

Module 4: No Limit Shoes

Derian Pryce

CUNY/NYC College of Technology

BUF 4700: Contemporary Issues in Fashion

Dr. Nazanin Munroe

December 14, 2020,

Abstract

In this paper I will be presenting my product the “No Limit Shoes”. I am planning on developing a product that will revolutionize the way we think about approaching inclement weather. This product will make dealing with inclement weather an infinitely easier situation, I present to you a sneaker that uses built in technology to alter the grips of the sole to replicate the footholds and security of a boot walking on snow/ice or the height to walk through a puddle with ease without worrying about dampening your socks or pants. This concept will be achieved through the same technology that Nike uses to electronically alter their sneakers lacing but instead with an expansion and constriction of a metal sneaker sole bottom. With the touch of an app, you can select which part of the sole can either retract or expand giving you height or a shape of grip at the bottom of your sole to shape and mold to your environment with the press of a button. There is No Limit to the amount of versatility this product provides, it is a unisex product meaning that it will be available to everyone and even if there is no inclement weather to combat you could simply activate the soles to give your height a little boost with no risk or detriment to yourself. Talk about “getting one over” on the competition with the No Limit Shoes you will be two steps ahead and above all of your friends.

What is the No Limit Shoe?

Originally, Sneakers were created as a tool primarily designed for use in sports and other forms of physical activities. They were used as a way to increase performance in an area that humans could not normally function at an optimal level using shoes or their own bare feet. After many years of developing and working on different ways to create and provide different uses for shoes. Shoes have become a staple in today's society we use them to walk outside everyday casually, perform specialized physical activities such as running or playing basketball, some people even wear shoes in their home to keep their feet

comfortable on the floor or just to take pictures in for their

social media communities. With this product, the "No Limit Shoes" I would like to expand on the roots for the technical use for sneakers while fusing the community building and comfortability aspect of them. This concept will be achieved through the same technology that Nike uses to electronically alter their sneakers lacing but instead with an expansion and constriction of a metal sneaker sole bottom. With the touch of an app, you can select which part of the sole can either retract or expand giving you height or a shape of grip at the bottom of your sole to shape and mold to your environment with the press of a button. If you are not familiar with this technology, I will provide a brief explanation of what technology is used and how it

works. Firstly, in order for this product to begin function a

MEMs (*Nike FAQ 2020*) or (microelectromechanical system) needs to be implicated into the shoe. This chip can detect motion and orientation of the shoe which will determine what shape the sole will take while under your feet. These sensors will also provide use with the information needed to create an adaptive



Figure 1 M4 Processor

<https://www.electronics-lab.com/max32670-high-reliability-ultra-low-power-microcontroller-powered-by-arm-cortex-m4-processor/>

Figure 2 Worm Gearing

<https://framo-morat.com/products/worm-gear-sets/>



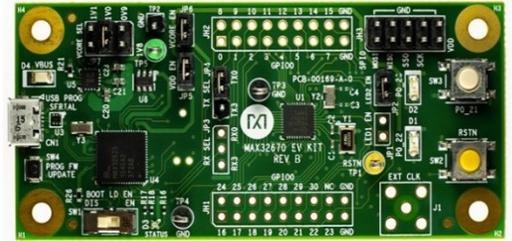
Figure 3 MEMs Chip

<http://www.jewellinstruments.com/how-does-a-mems-sensor-work/>

experience for the customer over time. Next a high-power cortex M4 processor (Nike FAQ 2020) is



needed to manage coordinating the motor movements, sensors and any other communications and computations. Simply put M4 Processors are hidden inside of other chips in order to manage power and other regulate the operation of other complex pieces of technology that may be used, the final and possibly most important piece to make the shoe be able to push and retract parts of the



