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DIGITAL TRANSFORMATION AND SUSTAINABLE MARKETING IN THE GREEN ECONOMY: ETHICAL IMPLICATIONS

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Abstract: This paper explores the synergy between digital transformation and the green economy, with a particular focus on ethical challenges and the role of sustainable marketing. Starting from global environmental and social challenges, the study analyzes the principles of the green economy and the potential of digital technologies to improve resource efficiency, transparency, and innovative business models. The methodological framework is based on a qualitative analysis of secondary sources, including academic literature, reports by international organizations, and examples of best practices from the business sector. The results indicate that digital tools can significantly contribute to sustainable development; however, their application also raises numerous ethical issues, ranging from privacy protection and data misuse to greenwashing and the manipulation of consumer values. The paper emphasizes the importance of transparency, accountability, and consistency in communicating sustainability values, highlighting sustainable marketing as a key instrument for connecting consumers and companies in the transition toward a green economy. Digital transformation can serve as a driver of sustainable change only if it is grounded in ethics, social responsibility, and a long-term strategic approach, thereby ensuring the preservation of competitiveness and trust in the contemporary business environment.

Keywords: *digital transformation, sustainable marketing, green economy, ethics, greenwashing.*

INTRODUCTION

In the contemporary business environment, demands for the integration of sustainability principles and digital transformation are becoming increasingly pronounced, significantly influencing the strategic orientation of organizations worldwide. Global challenges such as climate change, environmental pollution, and the unequal distribution of resources impose the need for a comprehensive development approach that aligns economic growth with environmental and social responsibility (UNEP, 2011). The concept of the green economy – defined as an economic system with low carbon emissions, efficient resource use, and an inclusive social approach – has become the dominant paradigm of sustainable development (OECD, 2020).

At the same time, the digital revolution is transforming traditional business models, enabling organizations to use innovative technologies such as artificial intelligence, the Internet of Things (IoT), blockchain, and big data analytics to optimize processes and improve business performance (Brynjolfsson & McAfee, 2014). However, this digital transition also entails numerous ethical dilemmas, including issues of transparency, user privacy protection, and the emergence of greenwashing – i.e., the practice of presenting products or companies as more environmentally responsible than they actually are (Delmas & Burbano, 2011).

In this context, sustainable marketing becomes an indispensable discipline that links environmental awareness with a market-oriented approach and enables effective communication of sustainability values to consumers. Its successful implementation requires not only a deep understanding of market conditions but also ethical standards and responsibility toward future generations (Kotler & Keller, 2016).

AIM AND METHODOLOGY

The aim of this paper is to examine how digital transformation can support the development of the green economy through sustainable marketing, with a focus on ethical dilemmas and challenges that arise in this process. The study seeks to identify key points of overlap between technological innovation, sustainability principles, and marketing practice, and to offer a critical perspective on responsibilities in the implementation of digital tools in accordance with environmental and social norms.

The research approach is based on a qualitative analysis of secondary sources. The paper relies on a review of relevant academic literature in the fields of marketing, sustainable development, and the digital economy, as well as examples of best practices from the business world. Reports from international organizations (UNEP, OECD, WEF) and recent academic studies addressing digital ethics and green innovations were analyzed. By synthesizing these sources, the study provides insight into the theoretical and practical framework for understanding the complex relationship

between digitalization, sustainability, and ethics in contemporary business. Examples of current campaigns and publicly available documents analyzing the relationship between digital tools and ethical standards were also used, in line with the principles of Corporate Digital Responsibility (CDR).

THEORETICAL FRAMEWORK

The green economy represents a concept of an economic system aimed at reducing negative environmental impacts through efficient resource use, lowering greenhouse gas emissions, and promoting social inclusion (OECD, 2020). According to the UN definition, a green economy is one that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities (UNEP, 2011). This paradigm responds to the needs of modern society to establish a balance between economic development and environmental preservation. The main principles of the green economy include low carbon emissions, increased energy and resource efficiency, and inclusive growth encompassing all segments of society (Geissdoerfer et al., 2017). In practice, this means that companies and institutions must adopt business models that consider long-term environmental and social impacts while achieving economic benefits.

