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Review Article

THE ROLE OF DIGITAL MARKETING IN PROMOTING THE CIRCULAR ECONOMY

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Abstract: The circular economy represents an innovative business model focused on sustainable resource use through extending product life cycles, reducing waste, and enhancing environmental sustainability. Digital marketing, as a key driver of digital transformation, plays a significant role in promoting the circular economy by applying advanced tools and strategies that foster consumer engagement, value creation, and awareness of sustainability. This paper explores the connection between digital marketing and the circular economy, emphasizing the challenges, opportunities, and strategies that enable the integration of sustainability principles into marketing activities. It also highlights the importance of artificial intelligence and digital platforms in shaping sustainable consumer behaviors and strengthening companies' competitive advantage. The conclusion underlines the need for further research to better understand the effectiveness of digital marketing tactics in promoting the circular economy and to contribute to global collaboration in this field.

Key words: *Circular Economy, Digital Marketing, Sustainability, Artificial Intelligence.*

INTRODUCTION

The concept of the circular economy (CE) has gained significant attention as a vital strategy for achieving sustainable development by promoting resource efficiency, waste reduction, and environmental protection. While there is no universally accepted definition of CE, it is generally understood as a systemic approach that rethinks product life cycles through practices such as reuse, repair, refurbishment, and

recycling. The circular economy represents a paradigm shift from the traditional linear model, emphasizing not only economic success but also social and environmental well-being for current and future generations.

Digital marketing, with its multidisciplinary nature and rapid technological advancements, plays an increasingly important role in supporting the transition toward a circular economy. Through innovative communication channels, data-driven strategies, and interactive platforms, digital marketing can influence consumer behavior, enhance transparency, and promote sustainable business practices. Despite the growing recognition of digital marketing as a driver of sustainable development, research exploring its specific contribution to advancing circular economy models remains limited.

This paper aims to bridge this gap by examining the tools, strategies, and challenges of digital marketing in promoting the circular economy. It investigates how digital marketing fosters consumer engagement, value co-creation, and sustainability communication while addressing organizational and market-related obstacles. Understanding these dynamics is essential for businesses seeking to integrate circular principles into their marketing strategies and for policymakers encouraging sustainable economic transformation.

1. The Circular Economy and Its Importance for Sustainable Development

Authors (Lieder & Rashid, 2016) note that “there are several ways to define [CE]”, whereas (Yuan et al., 2016) state that “there is no widely recognized definition of [CE]”. Nevertheless, to the best of our knowledge, no study has yet thoroughly and systematically explored definitions of CE (Kirchherr et al., 2017). Since the CE notion is seen as an operationalization enabling businesses to execute the much-discussed concept of sustainable development, it is of significant interest to both scholars and practitioners (Ghisellini et al., 2016); (Murray et al., 2017).

The circular paradigm has 5 pillars: (Sustainable resources, Product as a service, Sharing platforms, Extended service life, and New lifecycle). Reduced use of natural resources, increased waste prevention, and environmental optimization all contribute to better resource utilization in a circular economy. In a sustainable circular economy, the focus is on multifaceted progress – improving human well-being, environmental quality, and economic success for current and future generations – rather than boosting gross domestic product. When combined with innovation and sustainability, the circular economy is a business strategy that can increase a company’s competitiveness (Vićentijević, 2023).

A paradigm shift in modern practices, the circular economy is a new business model that takes a different approach to industrial operations and acknowledges the detrimental effects of industrial development. Three cycles of product management

are included in the circular economy: extended use with rigorous maintenance, repair at the end of its life, and reuse, which is followed by waste treatment (Vasiljević, 2020).

Authors (de Jesus & Medonca, 2018) synthesize earlier research on barriers to the circular economy (CE) to create a framework for these obstacles. The authors conclude their study by stating that their "CE [barriers] framework needs additional empirical evidence". The scientific research aspects of Circular Economy (CE) are still predominantly uncharted. Ecological economics could potentially provide the most valuable scientific and theoretical framework for the emerging practical, policy-driven, and business-focused concept of CE. Although not explicitly labeled as CE, ecological economics has a rich history in addressing recycling and similar concepts at the macroeconomic level (Korhonen et al., 2018). In contrast to conventional recycling, the circular economy (referred to as CE) approach focuses on the practical policies and business strategies that promote the reuse, remanufacturing, refurbishment, repair, cascading, and upgrading of products, components, and materials. It also emphasizes the use of energy derived from solar, wind, biomass, and waste throughout the entire product value chain and the cradle-to-cradle life cycle (Rashid et al., 2013); (Braungart et al., 2007).

