

**Nailiva**

**Beauty, Health, from Fingertips to Heart**

# **Business Plan**

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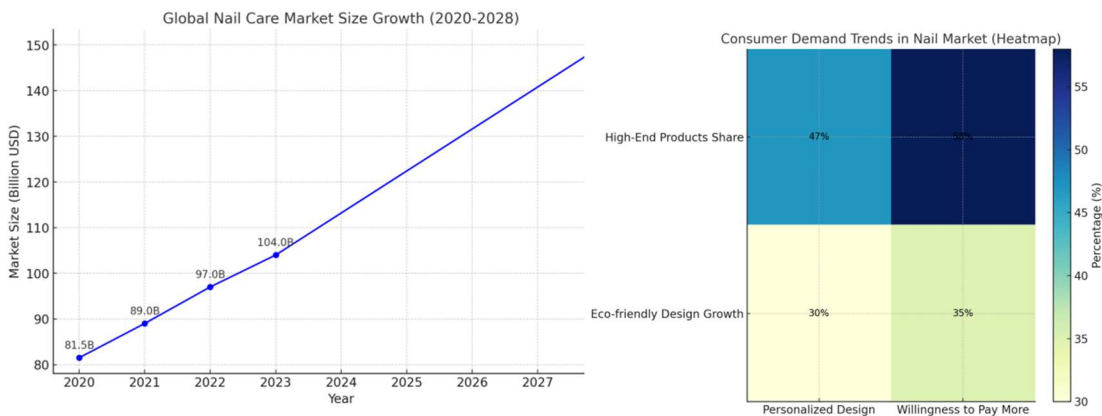
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## I. Brand Story

**Nailiva: Beauty, health, from fingertips to heart.**

Nailiva was born at the intersection of biotechnology and art, upholding the philosophy of "health, beauty, and environmental protection." We are dedicated to providing each consumer with **a unique nail art experience**. Through advanced bioengineering technology and personalized customization services, Nailiva transforms fingertips into a canvas of life. Here, nail art is not just a decoration; it is a healthy expression and a medium of art. Nailiva believes that **the beauty of every user is a perfect combination of nature and technology**.

## II. Market Trends

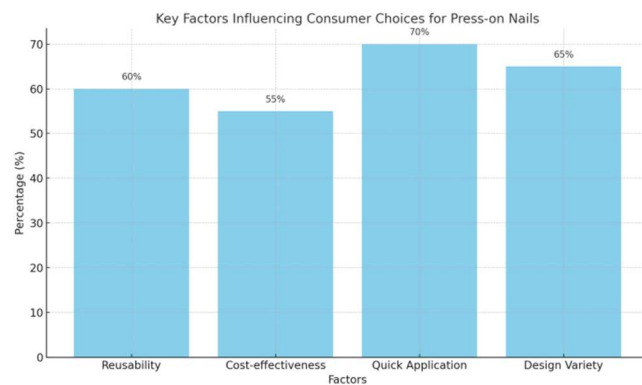


In recent years, the nail art market has shown **a continuous growth trend**. According to data platforms such as Statista and Grand View Research, the global nail market has been expanding steadily due to rising demands for fashion and personal care. The global nail market size was approximately \$8.15 billion in 2020, growing to \$8.9 billion in 2021, reaching \$9.7 billion in 2022, and hitting \$10.4 billion in 2023. It is projected that by 2028, the market will exceed \$15 billion, with a compound annual growth rate (CAGR) expected to be between 5.5% and 6%. This indicates that the nail industry has entered a golden era and will continue to thrive.

As Generation Z gradually becomes the main consumer force in the market, the demand for nail art is shifting toward **personalization and premium offerings**. Consumers not only focus on the aesthetic appeal of nail art but are also increasingly concerned about product quality, design, and customization services. According to a report by GlobalData, approximately 47% of Generation Z consumers prefer brands that offer personalized nail design, and 58% are willing to pay a higher price for unique, customized designs. Meanwhile, **the demand for high-end nail products** is significantly increasing, with expectations that by 2025, high-end nail products will account for over 30% of the global market share. Additionally, the demand for environmentally friendly, beauty-health-oriented, and high-end handcrafted designs has increased by 35% in recent years.

It is also worth noting that **press-on nails** have gained popularity as a convenient and cost-effective nail art option. Their reusability, affordability, versatility in matching different outfits, and short application and removal times make them increasingly favored in the market. When purchasing press-on nails, consumers primarily focus on quality, design, and ease of

wear. Market data shows that 60% of consumers choose press-on nails for their reusability, 55% for their cost-effectiveness, 70% for their convenience, and 65% for their variety of styles.



