Managing Circular Economy with a Strategic-Risk Approach

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Abstract: The debate about the criticalities of the traditional linear economy-based business model is leading to a more sustainable way of production and consumption which is the circular economy (CE), defined as an economy capable of regenerating itself. However, there is an area of concern related to the risks arising from the changes that CE requires in processes, organization, governance, and relations within the supply chain and with stakeholders. This paper focuses on the main risk areas firms should manage for a successful strategic transition to CE, suggesting a conceptual framework for CE risk identification according to a strategic-based approach.

1. INTRODUCTION

The current scarcity of raw materials, the high volatility of their prices, the environmental problems and related social consequences (such as the extension of desertified areas with increased poverty and migratory flows) highlight the need to quickly change the traditional model of economic development which is unsustainable in the long future. The solution invoked by international organizations and associations (as United Nations, World Business Council for Sustainable Development, European Community, Ellen MacArthur Foundation) is the transition from the linear economy – based on the ‘take and discard’ paradigm – to the circular economy (CE) – based on the ability to close the loop considering waste as a resource.

This transition will lead to great benefits for both society and businesses, but it requires to be approached with an awareness of its risks. The circular approach cannot be realized with a linear-based mindset, needing changes in technology, production and consumption processes, business models, organization and governance, and relations within the supply chain and with stakeholders. The inadequate consideration of these changes, and the underestimation of the risks they entail, can lead to the failure of circular projects.

To our knowledge, the existing literature about CE lacks a strategic vision, focusing on the different issues about CE and overlooking the emphasis on the strategic relevance of circular thinking which affects all the firm’s decision-making processes and risks.

For this reason, the paper aims to answer the question about the main risk areas to monitor for a strategic transition to CE within firms. In particular, with this theoretical paper, we aim at stressing the need to consider the shift from the traditional linear business to the circular one.

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according to a holistic and strategic point of view. Circularity should be embraced as a new vision of the future, and it cannot be isolated within certain firms’ functions or projects. Without real conviction and strategic engagement by an entrepreneur, CE is likely to be a tool of marketing rather than a new way of doing business.

This research, despite its limitations, contributes to both filling an existing gap in the literature and suggesting practitioners approach CE with a strategic and risk-based approach.

2. LITERATURE REVIEW

The concept and definition of CE are still debating (Kirchherr et al., 2017), even if there is consensus on some basic principles attributable to the so-called “R strategies” (Morseletto, 2020) oriented to stress the useful application of materials, the extended lifespan of products and their parts, and the focus on smarter product manufacturing and use.

The first publication talking about an economy based on circular thinking is the article by Boulling (1966) who distinguished the “cowboy” economies characterized by reckless and exploitative behaviors and the “spaceship” economies characterized by finite and limited resources. The term CE in the economy is used for the first time by Pearce and Turner (1990) who criticized the linear economy in contrast with the circular natural system.

In 2010, Ellen MacArthur founded the Ellen MacArthur Foundation (EMF) which officially carried the circular economy concept to be known internationally. Since then, abundant literature on CE has grown, studying the different nuances of the concept: defining aspects (Kirchherr et al., 2017; Rizos et al., 2017); metrics and indicators (Moraga et al., 2019; Pauliuk, 2018); new business model’s conceptualization (Bressanelli et al., 2018; Gennari, 2022a; Mendoza et al., 2017; Pieroni et al., 2019); enablers or barriers (Scipioni et al., 2021; Tura et al., 2019); risks within the supply chain (Dulia et al., 2021; Ethirajan et al., 2021) or in special industries (Agyemang et al., 2019; Moktadir et al., 2018).

The literature on the theme appears to be still fragmented without a comprehensive point of view about the main factors, and related risks, to manage a successful transition from the linear to the circular business.

In this paper, we refer to the transition management theory (Jackson et al., 2014). It recognizes that transitions are complex phenomena, suggesting to catalyze the attention to some key factors able to influence the change towards the desired direction. For this reason, we aim at considering together these key factors and the related risks to design a conceptual framework able to give a holistic and strategic approach to circular businesses.

Researchers attempted to identify the key factors of the circular transition in the main drivers of the CE (Gennari, 2022b; Kirchherr et al., 2018): culture and governance; relations with stakeholders, and innovation.

The orientation of an organization towards sustainability and CE depends on the vision and the culture of its leaders (Gennari & Salvioni, 2019; Lahti et al., 2018; Rao & Tilt, 2016). According to several authors, (Eccles et al., 2011; Miller & Serafeim, 2014) the engagement of the entrepreneur and leaders for these issues goes through different and progressive steps: the first, the
focus is on compliance with regulations (in this case CE is not approached with a strategic attitude); in the second stage sustainability, and hence CE, are seen as tools to improve the organizational efficiency thanks to the engagement of the internal stakeholders; finally, when strategies are sustainability-driven, CE impacts on the organization, business model and relations with the other stakeholders.

The management of relations with stakeholders can be a source of competitive advantage in globalized and dynamic markets because the creation of sustainable value, in the interest of both company and society, increases stakeholders’ consensus and related attraction of resources (Salvioni & Gennari, 2017). In the CE, the importance of the network value emerges and drives the company’s attitude towards stakeholders, promoting the maximization of economic and socio-environmental performance in the long rather than the short term.

