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A Drive for Sustainable Net-Zero Future by Leveraging Guerrilla Marketing in Circular Economy

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ABSTRACT

The Circular Economy (CE) presents a transformative alternative to the traditional linear economic model, emphasizing resource optimization and waste minimization through practices such as exchange, renting, reusing, repairing, reconditioning, and recycling. This paradigm shift is essential for achieving global net-zero emission targets by 2050 and addressing both energy- and non-energy-related greenhouse gas emissions. Although the CE concept is not novel, its adoption has accelerated in the 21st century across various sectors, including renewable energy and climate change mitigation. This review examines how CE principles such as resource efficiency, waste minimization, and product life extension contribute to net-zero objectives. It explores how CE strategies, including sustainable product design, manufacturing, and consumption patterns, along with material recycling and reuse, can mitigate greenhouse gas emissions while promoting economic growth. This study investigated the role of guerrilla marketing in driving the adoption of CE practices. Case studies demonstrate successful guerrilla marketing campaigns across diverse industries, showing their effectiveness in promoting CE principles. The economic implications of

adopting a circular model, including potential investments, job creation, and cost savings, were also evaluated. This study highlights how guerrilla marketing can overcome the barriers to CE adoption and foster stakeholder collaboration. The findings underscore the importance of integrating guerrilla marketing with CE strategies to achieve a sustainable future, emphasizing the need for businesses, policymakers, and society to embrace practices that reduce carbon footprint and enhance resilience for future generations. Guerilla marketing serves as a powerful tool to raise awareness and derive behavioral change, then accelerating the adoption of CE practice across industries and communities

1. INTRODUCTION

The primary aim of circular economy (CE) is to reduce resource use in production by minimizing byproducts, waste, emissions, and energy leakage. This distinguishes CE from the traditional linear "take-make-consume and dispose of" model [1, 2]. CE can be achieved by remanufacturing, refurbishing, reusing, recycling, and repairing goods and resources, ultimately protecting the environment. This concept is termed as a long-lasting closed-loop production and service system [3]. It balances economic development with environmental and resource protection, ensuring higher operational efficiencies through responsible production and consumption behaviors [4]. The product life cycle can be extended by reducing waste and creating further value, protecting the environment by limiting biodiversity loss, curbing greenhouse gas emissions, reducing raw material dependence, creating jobs, and saving consumers' money, deemed as prime benefits of switching to a circular economy [5]. Rethinking conventional business and production models towards net zero is the main goal of CE principles, which aim to cut waste, better use resources, and lower GHG emissions [6]. In contrast to the linear economy, CE encourages a closed-loop system in which resources are recycled, regenerated, and reused. In the context of reaching Net Zero emissions, CE has received increasing attention. This strategy can lower GHG emissions, prevent climate change, and reach Net Zero by minimizing waste and ensuring sustainable recycling with lower carbon emissions [7].

The Guerrilla Marketing Strategy (GMS) is an unconventional approach aiming to generate 'buzz' by creating a lasting impression on the audience. Derived from Guerrilla Warfare tactics,

where small groups of unconventional forces eliminate a larger enemy by creating 'surprise,' GMS relies on 'Hit & Run' tactics. Marketers have transformed this into unique marketing tactics to create 'surprise' or 'Buzz' for potential customers. While in GW, a small group outwits a larger enemy, a small company typically adopts this strategy to outmaneuver larger businesses. The GMS can effectively promote awareness campaigns using unorthodox tactics such as flash mob or street art, raising awareness about recycling and waste reduction aligning with CE principles. It can engage the community with CE principles to accomplish zero goals [8-12]. Adopting CE can help promote net zero emissions, with the GMS as a key component. Businesses can encourage sustainable practices and increase awareness of waste and emission reduction through innovative marketing strategies. For example, a guerilla marketing campaign might involve flashmobs or street performances to encourage recycling or placing stickers highlighting the environmental effects of single-use plastics. Through non-traditional avenues, such as community events or social media influencers, businesses can expand reach and create urgency regarding the shift to a Circular Economy. These campaigns can increase the demand for sustainable goods, leading to decreased greenhouse gas emissions and the achievement of net zero targets. Notably, the European Union creates over 2.1 billion tonnes of waste annually. By modernizing waste management legislation, the EU aims to stimulate a shift to a more sustainable circular economic model [5].