Furthermore, the traditional production process for nail products involves extracting proteins directly from shellfish. The commercialization of marine organisms increasingly raises concerns regarding animal rights. More and more consumers are paying attention to animal protection and cruelty-free beauty products, and traditional methods of extracting protein from shellfish are facing ethical challenges and market resistance.

### III. Existing Pain Points

#### 1. Health Risks for Nail Salon Users and Workers

The widespread use of various harmful chemicals in nail products poses a serious threat to the health of both users and nail salon workers.

Formaldehyde, used as a hardener, has been confirmed to be carcinogenic and may lead to respiratory diseases and skin allergic reactions. According to research by the Occupational Safety and Health Administration (OSHA), some nail products contain formaldehyde levels that exceed safety standards, especially in enclosed nail salons, where the concentration of formaldehyde in the air can be several times higher than in typical indoor environments.

Toluene, used as a solvent, can adversely affect the central nervous system with long-term exposure, leading to symptoms like headaches, dizziness, and nausea, and may even cause liver and kidney damage. A study by the California Air Resources Board (CARB) found that over 50% of nail products contain toluene, and nail technicians exposed to high concentrations of toluene have a 20% higher risk of developing respiratory diseases compared to the general population.

Additionally, phthalates, used as plasticizers, are endocrine disruptors that may adversely affect reproductive health and fetal neurological development. A 2015 study showed that prolonged exposure to nail products containing phthalates significantly increased the concentration of these substances in the body, with over 70% of nail polishes containing phthalates. Benzene, a known carcinogen, can cause blood disorders such as leukemia with

long-term exposure. According to reports from the Food and Drug Administration (FDA), about 10% of low-quality nail products tested positive for benzene, further increasing health risks for consumers.

The solvents, nail polishes, acrylics, and glues used in nail processes can irritate the skin and eyes after evaporation, leading to redness, itching, eye discomfort, or inflammation. Prolonged exposure to strong chemical odors can cause nail technicians to experience headaches, dizziness, and a gradual loss of smell. Long-term inhalation of these chemicals may also result in respiratory irritation, chronic cough, asthma, and decreased lung function. Research from the National Institute for Occupational Safety and Health (NIOSH) indicates that over 70% of nail technicians report respiratory issues, eye irritation, and skin allergy symptoms at work.

A CARB survey further indicates that long-term exposure to volatile organic compounds (VOCs) in nail products increases the risk of asthma and other respiratory diseases for nail technicians by 20% compared to the general population. The Environmental Protection Agency (EPA) also notes that prolonged exposure to high concentrations of VOCs can trigger acute poisoning reactions, while the concentrations of toluene and ethyl acetate in nail salons often exceed safety standards, directly correlating with the occurrence of neurological diseases. VOCs are commonly found in nail products and cleaning agents, especially in poorly ventilated nail salons, where these chemicals easily evaporate, leading to acute symptoms such as headaches, nausea, cough, and eye discomfort. Long-term inhalation may cause severe damage to the liver, kidneys, and central nervous system, and may even increase the risk of cancer and neurological diseases.

## 2. Environmental Destruction and Animal Cruelty

The traditional nail industry has long had a significant negative impact on the environment, particularly concerning the use and disposal of chemical materials. Common harmful chemicals in traditional nail products, such as formaldehyde, toluene, and phthalates, are not only harmful to human health but also cause long-term pollution to the environment. These chemicals used during the nail process are often difficult to degrade, and once they enter the soil or water, they can harm ecosystems, leading to water pollution and the destruction of the food chain. Furthermore, plastic products used in traditional nail care, such as nail stickers and tools, are often non-recyclable, contributing to a significant amount of solid waste and exacerbating the global plastic pollution crisis.

Foot silk protein is a natural adhesive material found in the foot of scallops, helping them adhere to hard surfaces. In traditional extraction methods, a large number of scallops are needed to obtain sufficient foot silk protein. This practice results in the large-scale harvesting of scallops, which damages marine ecosystems. Additionally, this method is time-consuming and labor-intensive, making it difficult to produce on a large scale.