Digital transformation refers to the integration of digital technologies into all areas of business, changing the way organizations operate and deliver value to customers (Ghobakhloo, 2018). In the context of sustainability, digital tools enable more precise monitoring and management of resources, supply chain optimization, and waste reduction (Ahmad et al., 2021). For example, IoT sensors can track energy consumption in real time, while blockchain can ensure transparency and verifiability of sustainable practices across the value chain (Kiron et al., 2013). However, the application of these technologies also introduces challenges related to data security, user privacy, and the need for ethical information governance (Floridi, 2016).

The digital era brings significant ethical challenges, particularly regarding privacy, transparency, and accountability (Nash & Wade, 2018). The collection and analysis of large amounts of data can compromise users' personal information, while the lack of clear standards can lead to data misuse and manipulation (Martin & Freeman, 2004). Transparency in communication with consumers is crucial to avoiding greenwashing practices, which undermine trust and harm both brands and society as a whole (Delmas & Burbano, 2011). Ethical dilemmas in this context can be seen as balancing profitability and social responsibility, where companies must align the pace of digital innovation with principles of sustainability and fairness (López-Morales & Tsiotras, 2021).

Sustainable marketing represents an approach that integrates environmental, social, and economic aspects into the development and promotion of products and services (Peattie & Crane, 2005). Unlike traditional green marketing, which is sometimes

used merely as a branding tool, sustainable marketing strives for genuine changes in behavior and values – both within companies and among consumers. A key component of sustainable marketing is transparent and authentic communication that avoids greenwashing and builds consumer trust (Kotler & Keller, 2016). In the digital context, social media and digital platforms enable direct interaction and feedback, further contributing to the development of sustainable practices and increased environmental awareness.

ANALYSIS AND DISCUSSION

The introduction of digital technologies into the green economy represents a complex task, as it requires synergy between technological innovation and sustainable business objectives (Bresciani et al., 2021). One of the key challenges is integrating sustainability into digital strategies, which entails aligning short-term business interests with long-term environmental and social goals (Kiron et al., 2017). Companies also face the need for changes in organizational culture, which must embrace sustainability principles and digital agility. This requires employee training, procedural adjustments, and the development of innovative business models that integrate environmental standards (Schwab, 2019). Moreover, change management often encounters resistance, which can slow down the implementation of sustainability-oriented digital solutions.

Another significant challenge is assessing the effectiveness of digital technologies in achieving sustainability goals. Measuring the impact of digitalization on carbon footprint reduction or improvements in resource efficiency requires reliable metrics and tools that many organizations have yet to develop (Elkington, 2018).

Ethical Challenges in Digital Sustainable Marketing

Ethics in digital marketing is becoming increasingly important due to the risks of data misuse and inadequate representation of sustainability (Nash & Wade, 2018). López-Morales and Tsiotras (2021) point out that transparency and accountability in the digital economy are imperative for preserving corporate reputation. Companies should implement data protection measures and ensure clear and truthful information in marketing messages (Martin & Freeman, 2004). Consumers increasingly demand transparency regarding how their data are used and expect corporate accountability in this regard (Nash & Wade, 2018). In addition, companies bear a moral responsibility to use digital technologies in ways that support social justice and inclusivity, avoiding the digital exploitation of vulnerable groups (López-Morales & Tsiotras, 2021). Regulations such as the Empowering Consumers Directive (EU 2024/825) and the proposed Green Claims Directive impose obligations that green claims be scientifically substantiated and verified by independent third parties, significantly reducing the scope for

consumer deception. However, political resistance and the withdrawal of support for these regulations indicate future regulatory uncertainties.

Maintaining ethical standards in digital marketing is becoming a prerequisite for long-term sustainability and trust. Despite the great potential of digital marketing to promote sustainability, its practical implementation often raises a range of ethical dilemmas that require careful management and clear guidelines. The following challenges are particularly prominent:

