

# NANO FIT NEO

## 1. Executive Summary

"Nano Fit NEO" is a setup fashion that is suitable for sports, and everyday life. This product resolves global issues of global warming by carbon dioxide emissions, and skin cancer by excessive UV radiation by using nanotechnology. This creates a better society for the future generations as it approaches to resolution on health, and environment, which is crucial in today's society.

For the exhibition, the focus will be on blocking UV radiation, by opening an activity that entertains elementary students, junior high school students, and high school students. This is toward temporary entertainment, but also presents the comfort of the product.

## 2. Our Mission

Our mission is to reduce the possibility of getting skin cancers decrease 80%. The skin cancer is cumulative, and should be prevented from a younger age. Additionally, the usage of air conditioner should be reduced to 40% since the air conditioner emits massive carbon dioxide that foster global warming. Moreover, the carbon dioxide emission should start to decrease after "Nano Fit NEO" is published. Ultimately, it will allow people to be healthy, and be eco-friendly. For the activity, our mission is to ultimately allow the customer to buy the product by targeting younger people.

## 3. Our Product / Service

We aim to provide the audience with an immersive, yet fresh, exciting, and engaging experience through our exhibit at the Osaka Expo. In order to accomplish this, we will use or nanotechnology to construct an immersive experience close to an airsoft game experience. After the participants pay the fee, they will be provided with eye protection glasses to prevent unwanted UV side effects, a gun-shaped UV light emitter (Figure 3), and our product, "Nano Fit NEO" (Figure 4) which holds two significant features. Firstly, when the "Nano Fit NEO" is exposed to UV light, it will react with the dye and change color. Thus, when a player is shot, the clothing will present where they were shot by making it stand out by presenting



Figure 3: Okada and Ehara, UV Gun Provided to the Users



Figure 4: Ehara and Okada, UV Example designs of "Nano Fit NEO"

## 4. Market Analysis

The current state of the textile industry is in a slump, however, our innovative textile can aid this slump with its insulated nanotechnology. Our target market is athletes and health-conscious consumers, especially marketed towards the younger generation of teenagers and young children around the ages 7-16 to inspire them with a new style of fashion. In this market, our top competitors are Nike and Adidas, however our technology strikes as the UV-blocking function, and its temperature regulator, with eco-friendly properties. Consumers who are conscious about their health especially need this UV protection, to reduce skin cancer risks and its heat regulator reducing heat strokes. Currently, 48% of men and 77.2% of women

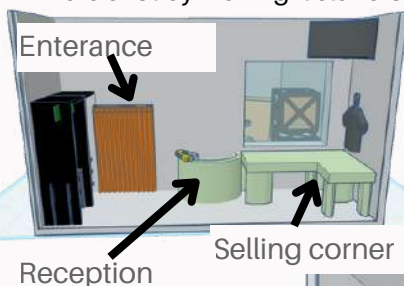
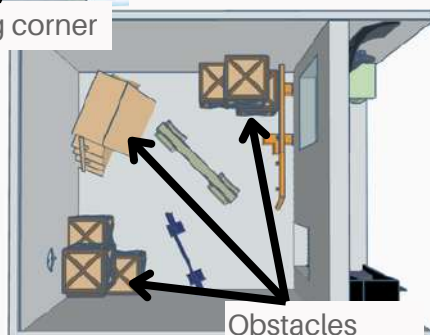


Figure 1: Layout of the reception/entrance of the pavilion

Figure 2: Birds eye view of the pavilion



put sunscreen in Japan [2]. This exemplifies that Japanese people are highly conscious of the risks of UV radiation, therefore, this product can promote reducing UV radiation. Moreover, children in schools are often in risk of heat strokes during the summer, even in indoors. However, with our product, we can reduce the risks of heat strokes. Our company Nano Fit uses the D2C method which offers the product directly to our customers. Our main source of marketing is for our consumers to wear our products during the Osaka expo and also make connections to influencers posting our products on TikTok, Instagram, and X.

