

Creating Sustainable E-commerce Platforms

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Abstract

Concomitant with the ongoing expansion of the global e-commerce industry, concerns regarding its environmental and social impacts have increased substantially. The paper explores the concept of sustainable e-commerce. It aims to identify sustainable practices in e-commerce businesses and platforms. The paper focuses on methods that online retailers can integrate into their operations to incorporate eco-friendly practices. These include product sourcing and packaging, distribution, and customer engagement. Using a mixed-methods approach integrating a literature review and a case study analysis, the paper examines the key enablers of sustainable e-commerce. Such enablers include green logistics, ethical supply chains, and emerging digital technologies. Real-world examples, including BigCommerce, Wix, PrestaShop, Shopify, and WooCommerce, illustrate how value-driven commerce can deliver both ecological benefits and competitive advantages. The study's findings indicate that sustainable e-commerce is both attainable and imperative for the long-term viability of digital retail. It provides actionable insights for policymakers, businesses, and consumers seeking to align commerce with sustainability principles.

Keywords

Digital Sustainability; Digital Marketplace; Eco-Friendly Packaging; Sustainable E-Commerce.

Introduction

The advent of e-commerce has precipitated a paradigm shift in global retail, ushering in unparalleled levels of convenience, accessibility, and market reach. However, this digital revolution has also introduced new environmental and ethical challenges, ranging from excessive packaging waste and increased carbon emissions to unsustainable consumption patterns. Given heightened consumer awareness of climate change and corporate social responsibility, sustainability has become a pivotal imperative for online retailers.

The e-commerce industry has seen incredible growth, with estimates suggesting that the global market could surpass \$8 trillion by 2026 (Statista, 2023). However, this rapid expansion comes with its own set of challenges, such as carbon emissions from shipping, packaging waste, and a lack of transparency in supply chains. As a result, there is a growing push for more sustainable practices to address these issues.

As more consumers become aware of environmental concerns, e-commerce companies are feeling the heat to embrace sustainable practices. A 2022 report from the Capgemini Research Institute found that 62% of shoppers prefer to support brands dedicated to sustainability (Capgemini, 2022). Sustainable e-commerce aims to reduce environmental impacts while keeping the business profitable in the long run.

This paper explores the implementation of sustainability in e-commerce. The paper undertakes an examination of prevailing best practices and digital tools that support sustainable operations. It also highlights real-world case studies of platforms that are at the forefront of this field. This study uses data from academic literature, industry reports, and real-world examples to understand how digital retail can support global sustainability goals.

Literature review

Sustainable e-commerce could be defined as integrating sustainable development practices into online retail business models (Roszko-Wójtowicz et al., 2024). The goal of sustainable e-commerce is twofold: to minimize environmental damage and to promote social responsibility. As Zhang (2023) noted, this change in the face of e-commerce reflects growing concerns about climate change and resource depletion, alongside consumers seeking more sustainable products and services. E-commerce, as part of the rapidly evolving global economy, offers an excellent opportunity to improve sustainability by reducing resource and waste footprints and carbon emissions.

It is imperative to acknowledge the pivotal role of sustainable e-commerce practices in defining the contemporary landscape of environmental responsibility. The integration of green products, ethical supply chains, sustainable packaging, green logistics, and carbon-neutral shipping, along with the utilization of digital infrastructure, is paramount in fostering a paradigm shift towards sustainable business practices. The use of products made from renewable, recyclable, or biodegradable materials is imperative to conserve resources and minimize waste (Niinimäki & Hassi, 2011). Ethical supply chain processes, incorporating fair labor practices and the ethical procurement of raw materials, ensure products are manufactured in a socially responsible manner (Bocken et al., 2016). The use of biodegradable, recyclable, or minimally packaged goods has been shown to reduce waste and the carbon footprint of e-commerce supply chains (Bocken et al., 2014). Reducing emissions associated with shipping and offering carbon-neutral shipping options are core to green e-commerce practices. The integration of sustainable e-commerce practices within the digital economy, as outlined by Daulika et al. (2022), encompasses the optimization of e-commerce websites for energy efficiency, often referred to as green web hosting, and the minimization of digital wastage.