Figure 1 shows a vibrant cityscape depicting circular economic practices through guerrilla

marketing. Solar panels cover rooftops alongside wind turbines and green spaces, highlighting the importance of renewable energy systems. Advertisements promote recycling, reuse, and sustainable living, whereas people engage in zero-waste initiatives. This scene emphasizes net zero emissions through eco-friendly behaviors and clean energy solutions.



Figure 1: Illustration of a cityscape showcasing circular economy practices through guerrilla marketing and confirming the use of renewable energy systems in the lifestyle for achieving net zero emissions. This image has been created by using AI (ChatGPT 4.0), with the authors' ideas.

2. Circular Economy: Principles and Integration

2.1 Data Key Concepts of Circular Economy

The primary objective of CE is to conserve the environment through product reuse and recycling, thereby reducing natural resource consumption, environmental disturbance, habitat disruption, and contributing to biodiversity preservation. The circular economy (CE) concept aims to alter current consumption and production patterns that strain Earth's capacity to address environmental challenges [13]. A secondary benefit of CE is the reduction in annual GHG emissions. Figure 2 illustrates the concept of CE.



Figure 2: Illustration of circular economy concept [14].

According to the European Environment Agency, industrial processes and products contribute to 9.10% of greenhouse gas emissions, while waste management accounts for 3.32%. Developing more efficient and sustainable products at the inception of production can reduce energy and resource consumption because over 80% of a product's environmental impact is determined during the design phase. Waste volume can be mitigated through the transition to durable products that can be reused, upgraded, and repaired. Packaging waste presents an additional challenge, with an average annual European generation of 180 kg. The objective is to address excessive packaging and enhance its design to promote reuse and recycling [15].

The second benefit of implementing a circular economy is reducing the dependence on raw materials. The demand for raw materials is increasing with global population growth, but the supply remains finite. Limited resources have resulted in certain EU nations relying on other countries as raw materials. The EU imports approximately half of its raw materials. The total value of the raw material trade between the EU and the rest of the world has nearly tripled since 2002, with exports growing at a faster rate than imports. However, the EU still imports more than exports, resulting in a trade deficit exceeding €35.5 billion. Recycling raw materials mitigates supply related risks such as price volatility, availability, and import dependency. This is particularly relevant for raw materials essential

for producing technologies crucial for achieving climate goals, such as batteries and electric engines [15].

The generation of employment opportunities and reduction in consumer expenditure represent the third significant challenge. The adoption of Circular Economy (CE) principles can address this objective by enhancing competitiveness, fostering innovation, stimulating economic growth, and creating employment opportunities (estimated 700,000 jobs in the EU alone by 2030) [15]. Environmentally sustainable innovations across various sectors, including product design and development for energy consumption and generation, can be promoted by restructuring materials and products for circular utilization [16, 17]. For instance, the New Plastics Economy initiative (Ellen MacArthur Foundation) aims to establish a CE for plastics by 2025. This foundation collaborates with businesses, authorities, and individuals to reduce plastic waste and pollution, promote recycling and reuse, and develop new business models that prioritize the utilization of recycled materials [18]. To facilitate CE adoption, stakeholders collaborate through the African Circular Economy Network (ACEN) [19]. ACEN provides training and capacity-building programs to support the development of circular economic strategies and practices. The fashion industry, a significant contributor to pollution, waste, and climate change, is particularly affected by fast fashion. Companies such as Patagonia, H&M, and Reformation are implementing CE strategies by producing recyclable products, utilizing recycled materials, and establishing clothing return programs [20, 21]. The Bio-based Industries Consortium (BIC) in Europe has worked to advance biotechnology-based products and processes. This consortium promotes the utilization of renewable biomass, waste reduction, and recycling of biomass-derived materials [22, 23]. These examples illustrate the significance of global, regional, and sectoral approaches in achieving a circular economy and net-zero emissions. CE adoption can provide consumers with durable and innovative products, enhancing their quality of life and generating

long-term cost savings [2]. The estimated investments in CE initiatives vary significantly across countries, reflecting diverse approaches to sustainability (Figure 3). While many countries are making progress, challenges persist in aligning policies and practices, particularly in the USA, where the transition remains in its early stages [24].

