

From Evertoys to LEGO: Exploring Sustainable Development Models in the Toy Industry

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Abstract. In the context of global environmental challenges and resource depletion, this study focuses on sustainable development models in the toy industry. The study mainly explores Evertoys' and the LEGO Group's adoption and implementation of environmentally friendly business models. Through literature review and case study analysis, this paper examines in detail how these companies address environmental challenges in the whole process of toy production and consumption through innovative business models and sustainable development strategies. The findings indicate that Evertoys' subscription service model and LEGO's recycling program effectively reduce the demand for new toys, promote resource conservation and toy reuse, and provide consumers with more environmentally friendly toy usage options. In addition, these measures are conducive to mitigating the negative environmental impacts of toy production and disposal, driving the industry towards more sustainable development. To sum up, sustainable development in the toy industry requires collective efforts from industry participants, including the adoption of eco-friendly materials, improvement of production processes, increased consumer awareness of sustainable toy choices, and enhanced recycling and circular utilization of toys. Furthermore, policy support from governments and relevant institutions is a key factor in promoting sustainable development in the industry.

Keywords: Sustainable development, waste management, chemical pollution, toy recycling.

1. Introduction

This study focuses on the environmental challenges faced by the toy industry in the context of globalization and its pursuit of sustainable development. According to recent research in this field, it is significant to promote an environmentally friendly transformation in the toy industry for various factors, such as resource consumption, energy consumption, plastic waste, and biodiversity impact [1]. Toxic chemicals in toys and children's products are also what governments should focus on [2]. Research conducted by Albastroi Nastase et al. provides profound insights into sustainable practices within the toy industry. By examining the business model of a Romanian company, they reveal the potential application of circular economy principles in the toy sector [3]. Also, other research conducted through a comprehensive case study on toys demonstrates various methodological approaches to evaluating the sustainability of toy products [4]. The importance of incorporating circular economy concepts, such as reuse, recycling, and resource efficiency, is strongly emphasized [5].

This study provides practical guidance and strategic recommendations for policymakers and business decision-makers both within and outside the industry. It specifically unfolds around the exploration of contemporary sustainable development models in the toy industry, taking Evertoys and LEGO as two case studies to explore how they address environmental issues in the production and consumption processes through innovative business models and practical strategies. The ultimate research goal of this study is to reveal effective models and strategies for sustainable development in the toy industry. To achieve this goal, detailed industry background analysis, case studies, and strategy recommendations were conducted, aiming to provide theoretical and practical support for the sustainable development of the toy industry.

2. Analysis of Environmental Challenges in the Toy Industry

The toy industry aims to bring both joy and learning experiences to children around the world. In the meanwhile, like other industries, with the fast development of technology and science in recent years, it has faced significant environmental challenges. For example, the heavy reliance on plastics, which are mainly derived from fossil fuels, contributes heavily to carbon emissions and environmental pollution. The article from The Good Boutique discusses the significant environmental impact of cheap plastic toys, highlighting their contribution to pollution and harm to wildlife due to non-biodegradable materials [6]. The production process of plastic toys inevitably generates a significant amount of chemical pollution. It poses a risk to children's health and the environmental impact. According to the United Nations Environment Programme's "*Chemicals in Plastics - A Technical Report*" more than 13,000 chemicals are associated with plastics and their production across a wide range of applications. The potential adverse impacts of about 7,000 substances associated with plastics indicate that more than 3,200 have one or more hazardous properties of concern. Among these, ten groups of chemicals, including specific flame retardants, certain UV stabilizers, per- and poly-fluoroalkyl substances (PFASS), phthalates, bisphenols, alkylphenols and alkylphenol ethoxylates, biocides, certain metals and metalloids, polycyclic aromatic hydrocarbons, and many other non-intentionally added substances (NIAS), contain high toxicity and potential to migrate or be released from plastics. As a result, they have been identified as major concerns by medium.