The integration of sustainability practices within the e-commerce sector is predominantly characterized by a range of business models, which can be categorized as follows: circular economy model, ethical consumerism model, and green logistics model. Circular economy model emphasizes the reduction, reuse, and recycling of products through the implementation of take-back systems, product life extension, and repair services (Kujala et al., 2023; Geissdoerfer et al., 2017). Prominent brands such as Patagonia and Allbirds have incorporated circular-economy principles into their business models by promoting product repair and facilitating secondhand markets. Several e-commerce sites are catering to the growing market of ethical, sustainable, and ecological consumers (Harrison et al., 2005). Companies such as The Ethical Shop (UK) and Ecodesign (France) operate on this model, selling eco-friendly and fair-trade products. A significant proportion of a retailer's carbon footprint is often attributable to e-commerce logistics. To address this, numerous companies have initiated carbon offset programs and adopted eco-friendly shipping options to reduce environmental degradation (Kawa & Pierański, 2021).

Technology has been identified as playing a crucial role in fostering sustainability in e-commerce. The integration of software tools for tracking carbon emissions, automating inventory management, and offering greener delivery options is becoming more widespread. In addition, e-commerce platforms such as Shopify and BigCommerce are incorporating sustainability features, including carbon-neutral shipping and sustainable packaging options, into their e-commerce infrastructure (Noor et al., 2012).

The transition towards sustainable e-commerce is being propelled by evolving consumer behaviors. A growing segment of consumers is demanding sustainable products and transparent supply chains. Research has indicated that consumers are willing to pay a premium for products that align with their sustainability values (Joshi & Rahman, 2015). Furthermore, the demand for transparency in product sourcing and environmental impact is reshaping the manner in which companies approach product marketing and communication (Gupta & Bansal, 2019).

Whilst the advantages of sustainable e-commerce are apparent, businesses encounter numerous challenges when transitioning to more sustainable models. The integration of sustainable practices, including the use of eco-friendly materials and the adoption of carbon-neutral shipping methods, often results in higher operational expenditures (Shen, 2014). The establishment and maintenance of an ethical and sustainable supply chain necessitates comprehensive monitoring, certification processes, and collaboration with suppliers (McKinsey, 2020). While awareness of sustainability issues is increasing, many consumers are still unaware of the environmental impact of their online shopping habits (Stofejová et al., 2023).

It appears that the future of sustainable e-commerce is moving towards greater automation, integration with advanced technologies (such as blockchain for supply chain transparency), and ongoing innovation in logistics and packaging. Moreover, the regulatory environment surrounding sustainability is expected to tighten, thereby encouraging a greater adoption of environmentally friendly practices among e-commerce businesses (Shen, 2014).

Sustainable e-commerce strategies

Data centers play a pivotal role in the operation of e-commerce websites; however, they are also energy-intensive. They account for approximately 2% of the world's total electricity consumption (IEA, 2020). To mitigate the energy intensity of digital platforms, low-carbon e-commerce policies have been proposed, including the adoption of energy-efficient technologies and the transition to renewable energy sources. A significant number of prominent e-commerce entities, such as Amazon and Google, have committed to using 100% renewable energy for their data center operations. This initiative is expected to result in a substantial reduction in their carbon footprint (Amazon, 2021). The utilization of artificial intelligence (AI)-driven technologies to enhance server load balancing, cooling systems, and energy management within data centers has been demonstrated to result in a reduction in electricity consumption (Bocken & Short, 2019). The issue of packaging waste from e-commerce has emerged as a significant environmental concern. According to a report by the World Economic Forum (2020), e-commerce packaging waste is identified as a primary contributor to plastic pollution. The reduction of packaging material utilized in each shipment serves to minimize waste. For instance, online grocery retailers such as Instacart have implemented methodologies to minimize packaging in their deliveries (Instacart, 2021). It appears that e-commerce platforms are starting to transition to biodegradable or recyclable packaging materials. For instance, companies like Unilever and IKEA have made efforts to incorporate sustainable packaging into their supply chains (Unilever, 2020).