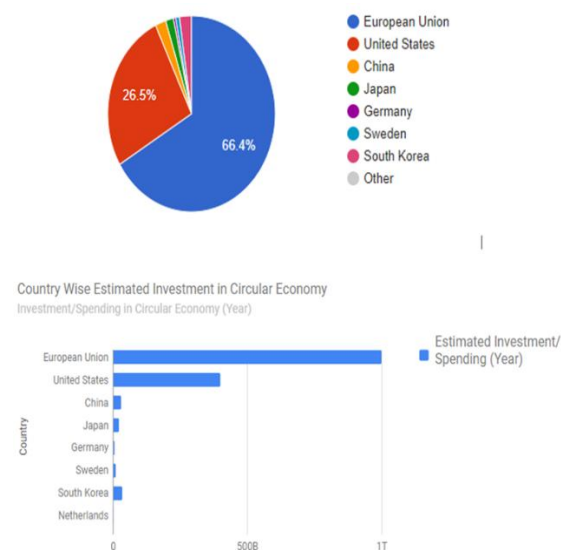


Figure 3: Estimated investments/spending in the circular economy (CE) across different countries.

2.2. Case Studies of CE Adoption in Various Sectors

2.2.1 Case Study1: The EU CE Action Plan (EU Monitor)

According to the "Circular Economy Action Plan," which was unveiled in March 2022, the European Commission proposed an initial set of measures to accelerate the transition to a CE by the EU's 2050 climate neutrality goal under the Green Deal [25]. The recommendations include increasing the utilization of sustainable products, educating consumers about the green transition, reviewing construction product regulations, and developing a strategy for sustainable textiles. In November 2022, the European Commission proposed new packaging regulations for the EU. These regulations include proposals for enhancing packaging design to promote recycling and reuse, including clear labeling. Additionally, they mandate the transition to compostable,

biodegradable, and bio-based plastics. In a resolution passed on February 9, 2021, the Parliament called for more stringent recycling regulations and binding 2030 targets for material use and consumption. A revision to the rules on persistent organic pollutants (POPs) was approved by the Parliament in October 2022 with the objective of reducing the quantity of hazardous chemicals found in waste and production processes. The new regulations include stricter limitations, prohibition on specific chemicals, and ban on recycling pollutants.

To achieve a comprehensive CE, circularity and sustainability must be incorporated into all stages of the value chain, from design to production, and ultimately to the consumer. The Commission action plan delineates seven key areas essential to achieving a CE: plastics, textiles, e-waste, food, water and nutrients, packaging, batteries and vehicles, buildings, and construction. While the strategy for textiles aims to ensure that products are durable, recyclable, and made of recycled fibers by 2030, the strategy for plastics aims to phase out microplastics. Given that only 40% of e-waste is recycled, electronics and ICT prioritize reparability and reusability, respectively. The Farm-to-Fork Strategy aims to reduce food waste by 50% by 2030 [26]. Despite efforts to amend regulations to mitigate this trend, packaging waste continues to increase in Europe. Novel legislation pertaining to batteries and automobiles ensures that production processes comply with environmental and human rights standards, while minimizing carbon emissions. Finally, the construction industry, which generates more than 35% of waste in the EU, focuses on extending the lifespan of buildings and improving energy and resource efficiency to achieve sustainability objectives [27, 28].

The European Union generates an excess of 2.5 billion tonnes of waste annually. In 2020, 32.7 million tonnes of TEU was exported as waste to non-EU countries. The majority of exported waste comprises glass, paper, plastic, textiles, and ferrous and nonferrous metal scrap. The primary destinations of this waste are Egypt, Turkey, and India. Members of the European Parliament (MEPs) urge EU member states to reduce

hazardous chemical waste, minimize incineration, transition away from landfilling, and enhance high-quality recycling practices. In January 2023, the European Parliament voted on its position regarding waste shipment regulations that aimed to reduce pollution and promote recycling and reuse. These regulations stipulate that waste exported from the EU must be managed sustainably in recipient countries, and that enforcement measures to prevent illegal shipments must be strengthened. MEPs advocate for improved information-sharing and shipment transparency within the EU. A comprehensive ban on hazardous waste exports from the EU to non-OECD countries has been proposed. Similarly, plastic waste exports to non-OECD countries should be prohibited, while exports to OECD countries should be phased out over a four-year period [28, 29].