- 1. Greenwashing (false sustainability claims).** One of the most common ethical problems in the digital space is greenwashing – presenting products, services, or companies as environmentally responsible without substantive practices to support such claims (Delmas & Burbano, 2011). In digital campaigns, this manifests through the use of “green” slogans, symbols, and colors without concrete evidence or transparency regarding environmental impacts, including cases related to the so-called “dirty economy.”
- 2. Manipulation of consumer values.** Sustainable marketing often relies on emotional messages that appeal to responsibility, care for the planet, and ethical behavior. However, when such messages are used solely for commercial purposes without genuine corporate commitment to sustainability, ethics become instrumentalized, undermining consumer trust.
- 3. Data misuse under the guise of personalization.** Modern digital tools enable precise consumer targeting, often at the expense of privacy and control over personal data. Using algorithms to target consumers’ “environmental beliefs” without their consent raises the question of whether it is ethical to use sustainability values as psychological triggers without mutual awareness and consent.
- 4. Selective ethics.** Brands that highlight sustainable initiatives in certain campaigns while ignoring other aspects of unethical business practices (e.g., labor exploitation or non-transparent supply chains) risk being labeled insincere or cynical actors, which can have long-term reputational consequences.
- 5. Inadequate regulation and self-regulation.** Due to the rapid development of digital channels, regulatory frameworks often fail to keep pace with practice, leaving room for abuse related to the advertising of “sustainable products.” Strengthening ethical guidelines, advertising standards, and influencer accountability is essential to prevent misinformation.

Ethical responsibility in sustainable digital marketing is therefore multi-layered – it encompasses not only the content of the message but also how it is designed, to whom it is addressed, how its impact is measured, and whether it aligns with the company’s core values.

Digital marketing in the green economy is not used solely for promotion. Companies increasingly employ sophisticated digital tools – such as social media, influencers, interactive content, and data analytics – to communicate their environmental values in transparent and engaging ways (Kotler & Keller, 2016). Through targeted

campaigns and storytelling, sustainable marketing connects consumers with real environmental issues and encourages responsible behavior. For example, digital content that showcases entire supply chains or product life cycles enhances transparency and reduces perceptions of greenwashing (Delmas & Burbano, 2011).

Digital platforms also enable the collection of real-time feedback, helping companies better understand consumer attitudes and needs regarding sustainability and adapt their campaigns accordingly (Nash & Wade, 2018). This two-way communication is crucial for building long-term trust and loyalty.

Furthermore, digital tools allow for precise measurement of the effects of sustainable marketing campaigns, facilitating evaluation of success and optimization of communication strategies (Elkington, 2018). This is particularly important in the context of increasing demands from regulators and society for evidence of actual environmental impact. In short, digital sustainable marketing is no longer merely a trend – it is becoming a standard business practice for companies seeking competitiveness in the new green business environment.

At the same time, as digital sustainable marketing increasingly positions itself as a new standard, it is important to consider the broader picture – not only the benefits but also the potential ethical risks this process entails. While digital technologies enable the development of innovative and responsible business models, they simultaneously create space for unethical approaches such as greenwashing or consumer manipulation. Table 1 presents examples of positive and negative trends that highlight the dual nature of digitalization in the context of sustainable marketing.

Table 1. Positive and Negative Trends in the Green Economy

Positive Trends	Negative Trends
Digitalization	Data misuse
Change in organizational culture	Selective ethics
Sustainability principles	Greenwashing
Ethics and adaptation of procedures	Manipulation of consumer values
Innovative business models	“Dirty” economy
Sustainable marketing	Consumer manipulation

Source: Authors

The presented trends indicate the complexity of the ethical implications of digital transformation in the context of sustainable marketing. On the one hand, digital technologies enable transparency, resource optimization, and the development of sustainable business models. On the other hand, there are risks of data misuse, superficial use of the concept of “sustainability” for market profit, and manipulation of consumer values. Therefore, it is crucial for organizations to develop clear ethical guidelines and to critically approach the implementation of digital solutions in order to preserve trust and the authenticity of their sustainable practices.

Examples of Best Practice

Some companies have recognized the potential of digital transformation to enhance sustainability and have successfully implemented strategies that contribute to responsible business practices. For example, Patagonia uses digital platforms to transparently report on its environmental initiatives and to encourage responsible consumer behavior (Patagonia, 2023). Digital tools have enabled the company to monitor its supply chain and reduce negative environmental impacts.

Similarly, IKEA has integrated IoT technology to monitor energy consumption in its retail facilities and uses digital campaigns to promote sustainable products and lifestyles (IKEA, 2022). This company demonstrates how digitalization can act as a driver of sustainable change within large corporate systems.

Tesla is an example of a company that, through digital innovation, is transforming not only its products but also the entire concept of transportation, encouraging the transition to electric vehicles and thereby contributing to the reduction of greenhouse gas emissions (Tesla, 2023).