The circular economy is an approach that seeks to minimize waste and maximize the lifecycle of products. For e-commerce, this might entail promoting product reuse, repair, and recycling. Electronic commerce companies can implement product take-back programs that allow customers to return used items for recycling or repurposing. Pioneered by companies such as Patagonia and IKEA, this model allows customers to return used goods (IKEA, 2021). Businesses may find it advantageous to explore strategies to extend product lifespans, such as offering repair services or refurbishing returned items. Apple's trade-in program is a potential example of this strategy, as it allows customers to trade in old devices for refurbished products (Apple, 2021). Consumers are becoming increasingly aware of the origins of products, including the conditions under which labor is performed and the environmental impact of production. Ensuring ethical practices throughout the supply chain is imperative to the sustainability of e-commerce (GRI, 2021). The

procurement of goods and services from fair trade suppliers is predicated on the principle of ensuring equitable compensation for laborers and the provision of safe working environments. Implementing blockchain technology to enhance supply chain transparency enables consumers to trace the origin and trajectory of products, thereby ensuring that ethical practices are adhered to (Sun, 2022).

The integration of advanced technologies, such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT), has significant potential to enhance the sustainability of e-commerce operations. The utilization of AI has been demonstrated to facilitate the prediction of demand trends, thereby mitigating issues such as overproduction and waste (Roszko-Wójtowicz et al., 2024). Through the optimization of inventory management, AI has the potential to minimize the carbon footprint of goods that remain unsold.

It is imperative for e-commerce businesses to assume responsibility for educating consumers about the ramifications of their purchasing decisions on both the natural environment and society. One strategy to encourage consumers to engage in more sustainable behaviors is to offer incentives for choosing sustainable options. These incentives could include discounts for selecting eco-friendly shipping methods or for products that are made from recycled materials (Gupta & Bansal, 2019).

The use of artificial intelligence in customer experience management has been shown not only to facilitate streamlined business processes but also to offer substantial added value by personalizing experiences to individual customer preferences (Sulastri, 2023). In the period following the pandemic, consumer behavior has undergone a profound transformation, accompanied by significant technological advancements. The pandemic has been shown to have accelerated consumer value-oriented behavior (Beyari 2025; Campisi et al., 2023). This is evidenced by a change in focus for consumers, who now prioritize essential products, safe transactions, and cost transparency, rather than product variety. The rapid digitization during the pandemic brought to light several privacy issues, which were then brought to the attention of end-users (Cheng et al., 2023). This, in turn, led to an increased focus on the handling and deployment of data from AI systems. The increasing digital awareness of consumers has led to the development of digital resilience, resulting in automatic suspension of trust, even for highly convenient e-commerce platforms (Beyari 2025). In the post-pandemic era, the concept of customer loyalty is evolving, with platforms that demonstrate ethical data management practices and their ability to exhibit digital ethics emerging as key factors in this transformation (Helmi et al., 2024). User expectations for digital agencies demand that AI systems achieve personalized services without compromising privacy or requiring users to relinquish control over their data (Beyari, 2025).

In the context of electronic commerce, AI technology is being utilized with increasing frequency to automate processes, improve customer segmentation, accelerate logistics, and enhance overall competitiveness (Papastamoulou & Antonopoulos, 2025). Although the implementation of AI in e-commerce is pervasive, there are considerable variations among companies in terms of the strategic implementation and the extent of functional deployment. This variability presents a valuable opportunity to conduct a thorough investigation into two key areas. Firstly, it will examine how AI is currently being utilized. Secondly, it will explore how the adoption of AI aligns with the diverse range of business models, operational requirements, and levels of digital maturity (Papastamoulou & Antonopoulos, 2025).

