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Nike: Sustainability and Innovation through Flyknit Technology

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Sustainability and Innovation Case Study
Nike Flyknit

The Challenge

Reaching over $30 billion in revenues for FY15, Nike, Inc. is the world's largest supplier of athletic footwear and apparel.[1] Since its founding, Nike's business model has focused on innovation and pushing the boundaries of design and performance.

Athletes challenged Nike to design the ultimate fit—a shoe that felt like a sock but provided necessary support for high performance. Because sustainability is embedded in Nike's innovation process, designers had to consider solutions that would meet performance goals of athletes while addressing social and environmental criteria. To address this challenge, Nike had to rethink the entire footwear production process.

Strategy

Nike's corporate responsibility and sustainability strategy dates back to the 1990s when the company faced widespread public criticism over labor practices in contract factories. In response to a threatened brand, Nike developed a corporate responsibility division that mainly focused on improving factory working conditions and reducing the environmental footprint of manufacturing. Since 2009, Nike's strategy has evolved to integrate corporate responsibility throughout all business facets, driven by the "Sustainable Business and Innovation" team.[2]

Based on an extensive evaluation of their impacts across the value chain, Nike found that materials and manufacturing have the greatest impact on the environment, workers, and communities they operate in, and therefore make these areas central to their sustainable innovation strategy.[3] Because it is challenging to influence the behavior of other players in the value chain, Nike focuses their sustainability efforts in the design phase, as the decisions they make there determine a large part of the product's environmental impacts down the line. Product designers are given scoring tools using the Nike Materials Sustainability Index to help inform decisions about materials based on sustainability and performance, mainly aiming to reduce waste and choosing more sustainable materials. Furthering their efforts to streamline sustainable innovation throughout the company, Nike embedded the Sustainable Business & Innovation division into the company's Innovation Group in 2013.[4]

The Flyknit running shoe is the physical embodiment of Nike's vision to develop products where "sustainability [is] synonymous with performance."[5] While Nike has made incremental change in materials and manufacturing for many years, the launch of Flyknit in

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[1] (Brettman)
[2] (Paine, Hsieh and Adamsons)
[3] (Nike)
[4] (Nike)
[5] (Paine, Hsieh and Adamsons, pg. 3)

2012 was a fundamental breakthrough in sustainable innovation. Designers, programmers, engineers, and athletes joined together at Nike's Innovation Kitchen to develop a shoe that would meet runners' demands for a more comfortable, high performing sneaker while simultaneously reducing manufacturing waste. Nike spent over 10 years[6] and produced nearly 200 prototypes of the shoe. The process required not only rethinking the design, but the entire process of manufacturing shoes, which required inventing new machinery and software. While sneakers are traditionally made by gluing and stitching multiple pieces of material together, Nike developed a method to use one continuous thread woven into a lightweight shoe that would allow for more breathability and support and adapt to a foot in motion.[7]

Impact

Nike's Flyknit shoe is the most groundbreaking sneaker innovation in over 40 years. The revolutionary method of manufacturing enables Nike to create shoes that excel in performance while reducing the amount of materials used and cutting waste by 80%.[8] While conventional shoe production requires cutting and sewing multiple materials together, sometimes flying them around the world to add different pieces and often leaving leftover scraps, the Flyknit process weaves knit strands of yarn together to form one seamless upper. The process allows for engineering down to the millimeter and dramatically decreases waste by using only what is needed. Nike has saved 3.5 million pounds of waste since Flyknit's launch and diverted 182 million plastic bottles from landfills by switching to recycled polyester in all Nike Flyknit shoes.[9]

Beyond reducing waste, Flyknit shoes are perhaps the highest performing shoe that Nike has ever made. Flyknit shoes are 19% lighter than Nike's lightest long distance model, saving runners the equivalent of the weight of a car over the course of a marathon. Nike has since applied the manufacturing method to other shoe lines, including training, soccer, basketball, golf, and lifestyle, producing 28 models and reaching 500 global Flyknit-related patents for technology and design.[10] While they do not release public information about the brand specifically, it is estimated that Flyknit shoe sales are roughly a billion dollars.[11]

Lessons Learned

By integrating sustainability into the innovation process, Nike not only produced one of their highest performing shoes, but developed an entirely new way of manufacturing footwear. Flyknit's disruptive technology demonstrates the importance of integrating sustainability into the innovation process to turn social and environmental risks from challenges to business opportunities. For example, by applying a sustainability lens, companies can view constrained resources as impetus to use more recycled and sustainable materials, create leaner manufacturing processes, and increase supply chain

[6] (Four Years of Nike Flyknit)

[7] (Nike)

[8] (Nike)

[9] (Four Years of Nike Flyknit)

[10] (Four Years of Nike Flyknit)

[11] (Williams)

efficiency. Flyknit provides just one example of how Nike is driving profitable growth and reducing risk through sustainable innovation.

References

Brettman, Allan. Nike hits $30 billion in revenue for fiscal year 2015. 15 June 2015. <http://www.oregonlive.com/playbooks-profits/index.ssf/2015/06/post_58.html>.

Four Years of Nike Flyknit. 21 February 2016. <http://news.nike.com/news/four-years-of-nike-flyknit>.

Nike. Nike CR Report. <http://www.nikeresponsibility.com/report/content/chapter/our-sustainability-strategy>.

Paine, Lynn, Nien-he Hsieh and Lara Adamsons. "Governance and Sustainability at Nike." (2013).

Williams, Freya. Green Giants. American Management Association, 2015.

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