Unilever uses digital big data analytics to optimize its marketing campaigns and monitor sustainability impacts, while simultaneously promoting social campaigns aimed at raising awareness of environmental issues (Unilever, 2022).

Interface Inc., a global leader in modular carpet manufacturing, represents an example of a company that has significantly improved its sustainable business practices through digital transformation. Interface has set an ambitious goal of achieving a fully restorative environmental impact by 2040, under the initiative "Climate Take Back" (Interface, 2023). By applying digital technologies, Interface monitors every segment of the production process using IoT sensors and big data analytics to optimize energy consumption, reduce waste, and increase the use of recycled materials (Nidumolu, Prahalad & Rangaswami, 2009). These technologies provide insights into production performance and help identify critical areas for improvement. In addition to technological solutions, the company uses digital platforms for transparent reporting on progress toward sustainability goals and for educating clients about the importance of environmentally responsible choices (Interface, 2023). This integrated approach serves as an example of how digitalization and sustainable marketing can jointly contribute to creating long-term value for both the company and society.

Booking.com, one of the world's largest digital travel platforms, launched an initiative and campaign titled "Travel Sustainable," also known as "Travel Better," to encourage more sustainable behavior among travelers and to support environmentally responsible accommodation providers. Booking.com introduced a visual "Travel Sustainable" label for hotels and accommodations that meet specific sustainability criteria (e.g., energy efficiency, recycling, use of local products, waste management). This enables users to make informed and environmentally responsible booking decisions. Through blogs, newsletters, and social media, users are offered tips on sustainable travel, such as reducing CO₂ emissions, respecting local culture, and protecting natural resources. The content is often presented in the form of short videos and in-

fographics. Booking.com collaborated with environmentally conscious travelers and influencers who promoted “green” destinations and accommodations through digital channels, highlighting authentic experiences and positive examples of sustainable tourism. With messages such as “Travel responsibly. Choose sustainable,” the campaign combines an environmental message with an emotional tone, encouraging users to feel personal responsibility for their choices. As a result of the campaign, more than 500,000 accommodation units on the platform have been labeled as part of the “Travel Sustainable” program (Booking.com, 2023), and internal research has shown that 68% of users want to travel more sustainably but do not know how. The campaign addressed this need by providing options and education through digital channels.

These examples demonstrate that it is possible to align digital innovation with the principles of the green economy, provided that companies pay close attention to ethical aspects and long-term sustainability goals. Digital tools and platforms, when used with clearly defined sustainable and ethical values, can be powerful instruments for promoting the green economy and responsible marketing.

CONCLUSION

The analysis of the theoretical framework and practical examples shows that companies that integrate environmental, social, and digital components into their marketing activities achieve higher levels of consumer engagement, a more loyal customer base in the long term, and a reputation as socially responsible actors.

At the same time, the paper highlights numerous ethical challenges, including responsible data management, balancing profit with sustainability principles, and the need for continuous alignment between marketing messages and actual corporate practices. Without genuine commitment to these values, digital strategies can easily lose credibility or be perceived as manipulative.

Digital marketing has the potential to become a key bridge between business success and sustainable development, but only if it is grounded in an ethical approach, transparency, and accountability. In an era of environmental and social responsibility, marketing professionals are called upon to drive transformation not only through product promotion but also through shaping the values that will define the markets of the future. Digital marketing within the green economy is a powerful communication tool, but it is also vulnerable to ethical risks such as greenwashing, value manipulation, and unauthorized data use. Without ethical consistency in content, practice, and communication, there is a risk that digital marketing will lose credibility and lead to the erosion of consumer trust.

Digital transformation and the green economy are not mutually exclusive concepts; rather, they can be effectively integrated through ethically informed practices. Sustainable marketing in the digital age requires transparency, consistency, and genuine commitment to sustainability values, which are essential for building consumer

trust and ensuring long-term business sustainability. Companies have a responsibility not to use technology as a means of concealing unethical practices, but as a tool for genuine transformation toward sustainable development. This paper demonstrates that digital marketing, when properly directed, can serve as a strategic tool for promoting the principles of the green economy, especially when combined with ethical values and transparency toward consumers. Ultimately, successful synergy between digital transformation and the green economy requires the development of marketing strategies that not only inform but also empower, educate, and engage users, while respecting their privacy, intellectual integrity, and value orientations.

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