2.2.2 Case Study 2: Examples of Companies Regenerating Nature (Ellen MacArthur Foundation) [18]

Natura is the largest cosmetics company in South America and the fifth largest beauty company in the world. The corporation produces a diverse range of products, including soaps, creams, and shampoos, all of which rely on the extensive biodiversity of the Amazon for raw materials and ingredients as well as the traditional knowledge of indigenous tribes. Approximately 7,000 families are involved in the company's supply chain, which encompasses nearly 40 different types of "biodiversity assets" (ingredients derived from plants). The concept of the "standing forest" economy is fundamental to Natura's business strategy, suggesting that a tree left standing has a significantly greater economic value than one that is felled. This philosophy has contributed to the preservation of over two million hectares of the Amazon rainforest, with the objective of expanding this area to three million hectares. The principle of ecological restoration is not limited to terrestrial environments, but can also be applied to marine ecosystems. GreenWave employs a 3D ocean-farming technique to sustainably cultivate various seaweeds and shellfish. The system consisted of a simple lattice structure composed of ropes and baskets suspended slightly below the water surface, with different species growing at various depths. This method facilitates the

restoration of marine ecosystems while simultaneously producing commercial crops for food, fertilizers, animal feed, and bioplastics. Regenerative ocean farms have the potential to enhance the marine biodiversity. The structural components of these farms provide layers of distinct habitats for a wide range of marine species, mimicking the vertical structure of ocean reefs. The three-dimensional approach to regenerative ocean farming generates abundance in a limited space by layering multiple enterprises, making it highly efficient. The system has relatively low start-up costs, owing to its simplicity. From USD 20,000 to USD 50,000, individuals with access to 20 acres and a boat can establish a farm capable of yielding approximately 60,000 kg of kelp and 250,000 shellfish annually [18, 30].

Seaweeds, which constitute a significant source of protein and other nutrients and possess the capacity to remediate polluted marine ecosystems through bioremediation, are an integral component of marine ecosystems. An Integrated Multi-Tropic Agriculture (IMTA) system, referred to as "3D Ocean farming," aims to cultivate seaweed, shellfish, mussels, clams, oysters, sea vegetables, and other marine products (Figure 4). This approach offers optimal yields with minimal investment and has the potential to transform the livelihoods of fishermen and marine farmers by enhancing their means of subsistence into a more economically viable and sustainable future. Through the absorption of heavy metals, carbon, and nitrogen, regenerative farming can produce substantial quantities of food with minimal financial expenditures while maintaining a healthy marine ecosystem, thereby establishing a foundation for sustainable agricultural methodologies [31].

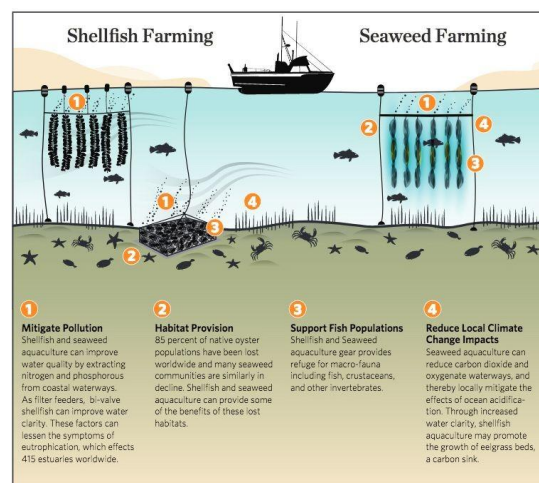


Figure 4: Restorative 3D Ocean Farms [31]

2.3. Challenges and Opportunities in CE Adoption

Qatar and Kuwait, despite being among the world's largest oil-producing states with the highest per capita income and the two most rapidly developing countries globally, exhibit a limited Circular Economy (CE), and its implementation is not adequately considered [32]. A recent study revealed that challenges such as economic barriers, regulatory inadequacies, and lack of awareness and education hinder the adoption of CE practices [33]. Policy interventions are necessary to transition from a linear economic model to a CE. Governments are implementing policies to promote resource efficiency, reduce waste, and improve sustainability. This involves enacting legislation mandating recycling rates and waste reduction targets, providing financial support to businesses for implementing circular technologies and practices, and funding research projects focused on innovation in the circular economy and sustainable product design.

CE advancement requires cross-sector collaboration, which brings together stakeholders from industry, government, academia, and civil society to exchange ideas, strategies, and information. This collaborative approach fosters innovative thinking that promotes sustainable practices across sectors. Intersectoral cooperation facilitates the exchange of concepts and best practices, thus enhancing the efficacy of circular initiatives. However, several challenges may

impede cross-sector collaborations. Divergent objectives of different sectors can complicate the alignment of interests and hinder commitment. A lack of funds and resources, particularly for smaller enterprises or start-ups, can impede collaborative efforts [34-37]. Cooperation can be hindered by linguistic, terminological, and conceptual differences in a circular economy. Diverse industry-specific regulatory frameworks can complicate the execution of cooperative circular projects. By addressing these obstacles and promoting collaborative approaches, stakeholders can construct a more sustainable future and accelerate the transition to a circular economy that benefits the economy, society, and the environment [38].