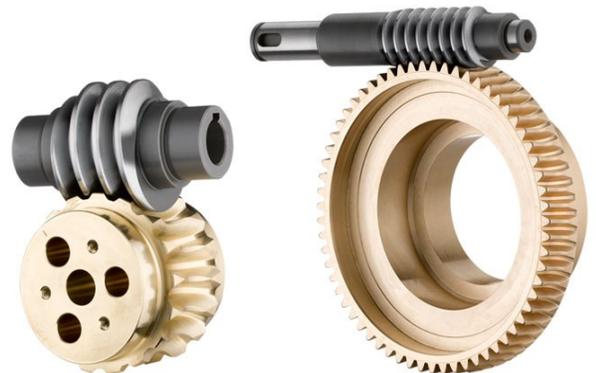
sole to create different grips are the high loading worm gearing (Nike FAQ 2020). This is the final gear ratio designed to help generate large pull and push forces. This will allow the sole of the shoe to be pushed/pulled and self-locked so that the sole of the shoe is retained preventing any

accidental shifts in movement, grip, or height on the wearer. A worm drive can reduce rotational speed or transmit higher torque so the transition from

different soles can be smooth and as comfortable as wearing the shoe itself. Some other technologies that

would be introduced but do not need much of an explanation would be “Bluetooth low energy” which is

essentially a hotspot that enables the connection of a



mobile device for interaction with the shoe such as battery life and custom settings/updates to the shoe’s firmware also the 8MB flash memory card for simple storing of firmware upgrades sole shifting diagnostics and any potential technology that may be implemented for the shoe. Lastly the wireless charging area and pad that will allow you to have more freedom as to where you store and how you position your shoes for charging and allows us to create an extra layer between your feet and the mechanical coils between the soles.

SWOT Analysis

Analysis of Strengths and Weaknesses:

Over the years there has been a clear increase of how much technology is being created and implemented into fashion the strengths of this product lie in its adaptability in the face of inclement weather and the ease of use when it comes to actually applying the technology our shoe will provide. The only thing that the consumer/wearer of the shoe will have to do is select the style of sole they are going with (using the app) and proceed with their journey. This also makes the usual struggle of finding the correct pair of sneakers to wear for the day a cinch as well as you do not have to worry if it will rain/snow or if there is black ice or a dirty puddle on the floor the different applications for the soles will account for that with the push of a button. Adding on to the ease of use since the product is Unisex the sizing of the shoes will be relatively easy to gauge when attempting to purchase the No Limit shoe as opposed to splitting sizes into very confusing conversion rates like “Woman’s 8” and “Men’s 8”. Admittedly the weaknesses of our product will only be present in the pricing of our shoe, since there is a lot of innovative and effective technology being implemented into our shoe as well as high quality materials both in a fabric and mechanical sense it is clear that the pricing of the shoe will be relatively high in order to reflect the usefulness while maintaining the economic integrity of our company. Any problems or technical difficulties had by a customer of the No Limit Shoe will be addressed and handled free of charge. Since the technology has already been utilized by companies and has been researched and studied beforehand, we can ensure that our processes and technologies will be top quality.

Opportunity

I believe that this product has the biggest opportunity than any other fashion product in the market currently. With this product success it would eliminate the reason for other shoes in the category to not be able to alter their soles or perhaps other portions of the shoes in order to perform more and add on to the experience of wearing shoes especially if the design of the sneaker is created with a stylish silhouette in mind.

Threats

Since there are no products that take to the same level of innovation as the No Limit Shoe the threats would most likely come in the form of production and the attaining of materials to create the shoes. Possibly a limitation of the number of pairs that could be released would also prove to be a challenging obstacle this is directly related to the weakness of the pricing being higher than what most people will be able to purchase a pair of sneakers for although this sneaker is not meant to be owned multiple times by the same person.

Cost & Demographic

Directly related to the threats and weaknesses section of this paper the cost of the No Limit Shoes will approximately be priced similarly to the Nike “HyperAdapt” which retailed for \$720 dollars back in 2017 since these two products will share a lot of the same technology used in the No Limit Shoes creation and receive versions of the sneaker with less features that will retail for less to reach the market of individuals who cannot afford the \$720+ price tag. As for the demographics that we will be focusing using the Claritas segments as a benchmark we are targeting the “Young Digerati”, “Movers & Shakers” and “The Cosmopolitans” (*PRIZM® PREMIER*, 2020) groups. The common theme within these groups is that they are within the age of

24-64yrs living with an upscale to wealthy income level making above \$80,000 as a median with above graduate education parameters. Generally, this demographic has a family mix but most of the people that fall within these categories do not have kids and own a car/house.

