

Ways of Increasing Competitiveness of Tv Industry Enterprises Based on Green Innovations

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Abstract: This article explores how TV industry enterprises can enhance competitiveness through green innovations. Key strategies include adopting energy-efficient technologies, using sustainable supply chains, integrating renewable energy, and leveraging digital tools like AI and IoT. Green marketing, eco-friendly product design, and compliance with environmental standards also play a crucial role. These approaches not only reduce environmental impact but also offer economic and strategic advantages in a rapidly evolving market.

Keywords: Green innovation; TV industry; sustainability; energy efficiency; renewable energy; eco-design; digital tools; competitiveness.

Introduction: In today's fast-paced digital environment, the television (TV) industry is undergoing significant transformation. As global awareness of environmental sustainability grows, industries are increasingly expected to adapt to green innovations and environmentally friendly practices. The TV industry, traditionally energy-intensive and reliant on complex supply chains, must align itself with these expectations. Not only are these green initiatives beneficial for the planet, but they also serve as critical drivers of long-term competitiveness. Consequently, integrating green innovations is no longer a peripheral concern—it is a strategic imperative. This article explores the key ways TV industry enterprises can enhance their competitiveness through the adoption of green technologies, sustainable practices, and environmentally responsible policies.

Green innovation refers to the development and implementation of products, services, or processes that reduce environmental impacts. In the context of the TV industry, this encompasses everything from the design and manufacturing of energy-efficient TV sets to sustainable broadcasting practices and environmentally conscious corporate strategies. For example, modern LED TVs consume significantly less power than their CRT predecessors, thanks to energy-saving display technologies. Furthermore, broadcasters are now investing in cloud-based infrastructures that

not only reduce energy consumption but also lower carbon emissions associated with physical server maintenance. According to the International Telecommunication Union (ITU), energy efficiency in ICT, including broadcasting, could cut global CO₂ emissions by 15% by 2030 if widely adopted. Thus, green innovation is no longer merely a technological upgrade—it is a multifaceted strategy that incorporates resource efficiency, digital transformation, and sustainable value chains.

One of the primary areas where TV industry enterprises can enhance their competitiveness is through the adoption of energy-efficient production and broadcasting technologies. For instance, replacing traditional lighting in production studios with LED lighting can result in energy savings of up to 70%. Similarly, digital transmitters and low-power consumption equipment significantly reduce energy use. Moreover, television manufacturers are increasingly incorporating energy-saving features into their products. Smart TVs, for example, now include automatic brightness control and power-saving modes. Not only do these features appeal to eco-conscious consumers, but they also align with international energy certification standards such as ENERGY STAR and EU Ecodesign. It is important to note that energy efficiency also reduces operational costs, thereby enhancing the bottom line. In a competitive market

where profit margins are tight, cost reduction through sustainable operations can be a significant advantage.

Another effective strategy involves greening the entire supply chain. TV manufacturing involves sourcing various components—plastic, metals, semiconductors, and rare earth elements. By sourcing these materials responsibly and partnering with suppliers that adhere to environmental standards, enterprises can improve their environmental footprint and reputation. For example, companies like Samsung and LG have committed to using recycled plastics in their television casings and reducing the use of hazardous substances. In 2023, LG announced that over 600,000 tons of recycled plastics had been used in their electronics manufacturing processes, highlighting a clear shift toward circular economy principles. Additionally, sustainable logistics—such as using electric delivery vehicles and optimizing transportation routes—can also contribute to reduced emissions. These practices not only ensure regulatory compliance but also attract investment from sustainability-focused investors [1, 39-54].

Incorporating renewable energy sources into operations is another impactful way to boost competitiveness. TV studios and broadcasting centers consume substantial amounts of electricity. Transitioning to solar, wind, or hydroelectric power can greatly reduce dependence on fossil fuels. Take the BBC as an example. The British broadcaster has committed to net-zero emissions by 2030 and has already started sourcing electricity from renewable providers for its major studios. This shift not only aligns with the UK's climate goals but also sends a powerful message about corporate responsibility. Furthermore, companies that invest in renewable energy often benefit from tax incentives, grants, and subsidies offered by governments. These financial benefits, combined with improved public perception, make renewable integration a smart strategic move.