3. Role of Guerrilla Marketing in Promoting Circular Economy Practices

3.1. Theoretical Frameworks

Incorporation of well-established business and marketing theories provides strong evidence to examine how guerrilla marketing tactics under circular economies can overcome competitive advantages. The most prominent theoretical perspectives regarding competitive advantage, customer behavior, and strategic marketing have been elaborated under this section.

3.1.1 Competitive Advantage Theories

Competitive advantage enables companies to outperform rivals by offering unique value propositions. Two prominent theories explain the foundations of competitive advantage such as Resource-Based View (RBV), and Market-Based Perspective (MBP). RBV contends that the internal ability and resources of a company or industry are crucial to gaining and sustaining competitive advantage. Value, rarity, inimitability, and non-substitutability (VRIN) resources enable the companies to pursue unique strategies that are challenging for rivals to replicate [39]. In the context of guerrilla marketing in a circular economy, embracing unique sustainable methods and innovative marketing skills can be the strategic assets that can make a company/ firm

differentiate itself in the marketplace. On the other hand, the MBP emphasizes positioning outside the market. According to this approach, the success of a company relies primarily on industry structure and firm positioning in the industry. Companies can achieve competitive advantage through finding and positioning in good market niches. Guerrilla marketing strategies can be employed to position a company's sustainable products and gain more green customers and market share.

3.1.2. Theories of Consumer Behavior

Understanding consumer behavior is essential in developing successful marketing strategies. There are several theories that explain the determinants of consumer decisions commonly known as Theory of Planned Behavior (TPB), and the Maslow's Hierarchy of Needs. The TPB theory states that an individual's intention to perform a behavior depends upon his attitude towards the behavior, subjective norms, and perceived behavioral control. On the marketing front, this translates into consumers likely utilizing products or services if they positively approach them, feel that their significant others would approve of the behavior, and feel capable of performing it [40]. While the Maslow's theory suggests that human needs are hierarchically organized, from physiological needs to self-actualization. Consumers are motivated to fulfill these needs sequentially [41]. Guerrilla marketing strategies can tap into higher-order needs, such as esteem and self-actualization, by associating sustainable products with personal growth and social responsibility, thereby enhancing brand appeal. Additionally, Guerrilla marketing campaigns highlighting social approval and ease of taking on sustainable behavior have the potential to positively influence consumer intentions and behavior.

3.1.3. Strategic Marketing Theories

Strategic marketing entails the development and execution of marketing strategies to attain organizational goals. Porter's Generic Strategies, and Core Competencies are well-known out of the main theories. Three generic strategies for

achieving competitive advantage are named by Michael Porter as cost leadership, differentiation, and focus. Differentiation is the approach of offering unique products or services that are of value to customers [42]. Guerrilla marketing can be a tool of differentiation in creating memorable and non-traditional advertising that makes a brand stand out from the rest in customers' minds. While Core Competencies theory suggests that industries need to discover and focus on those things where they perform best, which expose them to wide markets and provide customers with high value [43]. Including sustainable practices as part of core business may be a core competency, and guerrilla marketing can assist in communicating this advantage to consumers, therefore enhancing competitive positioning.

Through applying these theoretical frameworks to guerrilla marketing programs, industries/ firms in circular economies can better visualize the ways they can achieve and sustain competitive advantages, influence customer behavior, and create effective strategic marketing programs.

3.2. Guerrilla Marketing Concepts (GMC)

Guerrilla Marketing Communication (GMC) is an innovative and unconventional approach designed to promote products and services with the aim of creating a maximum impact while utilizing minimal resources. Guerrilla marketing can be defined as an advertising strategy that employs unconventional tactics to engage and attract customers as an alternative to traditional marketing methods. Levinson introduced the concept of Guerrilla Marketing in the 1980s, particularly for small businesses with limited budgets [44, 45]. This approach employs unexpected strategies to create a lasting impression between consumers and brands, ultimately promoting Word of Mouth (WOM) and viral marketing.