### 3. The time cost of nail services is high

Nail Service Type	Description	Estimated Time
Basic Styles	Simple single-color polish or basic nail trimming, usually completed within 30 minutes to 1 hour.	30 minutes to 1 hour
Complex Styles & Detailed Service	Services requiring intricate designs like carvings, gradients, glitter, or 3D decorations. Takes 1-2+ hours. 1	1 to 2+ hours
Extended Waiting Time	Additional waiting time for products like gel nails or UV gel polish that need to cure under UV light, extending the total time.	Additional time for curing

Time cost in nail services

The time cost of nail services has become a key consideration for consumers when choosing nail care. In today's fast-paced life, many consumers want to receive high-quality nail services in the shortest amount of time possible. However, intricate nail styles and delicate designs often require extended periods, which not only challenge consumers' schedules but also increase the time and labor costs for service providers. According to a report by the market research firm Mintel, over 60% of nail service consumers indicated that the time-consuming nature of nail services affects their choices, particularly with complex designs and elaborate nail art. Additionally, about 45% of consumers prefer basic nail services or quick manicure options that take less time.

Customer satisfaction depends not only on the quality of the nail service but also on the duration of the service. Research from Nail Magazine shows that over 35% of respondents stated that their overall satisfaction would decline if a nail service took too long without prior notification of the time involved. To address this issue, some nail salons have begun adopting technologies like smart nail machines to shorten service times. For example, ManiMe has launched customized press-on nail products that allow users to quickly apply nail designs at home, completing the entire process in just 10 to 15 minutes, significantly reducing the time cost.

## IV. Core Selling Points

### 1. Healthy and Eco-Friendly Nail Products

**Innovative Application of Eco-Friendly Materials:** Nailiva uses a hybrid protein hydrogel based on mussel protein adhesive produced by engineered bacteria as an adhesion layer. This material is harmless to nails and skin, contributing to environmental protection. This natural and

eco-friendly ingredient replaces traditional nail base gels, reducing threats to human health and the environment during the nail application process.

**Rejecting Harmful Ingredients:** Nailiva strictly avoids using harmful chemicals like formaldehyde and toluene, ensuring that every nail product is a safe and healthy choice. We hope that every nail treatment can provide consumers with a sense of peace of mind, free from concerns about damage to their skin and nails.

**Combining Care and Maintenance:** Our products not only beautify nails but also provide health care benefits through ingredients like metronidazole (to prevent nail fungus) and hyaluronic acid (to moisturize nails), allowing beauty and health to coexist.

**Durability of Products:** The adhesion layer hydrogel is a more moisture-sticky and less prone to peeling option compared to traditional jelly gels.

## 2. Highly Customized Services

**In-Depth Insight into User Needs:** Nailiva focuses on the personalized needs of each customer, offering various product choices that reflect individual preferences, from nail condition and skin tone to profession and personal taste, creating customized nail solutions unique to each client. We provide not just nail services, but also help each customer express their unique self.

**Combining Personalized Design with Bio-Art:** Nailiva empowers each creation with unique artistic value through custom nail designs. Whether it's color combinations or pattern designs, our nails are not just adornments but also a form of artistic expression.

**Intelligent Nail Experience:** By integrating 3D printing and AR try-on technology, we offer customers an intuitive and convenient nail customization service. Through a virtual try-on system, clients can preview the effects of different designs in real-time, ensuring each nail art perfectly aligns with their aesthetics and needs.

## 3. Showcasing the Colors of Life

**No Animal Cruelty:** Unlike the traditional production process that directly extracts proteins from scallops, Nailiva utilizes a hybrid protein hydrogel based on mussel protein adhesive produced by engineered bacteria, eliminating excessive reliance on marine biological resources and avoiding any direct harm to animals. Nailiva addresses the ethical issues associated with animal testing and the use of animal-derived ingredients in traditional nail products, genuinely realizing a commitment to cruelty-free practices. This not only aligns with the growing awareness of animal rights among modern consumers but also provides a more ethical and responsible choice for environmental protection and sustainable development.

**Combining Bio-Art and Technology:** Nailiva achieves natural color expression through engineered bacteria technology, allowing every color to showcase the vitality of life. We are not just a nail



company; we are creators who integrate bio-art into everyday life, giving nails unique artistic value.

**Bio-Safety Assurance:** We ensure that every color generated undergoes strict sterilization to guarantee consumer health and safety. Nailiva cares not only about beauty but also about the health of each user.

## V. User Profiles

### 1. Eco-Friendly and Health-Conscious Nail Consumers

**Age Range:** 25-40 years

**Occupation:** White-collar workers, teachers, freelancers

**Interests:** Yoga, healthy eating, environmental advocacy

**Lifestyle:** Focused on quality of life, they seek eco-friendly and health-oriented products. They avoid nail products containing harmful chemicals and prefer organic, non-toxic, and natural ingredients for skincare and nail care.