Designing for sustainability is an essential component of green innovation. Life Cycle Assessment (LCA) helps manufacturers evaluate the environmental impact of a TV product from raw material extraction to end-of-life disposal. Companies can increase competitiveness by focusing on modular design, which allows easier repair and component replacement, extending product lifespan. For instance, Panasonic's "Cradle-to-Cradle" initiative encourages designing products that are not only recyclable but also upgradable and reusable. Additionally, offering take-back programs and recycling services helps manage e-waste more responsibly. According to the Global E-Waste Monitor 2020, only 17.4% of global electronic waste was formally collected and recycled. Enterprises that actively contribute to

increasing this percentage are seen as industry leaders in sustainability [3, 580-589].

Communicating green values to consumers is just as important as implementing them. Eco-labeling, sustainability reports, and transparent environmental policies can significantly influence consumer behavior. As research shows, a growing number of consumers are willing to pay more for environmentally friendly products. For example, Sony's "Road to Zero" campaign emphasizes its commitment to reducing environmental impact across its product lines. By showcasing sustainability as a brand value, the company strengthens customer loyalty and enhances its market position. Moreover, green marketing is not only about product features. It involves engaging the audience through sustainability-focused content, partnerships with environmental organizations, and educational campaigns. This builds trust and distinguishes the brand in a crowded marketplace.

Adhering to international environmental standards and frameworks ensures not only regulatory compliance but also opens up global market opportunities. Certifications such as ISO 14001 (Environmental Management Systems), RoHS (Restriction of Hazardous Substances), and WEEE (Waste Electrical and Electronic Equipment Directive) are vital. Compliance demonstrates a company's commitment to sustainability and gives it a competitive edge when entering environmentally conscious markets, such as the European Union. For instance, many retailers in Europe only stock electronics that comply with stringent environmental regulations, making certification a market entry requirement rather than a choice. Furthermore, governments and regulatory bodies increasingly prioritize companies that align with sustainability goals in public tenders and funding opportunities. Therefore, meeting these standards can directly impact revenue streams.

Digital transformation plays a key role in enabling green innovation. Artificial Intelligence (AI), data analytics, and the Internet of Things (IoT) can optimize energy use, reduce waste, and improve supply chain efficiency. For example, predictive maintenance powered by AI helps prevent equipment breakdowns, reducing resource waste and improving operational efficiency. Similarly, IoT-enabled smart facilities can adjust lighting, heating, and cooling systems in real time, leading to significant energy savings. Moreover, AI-driven analytics can forecast viewer behavior, reducing unnecessary content production and energy-intensive transmissions. Netflix, for instance, uses AI to optimize content delivery networks, thereby reducing data load and associated carbon emissions. By integrating such technologies, TV enterprises not only reduce their

environmental impact but also gain a reputation for innovation, attracting tech-savvy and eco-conscious audiences.

Despite the clear benefits, the transition to green innovation is not without challenges. High initial investment costs, lack of technical expertise, and resistance to change can hinder progress. Moreover, measuring environmental impact accurately remains a complex task. Nevertheless, these challenges can be mitigated through government support, international collaboration, and industry-wide commitments. Joint ventures, green innovation clusters, and public-private partnerships can help share resources and knowledge. Enterprises must also foster a culture of sustainability by training employees, aligning incentives with environmental goals, and integrating sustainability into corporate strategy.

CONCLUSION

To conclude, green innovations are pivotal to enhancing the competitiveness of TV industry enterprises. From energy-efficient technologies and sustainable supply chains to renewable energy adoption and eco-conscious product design, the opportunities are manifold. Additionally, transparent green marketing, international certification, and digital solutions further support the transition to a more sustainable and competitive industry model. While challenges exist, they are far outweighed by the long-term benefits, including reduced operational costs, improved brand loyalty, regulatory compliance, and access to new markets. Ultimately, embracing green innovation is not just an ethical choice—it is a strategic necessity in the modern TV industry landscape. By staying ahead of environmental trends and embedding sustainability into their core business models, TV enterprises can secure a resilient and competitive future in a rapidly evolving global market.

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