Finally, innovation, when it is managed by a value chain network, is a focal key driver for CE. Radical innovations in products and processes are necessary for achieving circularity because of the re-signification of waste within the value chain. This fact requires changes in the business model to guarantee the organization’s support, measure the sustainability performance, understand clients’ and consumers’ needs, and collaborate with the other interested parties.

3. CONCEPTUAL FRAMEWORK AND THEORETICAL BACKGROUND

The main drivers of CE find their validity in widely recognized theories.

Circular business, benefiting both organizations and society, represents the practical aspect of the shared-value theory (Porter & Kramer, 2011), which is based on the assumption that the integration of social and environmental issues within the core strategy of a company creates social value and competitive advantage. Shared value embeds a social purpose in the culture of the company which leaders have to be inspired by in their strategic choices. Hence, CE requires a shared value-oriented entrepreneurial vision, based on a shared agenda, strategic alignment, and network capabilities with the relevant stakeholders.

Value creation according to the sustainability principle is based on the ability to relate with different categories of stakeholders with a logic that values everyone’s contribution as stakeholder theory states (Freeman, 1984). In this way, all the actors within the value chain are an essential part of the success of the firm’s circular strategy (Salvioni & Almici, 2020). The mutual support of all stakeholders is needed to effectively implement the idea of the CE; hence, the company must be able to intercept stakeholders’ interests and perspectives.

Finally, CE is based on innovation both in the production/consumption processes and in the governance organization, being characterized by different design techniques, materials to be used, methods of disposal, and different work organizations. The innovation evolutionary theory (Nelson & Winter, 1982) states that organizations can change the economic system thanks to experimentation. The CE might also be viewed as a transitional evolutionary approach that involves techniques and organizations; in fact, it requires fundamental changes in the whole industrial structure encouraging different businesses to work together to close the loop.

In this paper, we aim at matching the key issues of CE with the main causes of strategic risk. Strategic risk can be defined as the risk affecting the ability to achieve the desired goals of the
business (COSO, 2017; Veleva & Bodkin, 2018; Brillinger et al., 2020). In particular, the most acknowledged risk management framework (COSO, 2017) emphasizes the importance to be aware of the risks which can affect the desired firm’s performance.

The first strategic risk is about the misalignment between strategy and mission, vision, and core value; the second strategic risk derives from the strategy’s risk assessment; the third one is the risk affecting the practical execution of the chosen strategy.

Conceptual framework crosses (Table 1):

− the key factors to strategically manage for a successful transition of the business towards the CE (culture and governance, relations with stakeholders, and innovation)
− the key strategic risks, that is the risks affecting the success of circular strategies (misalignment with corporate mission and vision, incorrect strategy evaluation, and failures in the strategy execution).

<table>
<thead>
<tr>
<th>Strategy misalignment with mission, vision and core values</th>
<th>Incorrect strategy evaluation</th>
<th>Failures in strategy execution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Culture and governance</strong></td>
<td>Risk related to corporate culture and leadership still rooted in the linear approach</td>
<td>Risk related to contradiction between circular strategy and external/internal context</td>
</tr>
<tr>
<td><strong>Relations with stakeholders</strong></td>
<td>Risk related to the inability to engage stakeholders in the circular strategy</td>
<td>Risk related to mistakes in the materiality (relevance) analysis and inability to create a network-based business model</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>Risk related to the low propensity for innovation</td>
<td>Risk related to the use of traditional evaluation criteria too focused on short-term and economic performance</td>
</tr>
</tbody>
</table>

**Table 1.** Conceptual framework for a strategic risk-based approach to the CE

As we can see in Table 1 the main risks affecting the CE transition can be placed in nine areas to be monitored. This framework encourages first critical analysis of the potential causes of failure of circular businesses.

When circular strategies are not aligned with the mission and vision they appear as something extraneous: circularity is declared but it is not understood and shared with stakeholders or it is deliberately used as a greenwashing tool, without a real will to move towards CE. Also, the assessment of CE strategies can be affected by the risks related to contradiction with the external or internal context (e.g. an organization unable to support the circular business) and with the traditional assessment tools that are not ready to catch the opportunities (not always directly measurable) rising in the long-term. A good materiality analysis aimed at giving relevance to a few important issues for the firm and its stakeholders can reduce the risk related to taking conflicting or unshared actions. Finally, even a well-designed strategy can fail in the concrete implementation phase because of the attempt to manage a circular business with a linear organization, the inability to communicate with the stakeholders engaged in the CE strategy, or the inability to govern radical innovations.
4. CONCLUSION

The CE will be the future model of production and consumption able to solve the problems related to the scarcity of raw materials and climate change. Nevertheless, the shift to CE by firms can be difficult because of the need to re-design processes, business models, tools and relations according to the circular approach. Currently, the financial sector considers circular projects characterized by a high-risk level because of the uncertainty of this transition (EC, 2020). Thus, CE strategies must be managed with a risk-based approach to minimize the chance of their failure. In this paper, we suggest overcoming a fragmented approach to CE considering both the main factors (culture and governance, relations, innovation) on which the success of circular strategies depends, and the main risks affecting these factors in the development of the strategic path (strategy definition, assessment, and execution).

The conceptual framework we propose wants to be a basis for thinking about the importance of a holistic risk-based approach to CE by firms.

The research, despite its limits (mainly attributable to the theoretical perspective), can contribute to the CE literature, which appears to be still fragmented and can be an easy-to-use tool for firms that aim at becoming aware of their attitude towards circularity. We suggest future research to test the conceptual framework within organizations.

References