**Typical Scenarios:**

Monthly nail treatments, particularly emphasizing whether products are environmentally friendly and contain beneficial ingredients.

Sharing environmental principles and healthy beauty habits on social media.

**Pain Points:**

Traditional nail products contain chemicals that damage nails and are not eco-friendly.

Searching for products that are both healthy and visually appealing.

**Expectations:**

Products must be free of harmful chemicals, environmentally sustainable, and nourishing for nails while containing healthy ingredients.

### 2. Novelty-Seeking Young Nail Consumers

**Age Range:** 18-28 years

**Occupation:** College students, fashion bloggers, artists

**Interests:** Fashion, trends, DIY nail art, travel, sharing on social media

**Lifestyle:** Loves trying new things, values personalized and creative designs, seeks trendy and avant-garde nail styles, enjoys showcasing nail art results on social media.

**Typical Scenarios:**

Frequently changing nail styles monthly, experimenting with different colors and designs, especially unique and personalized styles.

Showcasing nail art on social platforms and attending offline nail art salon events.

**Pain Points:**

Existing nail designs are often repetitive, lacking creativity and personalized options.

Complex nail styles can be expensive and time-consuming to achieve.

**Expectations:**

Nail designs should be customizable and incorporate bio-art, offering unique color and pattern choices.

Reasonable pricing and quick, convenient nail application.

### 3. Wearable Nail Production Factories

**Type:** B2B enterprises, wearable nail manufacturers

**Main Goals:** Improve production efficiency, reduce costs, and keep up with market trends

**Typical Scenarios:**

Collaborating with nail brands and retailers to produce wearable nail products that meet market demand.

Designing and manufacturing different styles of wearable nails based on the latest market trends and consumer preferences.

**Pain Points:**

The market is saturated with homogeneous products, making competition fierce; innovation in design is essential to stand out.

Need to enhance production efficiency, reduce costs, and maintain market competitiveness.

**Expectations:**

Partnering with companies using bio-nail technology to produce eco-friendly, healthy, and artistically designed wearable nail products.

Delivering high-quality products at reasonable costs while improving market response speed.

### 4. Offline Nail Salon

**Type:** Small to medium-sized nail salon

**Main Objective:** Provide high-quality nail services, enhance customer experience, and increase customer loyalty.

**Typical Scenario:**

Nail technicians offer a variety of nail designs, especially maintaining competitiveness in high-end designs and healthy nail care.

Attract customers to become long-term clients through quality service and personalized designs.

**Pain Points:**

Customers' demand for eco-friendly and healthy nail products is continually rising, while existing nail products fail to meet these needs.

Nail services take a long time and are inefficient, affecting the overall service experience for customers.

**Expectations:**

Introduce eco-friendly and healthy bio-nail products to attract health- and environmentally-conscious consumers.

Provide fast and convenient nail services to improve overall customer satisfaction.

## 5. Online E-commerce Platform

**Type:** B2C e-commerce platform for beauty product sales

**Main Objective:** Expand the variety of nail products and increase platform sales.

**Typical Scenario:**

Promote innovative and health-oriented nail products to consumers, enhancing user engagement through a rich variety of nail categories.

Collaborate with nail brands to attract consumers to purchase online through promotional activities.

**Pain Points:**

There are numerous similar nail products on the platform, making it challenging to stand out.

Customers expect a more efficient and convenient shopping experience, which existing nail products have not fully satisfied.

**Expectations:**

Introduce eco-friendly and health-oriented bio-nail products to attract new users through personalized customization and innovative designs.

Increase online product sales through targeted marketing and social media promotion.

## VI. Business Model

### 1. Overview

Nailiva's profit model is based on biotechnology, personalized custom services, and eco-friendly health concepts, enhancing brand value through multi-channel sales both online and offline. We will approach this from both B2C (consumer side) and B2B (business side), establishing a multi-tiered profit structure and improving market coverage and user loyalty by connecting the upstream production and manufacturing with the downstream retail sales chain.

### 2. Profit Model Design

#### (1) Targeting environmentally conscious and health-oriented nail consumers

##### ❖ Product Sales:

- **Benchmark Brand:** Zoya (an eco-friendly nail polish brand) attracts environmentally conscious consumers with its non-toxic ingredients and sustainable packaging.
- **Partner Brands:** E-commerce platforms like Sephora or Xiaohongshu, particularly promoting Nailiva's eco-friendly nail products under the organic beauty category. This can be achieved by setting up flagship stores on these platforms, focusing on selling

healthy and eco-friendly biotech nail products, such as nail tips, care products, and customized nail services.