Transitioning to sustainable e-commerce is a complex process that requires a variety of approaches. Businesses might consider investing in energy-efficient technologies, adopting sustainable packaging, fostering circular-economy principles, ensuring ethical sourcing, and leveraging advanced technologies to optimize operations. Consumer education and engagement are also essential in fostering demand for sustainable practices. As sustainability becomes increasingly central to business strategies, e-commerce platforms that implement these practices

will be well-positioned to reduce their environmental impact and build trust with consumers, paving the way for long-term business success.

Methodology

The study is theoretical and relies on literature review and case studies relating to sustainable e-commerce. The analysis aims to identify the impact of sustainable practices on e-commerce development. The paper's focus is on conducting an exploratory study and analysis rather than a systematic literature review. A non-systematic literature review is a type of review that is informative rather than exhaustive. It is a review of the existing literature on sustainable e-commerce. The study is supported by a selection of the most recent, high-quality papers, as determined by a knowledgeable authority. In the present paper, the authors present a series of references and information derived from a curated selection of articles found on the internet and social media (Moher et al., 2015). The objective of this curation is to provide a balanced integration of academic rigor and practical relevance, offering a comprehensive perspective that informs and advances the field. The selection of this method was intended to enhance understanding of the prevailing circumstances in sustainable e-commerce.

The platforms Wix, Shopify, WooCommerce, PrestaShop, and BigCommerce were selected for analysis because they represent a prominent segment of the e-commerce landscape, each with a distinct approach to online commerce. Wix, Shopify, and BigCommerce are classified as fully hosted Software as a Service (SaaS) platforms, whereas WooCommerce and PrestaShop are categorized as open-source solutions. This amalgamation of platforms enables a comparative analysis of their respective capabilities and features in areas such as infrastructure, flexibility, scalability, pricing, and their intended user base.

The research explores the extent to which these companies prioritize sustainability. The study examines documents such as sustainability reports, ESG disclosures, press releases, and the customary corporate statements from Wix, Shopify, WooCommerce, PrestaShop, and BigCommerce. The objective is to undertake a thorough examination of the disclosures made by these entities, with a focus on identifying recurring themes across three primary domains: environmental sustainability, social responsibility, and governance.

The methodology presents some limitations. Firstly, the study is purely reliant on secondary sources of data that are extracted from publicly available corporate data and industry reports on Wix, Shopify, WooCommerce, PrestaShop, and BigCommerce. It is recognized that the data may be more representative of positioning and marketing strategies than independently confirmed operational data. In the context of sustainability, the assessment process is based on publicly stated commitments and initiatives, rather than audited environmental outcome data, which would be more challenging to measure in terms of actual ESG performance. Secondly, comparisons of qualitative content and features are also vulnerable to subjective bias in information categorization and assessment. The absence of empirical primary research, such as interviews, surveys, or performance testing, limits the ability to corroborate the claims documented in the study.

Results and discussion – case studies

1. Wix

Wix has adopted an approach that promotes the utilization of slower, more sustainable shipping methods. By using badges or pop-ups to highlight eco-friendly delivery options, businesses can inform customers about the environmental benefits of slower shipping methods, such as reduced carbon emissions. Moreover, the consolidation of products for bulk shipping can reduce the total number of deliveries, thereby further diminishing the environmental impact.

Merchants using Wix are advised to opt for recyclable or reusable packaging materials. For instance, Mananalu, a brand that sells water in recyclable aluminum bottles, uses its Wix-powered store to educate consumers about the impact of their packaging choices. It has been demonstrated that encouraging customers to return packaging for reuse or recycling can also promote sustainability.

Wix facilitates the establishment of promotional campaigns and loyalty programs that encourage customers to make eco-friendly decisions. For instance, the provision of discounts for opting for less expeditious shipping methods or the awarding of loyalty points for returning recyclable packaging has been shown to encourage sustainable consumer practices.