3.3 Guerrilla Marketing for Enhancing CE Practices

The GMS can play a pivotal role in raising awareness, fostering engagement, and promoting behavioral change to create sustainability among citizens of the nation regarding CE. The GMC can contribute to CE in numerous ways. These contributions may include increasing public awareness about the impact of GHG emissions, promoting sustainable products for daily use, and encouraging community involvement to foster a proactive approach towards CE, as GMC inherently involves the general population in its strategies. Furthermore, GMC can create a memorable experience concerning the use of CE products by leveraging social media, thereby embedding the impact of GHG on CE and net zero into behavioral change and establishing brand loyalty through an effective marketing strategy [46, 47].

3.4. Case Studies of Guerrilla Marketing Campaigns Promoting CE

3.4.1 IKEA - "The IKEA Reuse Centre" [48]

Overview: In 2019, IKEA implemented a guerrilla marketing campaign to promote its commitment to sustainability and circular economy, focusing on furniture reuse.

Tactics:

IKEA established "reuse centers" in public spaces with large, visually prominent installations featuring second-hand furniture. The company offers workshops on upcycling and repurposing furniture, encouraging consumers to adopt sustainable purchasing practices.

Impact:

The campaign effectively educated consumers about the benefits of furniture reuse and waste reduction, aligning with IKEA's objective of transitioning to a more circular business model. This facilitated community engagement and increased store visitation, as participants were motivated to explore IKEA's sustainable product offerings.

4. Integrating Guerrilla Marketing with Circular Economy for Net Zero

An organization requires an innovative marketing strategy to engage consumers. Prominent social media platforms, such as Instagram, TikTok, and Facebook, can be utilized to create compelling campaigns that encourage consumer participation. As part of a sustainable partnership, joint venture events can be organized to achieve a circular economy (CE) goal. Organizations can promote product lifecycle transparency to foster trust among consumers and focus on community-driven initiatives such as workshops or farmers' markets that promote sustainability [49, 50]. Guerrilla marketing campaigns (GMCs) are unique approaches that involve local communities and can establish trust and connections among communities to drive positive environmental changes. They can organize local events and workshops to promote awareness, implement community education programs, and encourage and integrate local cultures and traditions to promote solidarity among communities. GMCs can be integrated with digital platforms to create an effective strategy for promoting CE among society. GMCs are capable of creating engaging content related to CE practices such as infographics, videos, and narratives that explain CE concepts and benefits. GMCs can also facilitate user-generated content (UGC) to share experiences with sustainable practices (e.g., recycling, upcycling, sharing, or repairing) [51]. Targeted guerrilla stunts, virtual events, and webinars provide a dynamic approach for supporting the adoption of a circular economy.

Through increased market share, brand differentiation, and cost savings, guerilla marketing techniques may offer significant competitive benefits in circular economies. Businesses may build enduring brand experiences that appeal to environmentally concerned consumers by utilizing unorthodox but effective marketing strategies. This will increase market coverage and brand loyalty. Furthermore, encouraging circular economy practices like recycling, product reuse, and sustainable consumption may save money by lowering resource dependency and waste management costs. In addition to increasing profitability, this

strategic positioning gives businesses a competitive edge in international marketplaces by establishing them as sustainability leaders.

5. Economic and Environmental Impact

The integration of Guerrilla Marketing Campaign (GMC) efforts with Circular Economy (CE) principles can yield significant financial advantages for businesses through the innovative approach of Guerrilla Marketing Strategies (GMS). CE offers numerous financial benefits, including reduced raw material costs and lower waste disposal expenses. Additionally, it may increase revenue through new business models that adopt the concepts of product-as-a-service (PaaS) and repair and refurbishment services. Conversely, GMC has demonstrated benefits, such as cost-effective campaigns, high returns on investment, and enhanced consumer interaction. The combined implementation of GMC and CE can provide substantial benefits to businesses and communities. Adopting a circular approach may lead to cost reduction, new revenue opportunities, increased innovation, and enhanced brand loyalty. CE principles ensure sustainable supply chains by reducing reliance on fossil fuels, ultimately contributing to a more resilient economy and addressing climate change more effectively [52-55]. GMC is consistently developed using unconventional, creative, and cost-effective tactics, with the ultimate aim of achieving greater benefits at lower costs. This approach ultimately enables businesses to reduce the cost of services and commodities, which can directly affect the socioeconomic conditions of a community. To maximize benefits, the GMS should be designed and aligned with the interests and values of the communities in which it is implemented. Figure 5 presents a Venn diagram illustrating the relationships between GMC, CE, and net-zero emissions.