#### ❖ **Customization Service Premium:**

- **Benchmark Brand:** ManiMe (a brand offering personalized custom wear nails), provides nail designs customized according to hand photos.
- **Partner Brands:** High-end fashion brands like Hermès and Gucci can launch limited-edition custom nails, particularly attracting customers willing to pay a premium for unique designs. Collaborating with fashion brands for co-branded products will attract high-end customers and create a unique image for healthy and eco-friendly nails.

#### ❖ **Subscription Model:**

- **Benchmark Brand:** FabFitFun (a subscription beauty care service) introduces new health and beauty products to members quarterly through a membership model.
- **Partner Brands:** Launching Nailiva's nail subscription service on e-commerce platforms like Tmall Global and JD, where users receive the latest eco-friendly health nail products and care services monthly or quarterly. Utilizing the subscription service feature on these platforms can improve repeat purchase rates.

## **(2) Targeting Young Nail Consumers Seeking Novelty**

#### ❖ **Personalized Customization:**

- **Benchmark Brand:** Color Camp (a brand that offers customized nail art designs) provides unique nail design options for young people through its online customization service and AR try-on technology.
- **Collaborative Brands:** Platforms like Olay Skin Advisor, utilizing AI skin analysis technology, offer an intelligent nail customization experience, enhancing user engagement and interaction.

#### ❖ **Limited Edition Collaborations with Fashion Brands:**

- **Benchmark Brand:** OPI (known for launching limited edition nail polishes in collaboration with well-known brands like Disney and Coca-Cola).
- **Collaborative Brands:** Collaborating with fashion sports brands like Nike and Adidas to launch limited edition nail products, appealing to young consumers who pursue fashion and personalization. The scarcity and cross-industry collaborations enhance brand premium.

#### ❖ **Social Media Marketing and Promotions:**

- **Benchmark Brand:** Glossier (widely markets through social media, attracting a large young fan base).
- **Collaborative Platforms:** Partnering with Douyin and Xiaohongshu to promote creative nail designs through short video content and influencer KOL recommendations, spreading brand ideas among young demographics. Additionally, limited-time promotions and discounts are launched to stimulate immediate purchase demand.

### **(3) Targeting Wearable Nail Production Factories**

#### ❖ **B2B Collaborative Production and Distribution:**

- **Benchmark Brand:** ManiMe (collaborates with production factories to manufacture personalized wearable nail products).
- **Collaborative Brands:** Partnering with top global cosmetics contract manufacturers like Cosmax or Intercos to produce eco-friendly, health-conscious wearable nail products that meet Nailiva's standards. These factories can help Nailiva scale production while ensuring high-quality bio-nail products.

#### ❖ **OEM/ODM Model:**

- **Benchmark Brand:** Sally Hansen (collaborates with multiple OEM factories to produce and distribute nail products in various countries).
- **Collaborative Brand:** Partnering with Nailmatic (a French nail brand) to provide healthy and eco-friendly nail technology through the OEM/ODM model, further expanding into international markets.

### **(4) Targeting Offline Nail Salons**

#### ❖ **Supply Chain Collaboration:**

- **Benchmark Brand:** CND (supplies nail products and tools to thousands of nail salons worldwide).
- **Collaborative Brands:** Partnering with major chain nail salons such as Yijia International and Diva Nails to wholesale supply Nailiva's eco-friendly nail products while promoting healthy nail concepts in their stores. Additionally, collaboration with beauty care brands like The Body Shop to offer healthy nail services in offline stores.

❖ **Training and Franchise Model:**

- **Benchmark Brand:** OPI (helps nail technicians improve their skills through a training certification system).
- **Cooperative Brands:** Collaborate with local life service platforms such as Meituan and Dazhong Dianping to launch Nailiva's training and franchise model, helping small and medium-sized nail salons enhance their service levels and expand their product coverage. By providing training in eco-friendly nail technology, equipment, and raw material support, we aim to attract more nail salons to join the franchise system.

❖ **High-End Custom Services:**

- **Benchmark Brand:** Bio Sculpture (a brand that offers personalized high-end nail services).
- **Cooperative Brands:** Partner with high-end beauty salon brands like Clarins Spa to provide personalized high-end custom nail services, ensuring service quality and enhancing Nailiva's brand image among high-end clients.

**(5) For Online E-commerce Platforms:**

❖ **Online Direct Sales:**

- **Benchmark Brand:** Essie (widely sells online through Amazon and Sephora).
- **Cooperative Brands:** Collaborate with major e-commerce platforms like Tmall International and JD.com to open Nailiva flagship stores, focusing on the sale of eco-friendly nail products, care products, and custom nail services. By highlighting the characteristics of eco-friendliness and health, we attract online consumers through brand promotion and marketing activities.