What's more, in addition to the environmental damage caused by the production process and raw material extraction, a significant portion of the products manufactured by toy companies also end up as waste, consuming a vast amount of energy. In today's society, with the prevalence of consumerism and the acceleration of production activities, the issue of toy disposal has increasingly become an emergent challenge for environmental sustainability. Most of the toys, estimated at 80%, find their way into landfills, leading to environmental risks not just through their disposal but also throughout their life cycle, including design and production phases [7]. This accumulation in landfills is particularly concerning due to the composition of these toys, mostly plastic, which takes a long time to break down, releasing toxic chemicals into the environment affecting soil fertility, and potentially contaminating groundwater, causing long-term chemical pollution [8].

3. Case Study

3.1. The Unique Business Model of Evertoys

For case studies, firstly, this study took Evertoys, a pioneering Romanian toy company that has embraced a unique business model. This model aligns perfectly with the growing global trend towards sustainability and the circular economy. In simple terms, unlike other typical toy companies that adopt the conventional purchasing model, Evertoys is based on a subscription service. As shown in Figure 1, users can rent various types of toys on the online platform provided by the company, play with them, and return them within the rental period [9]. This initiative fosters a shift from ownership to sharing among multiple users, leading to the reduction of the demand for new toys. Children satisfy their desire for novelty by renting new toys, and then returning them after growing tired of playing, allowing for the recycling and reuse of toys. This can be very effective in conserving resources, minimizing waste production, and addressing the issue of toy disposal.

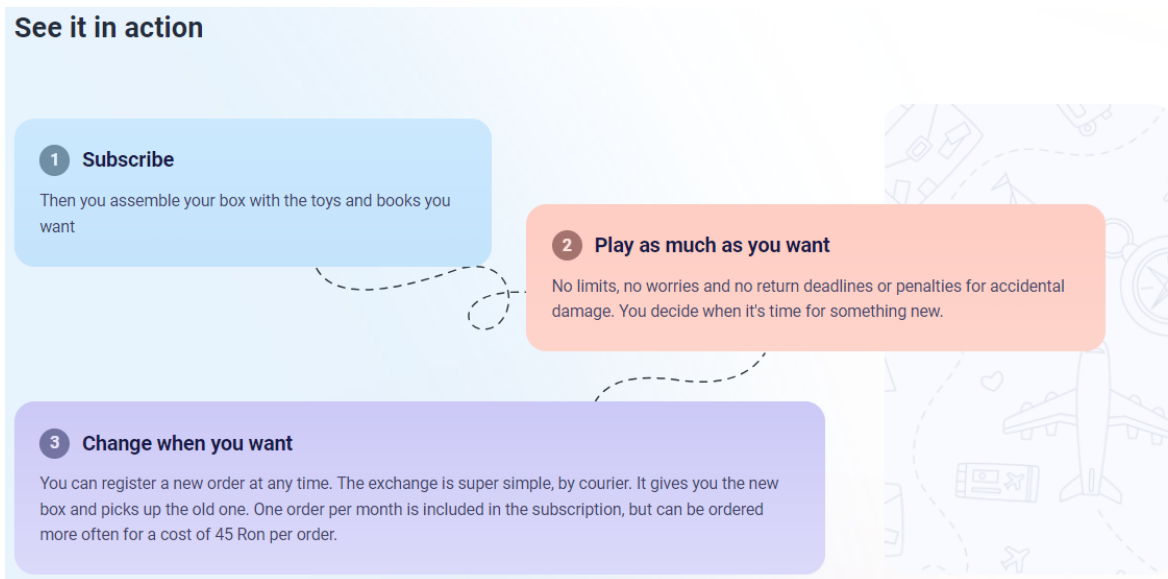


Fig. 1 Evertoys subscription service process [9].

3.2. The Measures Adopted by LEGO Company

The second case the study focused on is the LEGO Group. LEGO is a world-famous brand. In 2023, LEGO's brand value surged by 24% to reach \$7.4 billion, making it over four times more valuable than the second-ranked brand in the toy industry. Brand Finance, the world's leading independent brand valuation consultancy, evaluated the top 10 most valuable toy brands in 2023. LEGO Group ranked first, underscoring its paramount status within the global toy industry and reflecting its enduring popularity among consumers of all ages [10].