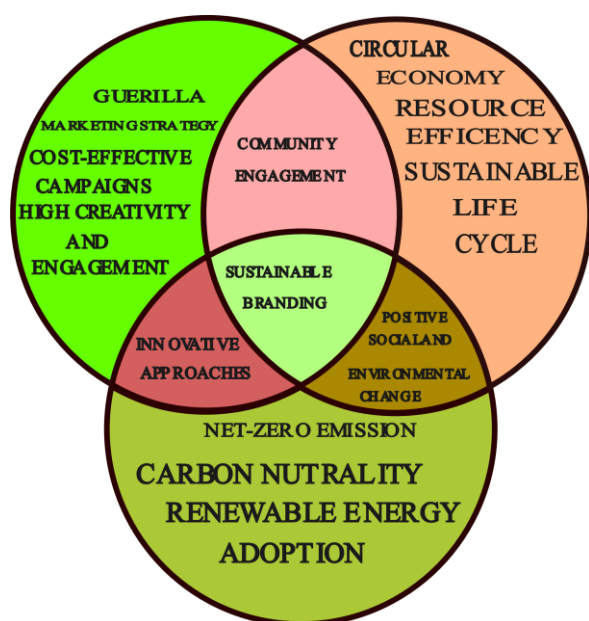


Figure 5: Venn diagram on Guerrilla Marketing Concept, Circular Economy and Net-zero Emission

The intersection of guerrilla marketing, the circular economy, and net-zero emissions presents organizations with an innovative approach to drive advancement while promoting sustainability. Environmentally focused guerrilla marketing employs unconventional methodologies to emphasize ethical practices, align with sustainability objectives, and foster consumer trust and engagement. Through the promotion of circular economy principles, such as resource efficiency and longevity design, organizations can minimize waste and mitigate environmental impacts. These principles are essential for achieving net-zero emissions, particularly when combined with policies and industry collaborations that aim to reduce the carbon footprint [56, 57]. Nevertheless, reconciling profitability with sustainability remains a significant challenge as companies must meet both consumer expectations and regulatory requirements in an evolving market landscape.

6. Challenges and Future Directions

Although integrating Guerrilla Marketing Strategies (GMS) with Circular Economy (CE) concepts yields significant benefits, certain challenges may impede the intended outcomes. These challenges include a Lack of Understanding

and Awareness, Resource Constraints, Cultural Resistance, Market Saturation, and Brand Risk and Reputation. These obstacles can be mitigated through education, community involvement, regulatory engagement, and focus on sustainability, enabling businesses to effectively harness the creative potential of guerrilla marketing to promote CE practices. The accessibility of GMS tactics has facilitated the integration of CE into numerous growth and innovation opportunities. Creative community engagement can be implemented by collaborating with local artists, designers, and community groups to create a Guerrilla Marketing Campaign (GMC) aimed at fostering brand loyalty and CE initiatives. Regular organization of community events, such as workshops to educate on topics such as recycling, upcycling, and sustainable practices while employing GMS tactics, can yield substantial benefits. Concurrent viral social media campaigns that provide an opportunity for participants to share their CE practices or experiences can cultivate a robust community around the brand [56-59]. An effective and practical feedback mechanism can be developed to encourage customers to share their thoughts on products and CE practices. This approach will inform the development of new products and marketing strategies. High-traffic areas can be enhanced with creative GMS tactics, such as artistic murals or installations, to promote CE awareness. Ambient media can be utilized in the form of street art or interactive public installations to reach audiences who might have become desensitized to traditional media [60]. Experimentation and piloting projects are additional aspects of growth and innovation in CE. Prototype development of CE products or concepts in real-world scenarios can be conducted, gathering consumer insights and refining offerings before a full-scale launch. Limited-time GMCs can be organized to promote circular products, generating urgency and interest, while allowing for real-time market testing. The unique incorporation and integration of GMC tactics and CE principles present numerous opportunities for growth, innovation, and enhanced consumer engagement. Distinctive GMS tactics can effectively leverage creativity,

community involvement, and storytelling to promote CE initiatives, while fostering brand loyalty and driving sustainable behavior. This synergistic action can lead to long-term positive impacts on both the brand and the broader community, nurturing a more sustainable future [60-65].

