

Over 7 in 10 organizations which have implemented sustainable product design have seen increased revenue growth, customer satisfaction and employee engagement

But just 22% of organizations have made sustainability a key component of their product design strategies

Paris, September 7, 2022 – Organizations must embed sustainability within their product-design processes if they are to meet net zero goals, particularly those tied to scope 3 emissions¹. According to the Capgemini Research Institute’s latest report, [“Rethink: Why sustainable product design is the need of the hour”**](#), 67% of organizations have seen a reduction in carbon emissions due to the implementation of sustainable product design strategies, while 73% have seen an improvement in revenue growth. The research points to a critical need to step-up action: organizations can begin by making sustainability a core strategic priority for product design teams.**

Design decisions have a profound impact on the environmental and social consequences of products. Some 80% of the environmental impact of products can be attributed to decisions made at the design stage². Crucially, sustainable product design is a key lever that can help organizations achieve the transition to net zero. Product emissions³ can account for a major share of organizations’ overall emissions and sustainable design strategies are vital to mitigate them. Yet just 22% of organizations have made sustainability a primary component of product design, and only around a quarter of organizations conduct regular environmental-impact⁴ (26%) and social-impact⁵ (25%) assessments when creating new products.

“In order to reach their carbon reduction targets and to deliver on overall sustainable development goals, organizations need to think beyond isolated design problems and consider the system as a whole, from the early stages of product design to selection of materials and end-of-life management. This necessitates a series of different approaches across the entire product lifecycle, including systems thinking, circular design thinking, and regenerative approaches,” said Roshan Gya, Global Head of Intelligent Industry at Capgemini. *“Organizations must also keep in mind that many sustainability initiatives are characterized*

¹ Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. The Greenhouse gas protocol initiative. (n.d.) Retrieved from https://ghgprotocol.org/sites/default/files/standards/Product-Life-Cycle-Accounting-Reporting-Standard_041613.pdf

² European Commission. (n.d.) “EU Science Hub.” Retrieved from <https://ec.europa.eu/jrc/en/research-topic/sustainable-product-policy>

³ Product emissions refers to emissions generated during a product’s lifecycle – i.e., across the stages of material acquisition and pre-processing, production, distribution and storage, use, and end-of-life treatment.

⁴ Environmental-impact assessments refer to Life Cycle Assessments (LCAs) comprising an analysis of all environmental impacts associated with a product throughout its lifecycle (e.g., carbon emissions, pollution, waste, loss of biodiversity, soil erosion/degradation).

⁵ Social-impact assessments refer to an analysis of all social impacts associated with a product throughout its lifecycle (e.g., forced labor, unsafe working conditions, discrimination based on gender).



by a short-term pain followed by long-term gain, such as up-front investments to avoid larger costs in the future.”

Regulatory pressure is a top motivator

The report found that the top motivator for 61% of the organizations currently adopting sustainable product design practices or planning to do so in the future is pressure from regulators. With regulation set to tighten in the future, including around product life extension and recycled materials used in products and or packaging, businesses that aren't already implementing sustainable design must reconsider in order to safeguard from the risk of future regulatory non-compliance.

Sustainable design does not always lead to increased cost

Sustainable design is often thought to be too expensive, and this perception represents a major roadblock for implementation. However, Capgemini found that, across all sectors, 23% of businesses which have implemented at least one sustainable design strategy have experienced a decrease in costs, while 37% of organizations say costs have remained the same.

Sustainable design practices provide a multitude of long-term benefits

According to the report, organizations must view investments in sustainable product design through a long-term lens. For many businesses, these investments are already paying off; of those organizations that reported an increase in costs, 51% say it has been outweighed by an increase in benefits. Organizations have experienced increased revenue growth (73%), improved customer satisfaction (70%), and improved employee engagement (79%) alongside carbon emissions reduction (67%).

Sustainable design also offers cost reduction opportunities across the value chain through strategies such as “dematerialization” and “lightweighting”, which aim to reduce the amount of materials used within a product. Other benefits include increased manufacturing efficiency, for instance, through lowering energy and water consumption and reducing assembly time; and lower transportation costs with optimized product and packaging design.

The report concludes by highlighting that to reap the benefits, businesses must make sustainability a core design priority and emphasize the need for systems change. Adopting a data-driven approach is critical and organizations must assess product impacts holistically – measuring environmental and social impacts across the product lifecycle. They must also collaborate with stakeholders across the value chain to jointly determine sustainable design decisions, based on impact and feasibility, and invest in partnerships to build new competencies. Investment is also needed in services to facilitate product life extension and end-of-life management, close the loop of product and material flows and ensure that products are truly sustainable throughout their lifecycle. Additionally, advances in technology are opening up numerous opportunities for sustainable product design, and organizations must ensure that they utilize technology more efficiently and extensively to support their sustainable product design initiatives.

Methodology

The Capgemini Research Institute surveyed 900 senior product design and engineering executives from large organizations across industries including consumer products, automotive, industrial manufacturing, aerospace and defense, high-tech, and medical devices, in April-May 2022. 15 senior industry executives and academics were also interviewed. In this report, the Capgemini Research Institute focused on



organizations that principally manufacture physical products. Some of these products may incorporate software elements or have accompanying apps. Therefore, sustainable product design strategies for digital products are also covered.

For more information or to download the report, visit: <https://www.capgemini.com/insights/research-library/sustainable-product-design/>

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