Wix provides businesses with services that help extend the lifecycle of their products. These services include repairs, refurbishments, and resale platforms. The provision of options to customers that allow them to repair or trade in products has been shown to have several notable effects. Among them is reduced waste, a significant benefit to any economy. Furthermore, this practice can also promote the development of a circular economy (www.wix.com) (see Table 1).

Table 1. Examples of sustainable businesses built with Wix

<i>Business Name</i>	<i>Sustainability Focus</i>	<i>Wix Features</i>
Sticky Lemon stickylemon.com	Produces colorful bags and accessories from recycled PET bottles.	Features an online store with product galleries and an integrated shopping cart.
Indian Summer the Label indiansummerthelabel.com	Focuses on sustainable fashion using organic cotton, linen, and bamboo fabrics.	Showcases collections with high-quality images and a user-friendly shopping experience.
Mane Ethical Hairdressing maneethical.com	An ethical hairdressing salon promoting low-tox environments and sustainable products.	Provides online booking, service descriptions, and a clean, minimalist design.
Mananalu mananalu.com	Sells water in infinitely recyclable aluminum bottles to reduce ocean plastic waste.	Incorporates dynamic videos, storytelling, and eCommerce integration.
Puffin Packaging puffinpackaging.co.uk	Provides innovative, eco-friendly packaging solutions in the UK.	Offers an interactive quote request form and a comprehensive product catalog.

Source: Authors' research results

It is evident that these commercial enterprises employ Wix's multifaceted functionalities to advocate their sustainability-focused strategies and facilitate a streamlined user experience.

2. Shopify

Shopify, a prominent e-commerce platform, has a global reach, supporting over a million businesses. As a platform provider, the entity under discussion occupies a unique position, enabling it to exert influence over a wide network of small and medium-sized businesses. This distinction sets it apart from a direct retailer. The following three cases demonstrate the potential for entrepreneurs to develop sustainable businesses on the Shopify platform, illustrating how such enterprises can be built in an environmentally conscious manner. Here are a few examples of sustainable businesses built with Shopify (www.shopify.com) (see Table 2).

Table 2. Examples of sustainable businesses built with Shopify

Brand	Sustainability Strategy	Shopify Tools Used
Allbirds allbirds.com	Offers footwear made from natural materials, focusing on reducing carbon footprint and using renewable resources	Detailed pages on sustainability initiatives, transparent material sourcing, and a user-friendly website design.
Blueland blueland.com	Provides environmentally friendly cleaning products in refillable packaging to reduce plastic waste.	Subscription-based refills, clear product visuals highlighting eco-benefits, and educational content on plastic waste reduction.
Tentree tentree.com	Plants ten trees for every item purchased, aiming to plant one billion trees by 2030.	Interactive tree-planting tracker, nature-inspired design, and information on ethical sourcing.
Package Free Shop packagefreeshop.com	Offers zero-waste, plastic-free alternatives for everyday products.	Product filters for zero-waste items, an informative blog about sustainable living, and transparent packaging information.
Ettitude ettitude.com	Bedding produces bamboo, a sustainable material that uses less water and emits less carbon dioxide.	Sustainability-focused product descriptions, insights into eco-friendly manufacturing, and a luxurious website design.

Source: Authors' research results

It has been demonstrated that businesses effectively leverage the multifaceted features of the Shopify platform to promote their sustainability initiatives and to provide users with an uninterrupted experience.

3. WooCommerce

WooCommerce, an open-source plugin for WordPress, has the potential to help online stores achieve their sustainability goals, with over 4 million stores worldwide. It is suggested that WooCommerce could be a useful tool in pursuing sustainability.

WooCommerce's open-source nature enables fully customized experiences for both customers and merchants, a great advantage. It is possible to integrate plugins for carbon offsetting, eco-shipping, and sustainable payment gateways. WooCommerce has the potential to help eco-friendly brands reach a broad audience while maintaining a focus on sustainability. Here are examples of sustainable businesses built with WooCommerce (www.woocommerce.com) (see Table 3).