❖ **Platform Co-branded Products:**

- **Benchmark Brand:** NCLA (launches co-branded products in collaboration with renowned artists and designers).
- **Cooperative Brands:** Partner with e-commerce platforms like Taobao Maker Festival or Tmall's Little Black Box for co-branded activities to launch Nailiva's customized or limited edition nail products, enhancing market exposure and pricing power through unique designs and brand collaborations.

### ❖ **Big Data Precision Marketing:**

- **Benchmark Brand:** Glossier (provides personalized recommendations through big data analysis to increase conversion rates).
- **Cooperative Brands:** Collaborate with platforms like Alibaba Mama or Jingzhun Tong on big data marketing tools to accurately target different consumer groups. Based on users' consumption habits and preferences, we will push personalized recommendations and promotional information, enhancing user stickiness and average transaction value.

## 3. Connecting Upstream and Downstream Industry Chains

### **(1) Upstream Supply Chain Integration:**

#### **a. Nail Material Supply:**

Long-term cooperation with eco-friendly nail material suppliers: Nailiva will establish long-term partnerships with suppliers that have environmental and innovative capabilities to ensure a stable supply of raw materials. We plan to collaborate with globally leading biotechnology companies like Novozymes, especially for producing core materials such as bioengineered silk protein and hydrogel layers, to ensure the quality and stability of eco-friendly materials. Furthermore, for the AMS hybrid protein hydrogel based on mussel protein adhesion characteristics, Nailiva plans to establish its own production base to ensure technological innovation advantages in materials.

#### **b. Packaging Material Supply:**

Procurement of sustainable packaging materials: Nailiva will procure biodegradable and eco-friendly packaging materials to reduce the carbon footprint in the production process. We will collaborate with renowned eco-friendly packaging suppliers like Amcor to use renewable or recyclable packaging materials, further strengthening the brand's eco-friendly image. These materials not only meet international environmental standards but also enhance the brand's perception of social responsibility.

#### **c. Production Equipment:**

Procurement and introduction of efficient production equipment: To ensure efficiency and quality control in the production process, Nailiva plans to cooperate with leading global production equipment suppliers to procure the latest automated production lines, including 3D printing equipment, customized nail tip production equipment, and other smart manufacturing devices for nail products. By introducing intelligent production lines, Nailiva will be able to respond quickly to market demands, shorten product launch times, and enhance market competitiveness.

#### **d. Production Outsourcing and Technology Licensing:**

Technology licensing and outsourced production model: To improve production efficiency and reduce operational costs, Nailiva will collaborate with quality OEM/ODM factories, such as

Intercos and Cosmax. We will license these factories to use Nailiva's unique bio-nail technology for large-scale production. Nailiva will continue to focus on brand design, research and development, and market promotion, increasing overall profitability through a shared profit model. This approach not only lowers the risk of large-scale production investments in the early stages but also allows for rapid market share expansion by leveraging the production capacity of partners.

## **(2) Downstream Channel Expansion**

### **a. Multi-Channel Distribution Strategy**

**Online Distribution Channels:** Nailiva will establish deep partnerships with mainstream e-commerce platforms such as Tmall International, JD.com, and Amazon, launching official flagship stores to sell products directly to consumers. This model can quickly cover the global market, increasing brand visibility and sales volume. Additionally, the company will collaborate with professional beauty platforms like Sephora to leverage their robust sales network and enhance market penetration of its products.

**Offline Distribution Channels:** Nailiva will focus on collaborating with well-known nail salons and chain beauty parlors, both domestically and internationally, to build a sales network for nail products and services. By partnering with large chain nail brands like Yijia International and Diva Nails, the company will ensure its products are displayed and sold in high-traffic stores that require advanced nail techniques. Moreover, it will enter high-end beauty salons such as Clarins to offer customized nail services, attracting customers who prioritize personalized and high-quality experiences.

### **b. Product Bundles and Package Sales**

**Comprehensive Nail Solutions:** Nailiva plans to implement a product bundle sales strategy at the retail level, packaging eco-friendly nail products (such as bio-nail tips and nail polish) with nail care products (like hyaluronic acid moisturizing essence and nail care kits) to create a complete nail care solution, thereby increasing the average transaction value. This strategy can be combined with online and offline channels, such as launching exclusive nail care kits in partnership with Sephora or regularly conducting promotions and time-limited offers on Tmall and JD.com to enhance consumer purchasing motivation.