Scalability

I believe that this idea has a very large margin it could be scaled up too an exorbitant proportion, the reason why is because the idea that I am presenting can be applied to more than just clothes. This idea simply the amalgamation of what it is to take one technology that has already been created and find ways to make it work with things that we never would have imagined creating, first it's a design on a shoe then it's a home interior or exterior application to a house or coating for an appliance or an accessory like an umbrella. Because the idea is so simple the levels as to which it can scale are only limited to the creativity of those that will experience the technology and attempt to expand on it further. As for prototyping the product utilizing a service similar to AFFOA would be the most ideal for getting the idea turned into an actual product in the mit.edu article in this semester reading mentions that "A key element in the center's approach is to develop the technology infrastructure for advanced, internet-connected fabric products that enable new business models for the fabric industry" (David L. Chandler | MIT News Office). This simplifies the struggle of trying to get an innovated project worked on as the company provides a lot of utility for people that do not already have big businesses backing the project. Making a prototype would most likely be the hardest part of the process in comparison to making the product mass producible in the future. CREOL, The College of Optics & Photonics at The University of Central Florida (UCF) developed an active user color changing fabric that could make the designing of a multitude of products easier than it has ever been the article says that it "allows the user to control both when the color change happens and what pattern to appear on the fabric" (IDTechEx, 2018). A technique known as fiber-spinning allows for this technology to be usable and recreated at a mass production level.



Fair Trade

Making a product of this caliber would definitely decrease the number of profits made without sweatshop labor but it is very possible to sell a product like the No Limit shoes without utilizing sweatshop labor. I would produce a profitable product without sweatshop labor by creating the product myself in the beginning in order to get a feel for how expensive the cost for the material is and how much work it takes to put it together and after creating a beta version I would outsource the work to companies like AFFOA or a small company that abides by the Fair Labor Standards Act of 1938. Needless to say, even companies like “Nike” have been exposed for having sweatshop scandals and violations but countries like Bangladesh relies heavily on outsourced apparel manufacturing for the well-being of its citizens. According to (Ch.9: CSR and Sweatshops) “Clothing factories employ over 3 million Bangladeshi citizens and the country obtains nearly 80% of its export earnings from the apparel sector” This means that while the overall opinion of sweatshops from an ethical standpoint of non-business owners is normally rooted in negative opinions there are some compelling reasons as to why they are not always a bad thing but also why a lot of companies choose to continue to use them. Not using sweatshop labor increases the cost of the product due to the rise in cost of labor but I do not feel as if this will deter the demographic from buying the product because if the affluent people that purchase Nike products continue to support them although the prices are high, and they also use sweatshop labor there would be little to no reason to make the price of the No Limit Shoe be Illegitimate in comparison.

References

David L. Chandler | MIT News Office. (n.d.). AFFOA launches state-of-the-art facility for prototyping advanced fabrics. Retrieved December 14, 2020, from <https://news.mit.edu/2017/affoa-launches-state-art-facility-prototyping-advanced-fabrics-0619>

GET HELP NIKE FAQ. (n.d.). Retrieved December 14, 2020, from <https://www.nike.com/help/a/adapt-engine-components>

IDTechEx. (2018, May 24). Active, user-controlled color-changing fabric. Retrieved December 14, 2020, from <https://www.wearabletechnologyinsights.com/articles/14373/active-user-controlled-color-changing-fabric>

Image (#1) (n.d.). Retrieved December 14, 2020, from <http://www.jewellinstruments.com/how-does-a-mems-sensor-work/>

Jimenez, G., & Pulos, E. (n.d.). 9. CSR and Sweatshops. Retrieved September 13, 2020, from <https://milnepublishing.geneseo.edu/good-corporation-bad-corporation/chapter/9-csr-and-sweatshops/>

MAX32670 - High Reliability, Ultra-Low Power Microcontroller Powered by Arm Cortex M4 Processor. (2020, August 21). Retrieved December 14, 2020, from <https://www.electronicslab.com/max32670-high-reliability-ultra-low-power-microcontroller-powered-by-arm-cortex-m4-processor/>

PRIZM® PREMIER. (n.d.). Retrieved December 14, 2020, from <https://claritas360.claritas.com/mybestsegments/>

Worm gear sets. (n.d.). Retrieved December 14, 2020, from <https://framorat.com/products/worm-gear-sets/>