2. Digital Marketing as a Driver of Change Towards the Circular Economy

The multidisciplinary character of marketing (Konyalioglu & Esen, 2025) has resulted in the creation of a marketing strategy that is solely focused on sustainable development: sustainable marketing (Gunduzyeli, 2024); (Martín-Cervantes, Valls Martínez, & Gigauri, 2022). A key component of this strategy is the digital transformation process (Gigauri et al., 2023), which firmly encourages creativity and innovation (Gigauri & Martín-Cervantes, 2023). As a result, modern digital marketing has adopted a number of trends (Bruce et al., 2023). To name just two, the rise of digital neuromarketing (Page, 2015) and its combined use with AI (Artificial Intelligence) are examples of recent developments. "The World-Wide Web (W3) initiative is a practical project designed to bring a global information universe into existence using available technology," according to (Berners-Lee et al., 1992) preliminary definition of the World Wide Web.

Even though research on digital marketing is expanding (Sousa et al., 2024) the academic community has paid relatively little attention to the precise function that digital marketing currently plays in bolstering and integrating the different circular economy models that have developed over time. Few studies have examined the primary roles of digital marketing in the framework of the circular economy, such as in terms of content generation, value co-creation, and consumer involvement, despite some focusing on digitalization as a major enabler of circular strategies (Ludeke-Freund et al., 2019); (Rosa et al., 2019); (Soriano-Pinar et al., 2023). Nonetheless, newer studies like (Nobre & Tavares, 2017), (Leal et al., 2025) emphasize the necessity of

coordinating marketing communication tactics with sustainability objectives. necessity of coordinating marketing communication tactics with sustainability objectives. In any event, there is yet to be a comprehensive study that looks at the relationships that now exist between digital marketing and the circular economy.

Author (Miller, 2012) offers a variety of B2B digital marketing types that have been studied: website marketing, search engine marketing, online advertising, email marketing, blog marketing, social media marketing, mobile marketing, online public relations as well as audio, video and interactive marketing. All apply at five stages of the B2B buying process – reach, acquisition, conversion, retention, and loyalty. Different tactics and one or more of the various forms of digital marketing are used in each of these phases (Ibid, 2012).

As marketing evolves, its function broadens to include tackling more significant sustainability issues in addition to managing client relationships (Hult, 2011). This suggests that marketing is now responsible for tackling more significant concerns like social and environmental sustainability in addition to managing customer connections. To achieve business sustainability, self-efficacy, product innovation, and digital marketing are crucial (Rahayu et al., 2021).

Utilizing social media's transparency and interaction, sustainable fashion firms have used it to inform their fans about environmental activities in recent years (de Lenne & Vandenbosch, 2017). This change isn't just happening with sustainable brands; fast-fashion retailers are also using social media sites like Facebook, Instagram, and Snapchat more frequently in an effort to highlight their environmental and social responsibility initiatives in addition to showcasing the newest trends (Henninger et al., 2017), (Joy et al., 2012). The shift in customer expectations towards sustainability is reflected in this evolution of digital marketing, which calls for a strategic adjustment from all brands.

The concept of sustainable marketing highlights the need for marketing to be economically feasible, socially just, and environmentally sustainable (Martin & Schouten, 2014). Businesses can strengthen their competitive edge and better align with broader sustainability objectives by incorporating sustainability into marketing strategies, which will benefit society and business alike (Crittenden et al., 2018).

Digital marketing focuses on two-way communication, targeted campaigns, and data analytics, promoting more sustainable practices by reducing waste and optimizing resource use (Gunduzelyi, 2024). Businesses may create more successful marketing strategies and gain a sustained competitive edge by using AI to turn massive volumes of big data into meaningful insights (Paschen et al., 2020). Due to a number of motivating factors, such as stakeholder expectations, legal obligations, supply chain demands, ethical considerations, and possible competitive advantages, many organizations actively pursue sustainable development and acknowledge its significance (Joyce Stuart, 2011). Businesses run the danger of harming their reputation as a brand if they don't embrace and share their commitment to environmental sustainability (LePla, 1999). According to (Obermiller et al., 2008), brands' competitive standing is

greatly impacted by sustainable practices. Three decades of development in the marketing industry's sustainability agenda have culminated in sustainability marketing (Kemper & Ballantine, 2019).