Assessment of the diversity of CE initiatives in conjunction with GMC strategies is essential for evaluating the long-term effects of GMC campaigns on consumer behavior, brand loyalty, and environmental awareness, particularly in relation to circular economy practices. Societies are typically comprised of diverse demographic segments. Continuous evaluation and testing of GMC strategies are necessary to determine how different demographic groups perceive and respond to these tactics as well as their efficacy in promoting CE values. In this regard, comprehensive case studies of successful GMC campaigns that incorporate CE initiatives can be conducted and analyzed to identify the best practices and frameworks for future applications. Emerging technologies such as Augmented Reality (AR) and blockchain should be investigated to enhance and amplify the positive impact of GMC and CE efforts, potentially offering novel avenues for consumer interaction. Relevant authorities may undertake efforts to examine partnerships among businesses, NGOs, and communities in implementing GMC for CE initiatives, with the aim of assessing collaborative frameworks that yield the most significant impacts. Future research should focus on how GMC campaigns can effectively influence public policy and regulatory frameworks to support CE goals, assess strategies for advocacy and engagement, and promote innovative solutions for sustainable business practices. Despite of promising synergy between guerrilla marketing and circulating economy, policy loopholes, infrastructural limitations, industrial resistance, and weak public awareness bedevil a net-zero sustainable future. These can only be addressed through inclusive policies, educational and technological investments and strong cross sector engagement.

7. Conclusion

The integration of Guerrilla Marketing Communication (GMC) tactics and Circular Economy (CE) principles presents a powerful approach to drive sustainable business practices while enhancing brand visibility and community engagement. This synergy offers innovative and cost-effective strategies for businesses, particularly small and medium enterprises, to promote sustainability without significant financial burdens. By leveraging GMC's ability to create memorable consumer interactions and the CE's focus on sustainable resource use, companies can effectively communicate complex environmental concepts and distinguish themselves in competitive markets. The collaborative potential of GMC and CE extends beyond business benefits, fostering community involvement and stimulating local economies. To maximize this potential, stakeholders should form partnerships to co-create sustainability-focused guerrilla marketing campaigns, develop educational programs on CE principles, and launch pilot projects to test CE product prototypes. This collective effort drives innovation, economic growth, and environmental stewardship. Furthermore, the combination of GMC and CE strategies can significantly contribute to achieving net-zero emissions. Through attention-grabbing marketing techniques and the implementation of circular regenerative product designs, companies can effectively engage consumers in eco-friendly behaviors, communicate sustainability initiatives, and accelerate the transition to a low-carbon future. This approach not only reduces waste and emissions but also raises public awareness about climate change, ultimately fostering a more sustainable and environmentally conscious society as well as fostering brand loyalty and expanding market share. To translate these finding actionable strategies, the following managerial implications can impact the practical insights for business leaders, marketers, and policymakers on leveraging guerrilla marketing

for circular economy practices to gain a competitive edge.

- ❖ **Competitive Advantage and Strategic Positioning:** Business leaders must recognize guerrilla marketing as a strategic tool to place their businesses at the forefront of sustainability. By creatively showcasing their circular economy efforts, businesses are able to differentiate themselves from competitors and benefit from heightened consumer demand for green products.
- ❖ **Resource Optimization and Cost Effectiveness:** Guerrilla marketing campaigns are typically cheaper than traditional marketing efforts. Managers can leverage this cost-effectiveness to maximize return on investment while promoting resource-efficient practices. This strategy not only reduces the cost of marketing but also aids the cost-reducing goals of circular economies, thus enhancing overall profitability.
- ❖ **Driving Consumer Behavior and Engagement:** Marketers may create guerrilla campaigns that tap into consumers emotionally, making sustainability actionable and accessible. By fostering community involvement, for example, recycling drives or upcycling workshops, businesses can drive consumer behavior towards sustainable consumption habits.
- ❖ **Policy and Regulatory Alignment:** Lessons from guerrilla marketing campaigns can be used by policymakers to design educational programs and public awareness campaigns that align with circular economy values. Collaboration with businesses can render sustainability regulations more effective and prompt voluntary adoption of circular practices.
- ❖ **Cross-Sector Partnerships and Stakeholder Engagement:** For maximum impact of guerrilla marketing, managers should foster

cross-sector partnerships with stakeholder engagement in the form of NGOs, local communities, and government agencies. Collaborative action grows campaign visibility, builds confidence, and encourages collective action toward a circular economy.

Additionally, also explore how technologies like augmented reality and blockchain can enhance consumer engagement and increase in circular economy initiatives. Furthermore, examining the roles of emerging digital technologies, e.g., augmented reality and blockchain, can be a source of creative methods for expanding consumer engagement and operational transparency.

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