### **c. Membership Subscriptions and Personalized Services**

**Subscription Model and Customized Services:** To cater to Nailiva's core consumer base, the company will introduce a personalized nail subscription service that provides regular deliveries of nail products and personalized design suggestions. Customers can choose their preferred colors and patterns through the online platform, enjoying exclusive customization services that ensure frequent purchases and customer loyalty. Additionally, Nailiva will collaborate with social media platforms like Xiaohongshu and Douyin, utilizing KOLs and influencer marketing to engage young consumers in creative DIY nail activities, increasing brand interaction and exposure.



## VII. Market Promotion and Marketing Strategy

We aim to penetrate two specific market: **universities** and **fashion incubators**, initially securing a stable primary customer base and touchpoints, thereby achieving a solid market presence. Upon establishing a foothold in these initial markets, we will expand regionally into **commercial districts**, establishing exclusive **offline experience stores** and **brand image outlets** to explore new market opportunities.

To enhance brand visibility, we will leverage **social media platforms**, collaborate with **influencers**, and partner with **renowned IPs** to elevate our brand awareness and promote our products. Beyond product promotion, our brand is actively engaged with the broader society, aiming to inspire more people to **prioritize health** from the tips of their fingers. To this end, we employ comprehensive promotional strategies catering to diverse demographics, including creating a **gesture dance** based on sign language. Furthermore, Nailiva is committed to supporting **the promotion and development of synthetic biology**. By merging manicure with microbiology, we have designed a new map for the game “Overcooked”-featuring a laboratory and nail salon, which we believe will educate the public on our operations, fostering trust and affection for our products, as well as introducing them to the workflows of synthetic biology, facilitating their future engagement in shaping this field.

### 1. Online Social Media Platform

#### (1) WeChat Official Account:

Equipped with **powerful daily communication functions**, it can efficiently push information and establish long-term interactions with users. It is suitable for sharing **brand stories**, **industry trends**, and **practical knowledge**, thereby enhancing user engagement. Through articles, images with texts, interactive Q&A, and other forms, it can **increase user participation**, **build trust** and **promote brand loyalty**.

#### Brand Story Sharing:

**Targeting users** who are interested in **environmental protection**, **beauty**, and **healthy lifestyles**, we regularly publish articles on our **WeChat Official Account** about the brand’s origin, development journey, and core values. For instance, we elaborate on how our bio-nail technology, through technological innovation, advocates for environmental protection and health, helping consumers understand the story behind our products and gradually deepening their **emotional connection and identification** with our brand.

#### Industry Trends and Technology News:

We offer **weekly newsletters or in-depth articles**, complete with illustrated industry analyses. These share the latest developments in biotechnology and the nail care sector, such as trends in

eco-friendly materials and breakthroughs in antibacterial technology. Through these contents, we aim to establish our brand as **a professional authority in the field of biotechnology**. At the end of each article, we can include buttons like “Read Full Article” or “Download Related Research Report” to further enhance users’ understanding of our brand’s technological background.

### **Practical Nail Care and Art Knowledge Sharing:**

We publish **practical tutorials** addressing issues such as daily nail care, nail art techniques, and the use and maintenance of press-on nails. For example, we can share tips on how to correctly apply and maintain bio-nails, conduct routine nail care routines, and avoid common problems.

### **Q&A and Raffle Events:**

We host **an interactive Q&A or raffle event** on our WeChat Official Account once a month, such as a “Common Question About Bio-Wearable Nails” Q&A session. Users can participate by leaving questions or engaging in interactive topics to win **opportunities for free product trials**. We utilize the “Common Function” and “Push Notification” features of the WeChat Official Account to promote the raffle events and notify users.

### **(2) Bilibili (B Station) :**

A video-sharing community dominated by young people, featuring **influential UP (Uploader) creators** who produce diverse content formats, making it an ideal platform for in-depth **introductions** to product technology and user experiences.

### **Unboxing Review:**

We will reach out to **well-known UP (Uploader) creators** in the beauty, nail art, and aesthetics fields, inviting them to create unboxing videos for our bio-wearable nails. In these videos, they will showcase the product’s outer packaging, accessories, and the wearing process. The UP creators will also share their personal experiences and impressions, including comfort levels and visual effects, thereby **enhancing credibility**.

### **Explanation of Scientific Principles:**

We will invite **experts** in biomaterials, health, and beauty to produce explanatory videos that delve into the superiority of biomaterials, such as their durability and antibacterial effects.