The LEGO Company served as a role model in the global toy industry. In recent years, the company has dedicated a lot to promoting eco-friendly projects and invested a large amount of money in the development of sustainable initiatives, aiming to achieve net-zero greenhouse gas emissions by 2050. Niels Christiansen, the CEO of LEGO Group, highlighted the importance of meeting 2032 carbon reduction targets. He emphasized that LEGO employers, partners, and suppliers will be fully committed to reducing the company's carbon footprint.

LEGO is committed to promoting energy efficiency across its operations, aiming to power all its activities with 100% renewable energy by 2030. To achieve this goal, the company has invested a lot in renewable energy sources, such as solar panels on its buildings and wind power projects, to reduce its reliance on fossil fuels. In addition, LEGO launched a plan called 'LEGO Replay', which is similar to the business model of Evertoys. It encourages its users to recycle and reuse their toys by recycling old LEGO bricks and redistributing them to organizations and families in need. By implementing this plan, LEGO helps to extend the product lifespan and promotes the efficient use of resources.

4. Analysis

As analyzed in the previous case study of Evertoys, which has revolutionized the concept of toy consumption through its "Toy-as-a-Service" model, fundamentally reducing the demand for new toys. This innovative approach supports temporary ownership, encouraging the reuse and sharing of toys among multiple users. By doing so, Evertoys addresses two critical environmental issues: resource consumption and waste generation. The model promotes a circular economy within the toy industry by extending the life cycle of toys, thus minimizing the need for constant production of new items. This innovative model helps not only conserve resources but also significantly reduce waste, setting a sustainable standard for how toys can be enjoyed by generations of children without adversely impacting the planet.

Regarding the second case study, LEGO, a household name and a global leader in the toy industry, has committed to sustainability through multiple facets of its operations. The company's pledge to use sustainable materials in its products is a monumental step towards reducing the environmental footprint of toy manufacturing. By sourcing materials that are less harmful to the environment, LEGO ensures that the joy its products bring to children does not come at the expense of future generations. Furthermore, LEGO's efforts to decrease carbon emissions throughout its supply chain, enhance transparency and compliance, and engage in educational and social initiatives underscore its holistic approach to sustainability. The company's recycling and circular reuse programs exemplify how product life cycles can be extended, thereby reducing waste and promoting a more sustainable consumption model.

Both Evertoys and LEGO exemplify how businesses can thrive while prioritizing environmental sustainability. Their innovative approaches provide valuable lessons for other companies in the toy industry and beyond. By adopting models that reduce the need for new products, utilize sustainable materials, and implement recycling and reuse programs, companies can contribute to a more sustainable future. These practices not only benefit the environment but also build positive brand images, attract eco-conscious consumers, and foster long-term loyalty. As the toy industry continues to evolve, the pioneering efforts of Evertoys and LEGO offer a road map for integrating sustainability into the core of business strategies, proving that environmental responsibility and business success are not mutually exclusive but rather mutually reinforcing.

In addition to these two companies, other toy companies have also made efforts, to implement similar programs. For example, Hasbro's Recycling Program, Mattel's PlayBack Program, and Green Toys' Sustainable Production. Many of their products are made from recycled plastics. More and more toy companies are now encouraging consumers to send back no longer used toys and games to the company for recycling and reuse. This is undoubtedly a positive trend that want to see. By taking these measures, these companies aim to reduce waste, support the practice of a circular economy, and educate consumers on the importance of sustainable consumption.

