy has emerged as a phenomenon of paramount importance in the contemporary landscape. Dedicated to minimizing waste and regenerating existing resources, this economic paradigm has become a priority for governments, companies, and organizations worldwide. As technologies evolve and the global context changes, several major trends are emerging that could influence the evolution of the circular economy and thus circular businesses. These major trends are detailed below:

4.1 Technology and innovation

One of the most significant trends that could influence the circular economy in the future is technological advancement. Emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), blockchain, and additive manufacturing have the potential to transform how we manage resources. For example, IoT can be used for real-time monitoring of resources and products, enabling more efficient management and optimization of their life cycle (Ingemarsdotter et al., 2020).

AI can contribute to the development of predictive systems for planning and optimizing circular processes. Artificial intelligence is one of the most dominant and potential tools to drive the transition from linear to circular. (Noman et al., 2022 p.33). Blockchain can ensure transparency and security in tracking resource flows, and additive manufacturing (3D printing) can reduce waste and facilitate personalized and local production, being an alternative, distributed, and cheap method of reusing waste (Rashid & Koç, 2023).

We can observe that the circular economy relies heavily on technology and innovation on several levels. The development of new recycling technologies and processes, IoT, Big Data, the digital economy, blockchain, green energy, and innovations in sustainable materials are crucial elements to ensure a complete and efficient transition of the global economy to a circular model. However, appropriate regulation and increased collaboration between governments, companies, and civil society are necessary to make the most of these opportunities and overcome existing challenges.

4.2 Collaborative Economy and Resource Sharing

A significant trend that is emerging in the contemporary era is the expansion of the collaborative economy and resource sharing. Botsman and Rogers (2010) emphasize the crucial role of the collaborative economy and resource sharing in reducing the consumption of new goods. In this context, sharing platforms such as Airbnb, Uber, Bolt, and BlaBlaCar demonstrate how consumers can share resources such as cars and homes, contributing to a decrease in demand for unexploited resources.

In a circular economy, resource efficiency emerges as a fundamental component. Thus, concepts such as car sharing, space sharing, equipment sharing, and sometimes product sharing follow an upward trajectory, determining increased relevance within the collaborative economy. This trend is facilitated and amplified by the consolidation and development of digital platforms, which allow individuals to share the resources they own. Consequently, the demand for the production of new goods decreases, resulting in a concomitant reduction in waste generation. Considering the importance of this phenomenon in ensuring long-term durability and sustainability, the collaborative economy and resource sharing deserve further study and promotion in the research domain and also in the implementation of public policies and regulations that stimulate the adoption of sustainable consumption and production models and circular businesses.

4.3 Climate Change and Regulations

The evident impact of climate change on the environment and the significant social pressures for its protection have generated an urgent need for implementing much more stringent regulations. Among the latest legislative measures at the European level is A New Circular Economy Action Plan. For a cleaner and more competitive Europe (European Commission, 2020). The new Circular Economy Action Plan is one of the main elements of the European Green Deal and provides measures throughout the entire life cycle of products — aiming to prepare our economy for a green future with increased competitiveness and new rights for consumers.

Also, the Commission (2023) through the "Revised Framework" monitors the fulfillment of the objectives in the transition to a circular economy in the European Union and considers how this economic system can contribute to climate neutrality, resilience, and overall sustainability.

Globally, we can exemplify countries that have adopted national strategies regarding the circular economy. Finland was the first country in the world to adopt a circular economy strategy in 2016 (Finnish Innovation Fund Sitra, n.d.). China has also adopted the circular economy at the legislative level (Bleischwitz et al., 2022; Ghisellini et al., 2016; Zhu et al., 2023). Other countries adopting circular economy strategies include Germany, the United States, France, Romania, etc.

Recycling, waste management, and carbon emission reduction regulations prove to be mobilizing factors in adopting circular approaches and environmentally friendly technologies. Such regulations also help in establishing favorable conditions for innovation in clean technologies and sustainable services. Within this legislative framework with circular measures, companies and organizations are urged to comply with higher efficiency standards, minimizing the negative environmental impact by conserving material and energy resources. Implementing appropriate environmental protection regulations can further stimulate the transition to renewable energy sources, the construction and operation of green buildings, and the development of sustainable consumption and production methods. These regulations often also contribute to raising public awareness and increasing the understanding of the need to adopt long-term sustainable behavior.

4.4 Changing Consumer Behavior

In the transition to a circular economy, consumers behavior plays a crucial role. Consumers driven strictly by economic reasons can be persuaded to purchase durable products, even if they are more expensive initially, to save money in the long run. They can also be encouraged to return used products in exchange for financial rewards. However, people are not always rational and focused strictly on cost and benefit calculations. Their decisions can be influenced by subjective beliefs and perceptions about products or services. In some cases, innovations with clear benefits may encounter resistance and take longer to be widely adopted than expected (Lakatos et al., 2018).

As the Commission (2020) stated and as specialized literature points out, the circular economy involves a significant change in consumer behavior, focusing on conscious purchasing, repairing, and recycling products to extend their lifespan and reduce the consumption of natural resources. Education and adequate information for consumers play a crucial role in this transition. By learning about the impact of their consumption choices, consumers are encouraged to choose durable products made from recycled materials and repair damaged items instead of replacing them.

These changes in consumers behavior can support the demand for circular products and services, thereby promoting sustainability globally and facilitating innovation in the development of eco-friendly products. Additionally, these changes can strengthen the relationships between consumers, producers, and legislators, facilitating the transition to a circular economy.

5 CONCLUSIONS

This paper has examined the direction of entrepreneurship in light of the complex global challenges related to resources and the environment, associated with linear business risks, analyzing the concepts of sustainable development, enterprise sustainability and the circular economy. The results of the work highlight the close connection between entrepreneurship and the circular economy and are of great importance.

First, regarding the circular economy, entrepreneurship should be seen as a solution to environmental degradation, and consequently, new business models should be developed that combine environmental concerns with financial and social objectives (Ferreira et al., 2022; Raposo et al., 2020). Empirical evidence has shown that entrepreneurship plays a significant role in the transition from traditional to circular economies (Fernandes et al., 2023). We align with these perspectives and believe that enterprises are the driving force of the economy, so entrepreneurship involvement is a *sine qua non* condition for transitioning to a circular economy.

On the other hand, given the complexity of global resource and environmental challenges, as outlined at the beginning of the paper, the risks associated with linear businesses are significant; therefore, the circular economy model can be regarded as a *modus vivendi* for business sustainability and achieving sustainable development goals.

Several practices and strategies for companies, viewed through the lens of the circularity principles, have been identified, such as: life cycle analysis usage, designing circular products and services, innovative measures, reusing and remanufacturing resources, diversifying sources of raw materials etc.

Emerging technologies, the sharing economy, stringent regulations, and changing consumer behavior are significant trends influencing the evolution of the circular economy, offering considerable opportunities for innovation, job creation, and sustainable economic development.

Future research directions should continue to explore strategies, practices, trends, develop ideas and practical solutions for their implementation in the transition to a circular economy. Implementing appropriate regulations and collaboration between governments, companies, and civil society is crucial for maximizing these opportunities and ensuring a smooth transition to a circular economic model.

The successful implementation of the circular economy represents not only an opportunity to contribute to environmental sustainability but also a fundamental pillar for companies' sustainable success in the coming years.

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