## 5. Finance

Year	1	2	3
Price (Nano Fit Neo tops)	\$70	\$70	\$70
Price (Nano Fit Neo bottoms)	\$60	\$60	\$60
Price (Nano Fit Neo setup)	\$120	\$120	\$120
Total number of design 1 sold	25000	72500	232000
Total number of design 2 sold	25000	72500	232000
Total number of design 3 sold	50000	145000	464000
Total number sold	100000	290000	928000
Price per shooting game	\$10	\$0	\$0
Total number of participants of the shooting game	170000	0	0
Total interested consumer	20000000	20000000	20000000
Market penetration rate	0.5%	1.45%	4.64%
<b>Gross profit</b>	<b>\$10950000</b>	<b>\$2682500</b>	<b>\$85840000</b>
<b>Recurring Costs</b>			
Total number of factory employees	40	50	50
Number of factory engineer	7	7	7
Number of designers	3	3	3
Factory employment costs (annual)	\$30000	\$30000	\$35000
Factory engineer costs (annual)	\$70000	\$70000	\$75000
Designer costs (annual)	\$60000	\$60000	\$65000
Assembly machinery cost	\$500000	\$0	\$0
Factory maintenance	\$1000	\$50000	\$50000
Sales & Marketing	\$1667500	\$525563	\$1682000
Market research	\$50000	\$40000	\$30000
Corporate social responsibility	\$150000	\$150000	\$150000
Amount of Silica	40t	116t	371t
Cost of Silica per metric ton	\$105	\$105	\$105
Cost of Silica(40%)	\$4200	\$12180	\$38955
Amount of Cotton	25t	72.5	232t
Cost of Cotton per metric ton	\$365	\$365	\$365
Cost of Cotton(25%)	\$9125	\$26463	\$84680
Amount of Titanium dioxide	35t	100t	325t
Cost of Titanium Dioxide per metric ton	\$1400	\$1400	\$1400
Cost of Titanium dioxide(35%)	\$49000	\$140000	\$455000
Amount of Photocromyc dye	50t	75t	100t
Cost of Photocromyc dye per metric ton	\$2500	\$2500	\$2500
The total cost of photochromic dye	\$125000	\$187500	\$250000
Utility	\$500000	\$500000	\$500000
<b>Money used</b>	<b>\$4925825</b>	<b>\$3801706</b>	<b>\$5710635</b>

Net Profit			
Profit before tax	\$6024175	\$23023294	\$80129365
Tax rate	23%	23%	23%
Total tax paid	\$1385560	\$5295357	\$18429754
<b>Net profit</b>	<b>\$9564440</b>	<b>\$17727936</b>	<b>\$61699611</b>

- Nano Fit offers two core products: the Nano Fit Neo Tops and Nano Fit Neo Bottoms, along with a bundled set, the Nano Fit Neo Setup. The pricing structure is as follows:
  - Nano Fit Neo Tops: \$70
  - Nano Fit Neo Bottoms: \$60
  - Nano Fit Neo Setup (tops and bottoms combined): \$120
- The target market for Nano Fit is based on the estimated 24.7 million visitors [3] expected at the Osaka Expo. Given the platform's strong appeal and initial market penetration strategy, we project total sales of 100,000 units (including all product variations) at launch, translating to a 0.5% market penetration rate. Sales are expected to grow exponentially over time as brand awareness increases.
- Additionally, in the first year, the company will generate supplementary revenue from a shooting game experience offered at the Osaka Expo, designed as an interactive product showcase. This revenue stream will be exclusive to the initial year and will not continue beyond the Expo. However, due to the income generated from this promotional activity, we anticipate achieving profitability within the first year of operations.
- The business requires an initial investment of \$4,925,825, with a targeted Return on investment (ROI) of 34%, allowing for full repayment within three years. This financial model is structured to support sustainable growth, ensuring long-term profitability and scalability.

## 6. Reference

[1]<https://pmc.ncbi.nlm.nih.gov/articles/PMC10323082/>

[2]<https://lab.testee.co/sunscreen-2024/#:~:text=%E3%81%AA%E3%81%84%E3%82%88%E3%81%86%E3%81%A7%E3%81%99%E3%80%82-,%E6%97%A5%E7%84%BC%E3%81%91%E6%AD%A2%E3%82%81%E5%88%A9%E7%94%A8%E7%8E%87%E3%81%A8%E5%88%A9%E7%94%A8%E9%A0%BB%E5%BA%A6,%E9%AB%98%E3%81%84%E3%81%93%E3%81%A8%E3%81%8C%E5%88%86%E3%81%8B%E3%82%8A%E3%81%BE%E3%81%99%E3%80%82>

[3][https://www.expo2025.or.jp/wp-content/uploads/221017\\_raizyousyayusougutaihousin.pdf](https://www.expo2025.or.jp/wp-content/uploads/221017_raizyousyayusougutaihousin.pdf)