In addition to increasing public visibility, a dedication to sustainability is critical for cultivating a devoted clientele, which is necessary for a brand's expansion and prosperity (Kotler & Lee, 2005). Since consumers are the main forces behind sustainability marketing strategies, they have a significant influence on their development (Belz & Schmidt-Riediger, 2010). Customers now expect firms to use sustainable practices in addition to high-quality products, thanks to sustainability communication (Meise et al., 2014), (Grubor & Milovanov, 2017).

The advancement of sustainability in digital marketing is greatly aided by emerging technology, especially artificial intelligence. Every step of the sales process, including prospecting, preapproach, presentation, and follow-up, might be revolutionized by AI (Davenport et al., 2020). But even while automation, digitization, and artificial intelligence are rapidly reshaping important areas of sustainability, this development needs to be weighed against the possibility of systemic dangers (Galaz, i drugi, 2021). Integrating sustainability into digital marketing is extremely difficult, thus a targeted strategy is required to successfully address customer demands and habits. Authors (Diez-Martin et al., 2019) claimed in their study that by tackling important issues like customer orientation, digital consumer behavior, and the incorporation of green marketing methods, digital marketing significantly contributes to improving sustainability.

Through tailored consumer experiences and effective advertising tactics, artificial intelligence (AI) is not only transforming digital marketing but also supporting environmental initiatives. AI's influence on sustainability is growing in importance as it transforms digital marketing. This dynamic emphasizes the need to investigate the potential applications of AI to promote more sustainable marketing practices (Gunduzyeli, 2024). Speeding up digitization and the green agenda became the new highlights of international business (Vasileva, 2023).

Table 1. Digital marketing and sustainability challenges

Challenge	Description
1. Customer Orientation and Value Proposition	Understanding what customers value from sustainable products is very important, because it allows researchers to create metrics that assess sustainability perceptions and improve consumer experiences through targeted digital strategies, such as mobile augmented reality apps.
2. Digital Consumer Behavior	Sustainability significantly influences consumer commitment, prompting inquiries into which digital marketing actions can encourage green purchasing behaviors and how consumers' environmental values correlate with their online buying habits

3. Digital Green Marketing	Exploring how green marketing tools operate in digital environments is crucial, particularly in sectors with high pollution levels, as it can reveal the impact of eco-labels and social campaigns on consumers' purchase intentions and loyalty
4. Competitive Advantage	Sustainability has emerged as a competitive advantage, raising questions about how digital marketing strategies can leverage this aspect to build trust and foster strong stakeholder relationships while promoting sustainable business models.
5. Supply Chain	Digital marketing plays a vital role in supply chain management to achieve sustainability goals, and researchers can explore how it contributes to reducing consumption and enhancing the sustainability of industries and households.
6. Capabilities	Investigating how digital marketing capabilities foster sustainable attitudes within organizations is essential, as it can reveal which skills and innovations are most effective in driving environmental commitment.

Sources: (Diez-Martin et al., 2019) and (Gunduzeli, 2024)

CONCLUSION

The intersection of digital marketing and the circular economy presents a promising yet still emerging field of study. As businesses and societies increasingly prioritize sustainability, digital marketing emerges as a crucial driver for promoting circular economy principles by facilitating transparent communication, enhancing consumer engagement, and supporting sustainable consumption patterns. The integration of advanced technologies such as artificial intelligence and big data analytics empowers organizations to tailor their sustainable marketing strategies, thereby fostering competitive advantages while contributing to environmental and social goals.

Despite these promising developments, research remains limited on how digital marketing specifically shapes consumer perceptions and behaviors related to circular economy initiatives. Furthermore, challenges such as aligning marketing capabilities with sustainability objectives and managing the complexity of sustainable supply chains underscore the need for targeted strategies.

Future research should focus on identifying the most effective digital marketing platforms and tools for disseminating circular economy concepts and evaluate their impact on both consumer awareness and corporate sustainability practices. Collaborative international research efforts could further enrich the understanding and practical applications of digital marketing in advancing the circular economy. Ultimately, by leveraging digital marketing strategically, businesses can better engage sta-

keholders, communicate their sustainability progress, and contribute meaningfully to a more resource-efficient and regenerative economic model.

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