Table 3. Examples of sustainable businesses built with WooCommerce

Business Name	Sustainability Focus	WooCommerce Features
Forest Whole Foods forestwholefoods.co.uk	Offers organic and affordable whole foods sourced from local suppliers, with a mission to make healthy food accessible.	Utilizes WooCommerce's custom design with clean layouts and an optimized checkout process.
Green Kid Crafts greenkidcrafts.com	Provides eco-friendly craft kits for children, aiming to foster creativity and environmental stewardship.	Employs WooCommerce's subscription model and a rich feature set to manage recurring orders and customer engagement.
EcoKitty ecokitty.co.uk	Offers eco-friendly cat accessories and toys made from sustainable materials.	Uses WooCommerce with iThemes' Builder theme to create an appealing and functional online store.

Creatures of Habit creaturesofhabit.in	Focuses on sustainable clothing with ethical manufacturing practices.	Features a WooCommerce store with a custom-developed return and exchange system, product waiting lists, and integrated live chat support.
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Source: Authors' research results

4. PrestaShop

It is worth considering how PrestaShop could be a useful tool for businesses looking to operate sustainably. PrestaShop could be a good option for those looking for a flexible solution to create a website that can showcase eco-friendly values, from custom product pages to green shipping options. The integration of eco-friendly payment and shipping solutions, such as the provision of carbon offsets at the point of sale, is of paramount importance in the context of sustainable development. The utilization of SEO optimization and eco-conscious marketing tools enables businesses to promote sustainable practices effectively. The software is characterized by its open-source nature and cost-effectiveness. PrestaShop's open-source nature allows businesses to build custom features for sustainability with minimal upfront costs. This is an ideal solution for small businesses with limited financial resources yet a strong commitment to sustainability. Here are some examples of business and platform features (www.prestashop.com) (see Table 4).

Table 4. Examples of sustainable businesses built with PrestaShop)

<i>Business Name</i>	<i>Sustainability Focus</i>	<i>PrestaShop Features</i>
Artipoppe artipoppe.com	Offers luxury baby carriers made from sustainable materials, promoting ethical parenting.	Utilizes PrestaShop's localization features for currency and tax adjustments, integrates Instagram feed, and provides detailed product pages with high-quality images and videos.
Ecofort AG ecofort.ch	Specializes in energy-efficient indoor climate products that promote sustainable living.	Employs custom PrestaShop themes with features like product comparison tools, detailed product pages with images and videos, and custom checkout options
Aktiv Naturheilmittel aktiv-naturheilmittel.de	Produces and retails dietary supplements with a focus on natural and sustainable ingredients.	Utilizes PrestaShop's multi-store functionality, uniquely designed product pages, a health-focused blog, and offers free consultation calls.

Source: Authors' research results

The following case studies illustrate the utilization of PrestaShop as a foundation for sustainable business models in the real world. These case studies highlight the sustainability-focused features of the businesses in question.

5. BigCommerce

BigCommerce is a prominent Software-as-a-Service (SaaS) e-commerce platform that facilitates the establishment of online stores for business entities. The platform has garnered a reputation for its scalability, customization, and omnichannel capabilities. In addition, BigCommerce has positioned itself as a sustainable choice for businesses aiming to reduce environmental impact and improve long-term operational efficiency.

The examples presented here illustrate the way BigCommerce assists enterprises in the pursuit of sustainability, whilst concomitantly upholding a commitment to environmental responsibility (www.bigcommerce.com) (see table 5).