5. Suggestions

In today's world, environmental challenges have become a global focus, with resource depletion and environmental pollution being particularly prominent. The acceleration of industrialization and the continuous growth of the global population have led to the over-exploitation and consumption of natural resources, and the resulting environmental pollution issues have placed immense pressure on the Earth's ecosystems. These challenges not only threaten human health and well-being but also have profound impacts on biodiversity and global climate. Against this backdrop, the concept of sustainable development has emerged, with its core goal being to meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development emphasizes finding a balance between economic growth, social inclusion, and environmental protection to achieve long-term global development goals. This concept recognizes the intrinsic link between environmental protection and socioeconomic development, proposing a new development model aimed at solving environmental challenges through innovation and cooperation while promoting economic growth and social welfare. In industries such as the toy industry, sustainable development is particularly critical. As an important part of the global economy, the environmental impact of the production and consumption processes in the toy industry cannot be ignored. From the collection and processing of raw materials to the design and manufacturing of products, and then to the recycling and disposal of products after consumption, every link in the chain has the potential to impact the environment. Therefore, the toy industry needs to actively explore and implement sustainable development strategies, reducing environmental impacts through the use of eco-friendly materials, optimized design, improved energy efficiency, and promotion of product recycling and reuse, while meeting market demand for toys.

Moreover, with the rise of consumer environmental awareness and green consumption trends, sustainable development has become an important aspect of corporate competitiveness. By implementing sustainable development strategies, companies can not only reduce the environmental impact of their operations but also enhance their brand image, attract more environmentally conscious consumers, and stand out in the fierce market competition. In the quest for sustainable development within the toy industry, Evertoys and LEGO, which are mentioned above in this essay, act as two pioneering companies and stand as exemplary models for others to follow. These corporations have not only embraced innovative practices that align with environmental sustainability but have also demonstrated that economic success can go hand in hand with ecological responsibility.

Furthermore, there are more things to do in other phases such as toy design and production. Manufacturers can choose recyclable materials or bio-based materials (such as cornstarch plastics, bamboo fibers, etc.) for toy production to reduce reliance on traditional plastics and lower the carbon footprint. Many companies invest a lot to optimize production processes and use energy-efficient equipment and clean energy sources to reduce energy consumption and emissions during manufacturing [11].

Also, by improving the durability and versatility of toys, toy companies can extend the lifespan of their products to reduce consumption and waste, leading to an increase in brand reputation and enhanced visibility. As for packaging, companies can use recyclable or biodegradable packaging materials to minimize packaging waste. All in all, a collective effort both within and outside the industry is required, including the adoption of more environmentally friendly materials, improvement of production processes, raising consumer awareness of sustainable toy choices, and strengthening toy recycling and circular utilization. This means suppliers, manufacturers, buyers, and recycling processors should work together to reduce the negative impact on the natural environment, avoiding threatening human health and the stability of ecosystems. Also, the government should implement relevant policies to promote the sustainable development and circular economy of the toy industry. By constantly taking these measures, the environmental impact of the toy industry can be mitigated, promoting its development in a more sustainable direction.

6. Conclusions

The findings of this study reveal the effective practices of Evertoys and the LEGO Group in addressing environmental challenges throughout the toy production and consumption processes through their innovative business models and sustainable development strategies. This contributes to the conclusion that sustainable development models are unequivocally crucial for the toy industry. Through subscription service models and recycling programs, these companies have not only reduced the demand for new toys, promote resource conservation, and toy reuse, but also provided consumers with more environmentally friendly toy usage options. Moreover, these measures contribute to mitigating the negative environmental impacts of toy production and disposal, driving the industry towards more sustainable development.

In addition, this research offers significant reference value for future studies in this direction, primarily influencing the understanding and implementation of sustainable development strategies within the toy industry, especially in promoting the use of eco-friendly materials, improving production processes, raising consumer awareness of sustainable toy choices, and strengthening toy recycling and circular utilization. Future research should focus more on exploring how to further promote the sustainable development of the toy industry through policy support, technological innovation, and consumer education. Additionally, investigating how to effectively integrate the forces of all parties in the supply chain to jointly promote the green transformation of the toy industry is an important direction for future research.

As global awareness of environmental protection continues the goals of sustainable development are advanced, and sustainable development in the toy industry has become an irreversible trend. This study inspires more enterprises to adopt and implement sustainable development models, not only

creating a safer and more environmentally friendly play environment for children today but also protecting the common home, the Earth, for future generations.

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