Table 5. Examples of sustainable businesses built with BigCommerce

<i>Business Name</i>	<i>Sustainability Focus</i>	<i>BigCommerce Features</i>
EcoEnclose ecoenclose.com	Provides eco-friendly shipping supplies made from recycled materials, promoting sustainable packaging solutions.	Utilizes BigCommerce's customization capabilities to offer tailored packaging options, including real-time pricing based on dimensions and print choices.
Designerie designerie.com	Offers furniture made from natural materials, such as rattan, emphasizing sustainable living spaces.	Showcases eco-friendly products with detailed specifications and features a dedicated sustainability page highlighting their commitment.
Solo Stove solostove.com	Produces efficient, low-smoking fire pits and camp stoves designed for sustainable outdoor experiences.	Leverages BigCommerce's scalable infrastructure to handle high traffic and seasonal demand.
Mountain Rose Herbs mountainroseherbs.com	Offers organic herbs, spices, and teas, focusing on sustainable sourcing and fair-trade practices.	Utilizes BigCommerce's robust product categorization and search functionality to assist customers in finding eco-friendly products.

Source: Authors' research results

Each platform caters to a distinct range of business stages and requirements. However, a unifying factor underpinning these initiatives is the growing capability to support and amplify sustainability efforts. This encompasses a range of strategies, including carbon-neutral shipping, eco-friendly product filtration, incentives for reusable packaging, and educational storytelling. Currently available technological capabilities enable the integration of environmental responsibility into the online shopping experience.

Conclusions

The rise of conscious consumerism and the increasing focus on environmental issues are driving businesses to adopt sustainable practices. The future of e-commerce is likely to include the following elements. The implementation of more stringent regulations on environmental impact and product-sourcing transparency is imperative. The adoption of circular economy principles, which emphasize the design of products for reuse, recycling, or repair, is imperative on a broader scale. The following innovative shipping solutions have been developed to minimize carbon footprints: electric vehicles and drone deliveries. The mounting consumer demand for sustainability has prompted a growing number of businesses to prioritize eco-friendly practices to maintain competitiveness in their markets.

Sustainable e-commerce is not merely a passing trend; rather, it is a critical step toward reducing the retail industry's environmental impact and promoting responsible consumerism. Adopting sustainable practices is a twofold strategy for businesses. Firstly, it contributes to environmental stewardship, which benefits the planet. Secondly, it fosters trust and loyalty among eco-conscious consumers, a growing demographic.

E-commerce is growing quickly. This creates both challenges and opportunities for achieving sustainability goals. This research shows that sustainable e-commerce is possible and important in today's economy, where people care about the environment. A review of successful case studies, including Wix, Shopify, BigCommerce, PrestaShop, and WooCommerce, demonstrates the potential to integrate ethical and sustainable practices across all layers of the e-commerce value chain. In the contemporary business landscape, there is an observable trend of enterprises transitioning towards circular business models, carbon-neutral operations, and transparent supply

chains. This transition encompasses various operational aspects, including product sourcing, packaging, logistics, and customer engagement.

The analysis yielded pivotal elements for fostering sustainable e-commerce: Technology has emerged as a facilitator of environmental sustainability. Platforms such as BigCommerce, Wix, PrestaShop, Shopify, and WooCommerce offer features that promote eco-conscious practices, including green hosting, carbon tracking, and sustainable logistics plugins.

An examination of contemporary consumer trends reveals a discernible shift in market dynamics, characterized by a growing tendency among digital consumers to actively seek out ethical brands. This trend is particularly significant, as it influences how businesses develop and market their products, thereby shaping the ethical landscape of the consumer goods sector. Collaborations with non-governmental organizations (NGOs), certification bodies (e.g., B Corp, Climate Neutral), and suppliers with shared values are essential for amplifying impact.

Nevertheless, challenges persist, particularly in areas such as greenwashing, high return rates, and the environmental costs of last-mile delivery. To address these discrepancies, it is imperative to implement more robust regulatory frameworks, improve the quality of lifecycle data, and foster innovation in packaging and transport systems.

In conclusion, sustainable e-commerce is not merely a passing trend but rather a transformative force that is reshaping global retail. For businesses willing to adapt, sustainability offers a path to resilience and customer loyalty, as well as a meaningful contribution to planetary well-being. As awareness and technology continue to evolve, the fusion of commerce and sustainability will increasingly define the future of digital retail.

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