### **DIY Tutorials:**

Collaborating with **UP creators** in the fields of handmade crafts, painting, and art design, we will create a series of DIY tutorial videos. These videos will cover various styles of bio-nail art designs, such as floral patterns, geometric shapes, and more. Each step will be detailed, attracting **users who enjoy handicrafts** and encouraging them to share their won creations.

## Interactive Live Streaming:

**Live Demonstration:** Organize a live streaming event featuring product representatives and popular video creators (UPs) to demonstrate the usage of bio-wearable nail products on-site. During the demonstration, they will explain precautions and tips, thereby enhancing audience understanding of the product.

**Professional Testing (Key Focus):** Invite industry experts to conduct live tests of the product's antibacterial effects, showcasing its actual performance and bolstering consumer trust.

**Luck Draw & Discounts:** Incorporate a Q&A and lucky draw segment into the live stream, offering giveaways of products or coupons as incentives for audience engagement. Additionally, implementing limited-time discounts can stimulate purchase intentions among viewers, leading to an increase in conversion rates.

## (3) Xiaohongshu (RED):

### KOL (Key Opinion Leader) Collaboration & Authentic Product Reviews:

Select **renowned beauty bloggers** in the field to conduct reviews and recommendations of the bio-nail products. These bloggers will **share their genuine usage experiences** in the form of image-text posts or short videos, highlighting the eco-friendly and healthy advantages of bio-nails from the moment of unpacking the packaging, through the wearing process, to the effects after extended use. To further engage the audience, **interactive comment sections** will be established under the bloggers' content, inviting users to share their own nail art experiences, ask questions about the products, and encourage discussions, thereby enhancing product exposure.

### UGC (User-Generated Content) Promotion:

By offering trial packs or samples, encourage ordinary users to publish their usage experiences on the Xiaohongshu platform. For instance, **launch a hashtag campaign** titled “#我的生物美甲体验” (My Bio-Nail Experience), where users share their thoughts and feelings through images, texts, or videos, thereby amplifying word-of-mouth marketing. **Regularly select high-quality content** and reward users with full sets of products or coupons as incentives, encouraging even more users to participate.

### Product Feature Introduction Posts:

Publish visually appealing and informative product feature introduction **posts** on the Xiaohongshu platform, detailing the product structure, usage methods, design inspirations, and antibacterial advantages of bio-nails. These posts can adopt a format that combines “**nail art trend sharing + product recommendations**,” catering to Xiaohongshu users' interest in fashion and trends. By incorporating recently popular nail art styles, recommend various nail design combinations suitable for different occasions, and naturally integrate the benefits of bio-nails within the article to attract **fashionistas and nail art enthusiasts**.

### Shopping Experience Sharing and Usage Tips:

Through **detailed image-text posts or short videos**, showcase the usage tips for bio-nails, such as how to better fit them on nails, conduct daily care, and quickly change styles. The addresses users' confusions in usage and **enhances the practicality of the product**. After publishing the content, encourage users to share their own usage experiences or ask questions in the comment section. The brand can **respond to user inquiries** through its official Xiaohongshu account, demonstrating the brand's attention to users and the professionalism of its products.

## 2. Collaborative Branding: Endless Creativity, Leading the Trend

To further enhance our brand influence, we plan to collaborate with multiple renowned IPs. We aim to partner with the globally popular movie IP **"Inside Out"** to launch an **"Emotion Nails"** series, featuring the colors representing different emotions from the film as the base, paired with creative patterns, allowing nails to become **an expression of the wearer's emotions**. Additionally, we intend to collaborate with traditional cultural IPs such as **Blue and White Porcelain**, as well as natural ecology IPs like **"Planet Earth,"** to introduce series of nail products including **"Blue and White Shapes," "Blue and White Patterns,"** and themes of **"Time's Passage," "Vibrant Life,"** and **"Magnificent Landscapes."** Through these unique design concepts and profound cultural connotations, we aim to attract the attention and affection of an even wider range of consumers.

### (1) Collaborative Branding with "Inside Out"

#### [Project Background]

"Inside Out" currently consists of two films. In both movies, different emotions are assigned distinct colors.

**Joy is yellow**, perfectly capturing the bright, live and warm qualities of happiness. **Sadness is blue**, embodying the depth and melancholy of sorrow. **Anger is red**, expressing the intensity, impulsiveness, and uncontrollable nature of anger. **Fear is purple**, giving fear a sense of mystery, uncertainty, and potential threat. **Disgust is green**, reflecting the repulsion and aversion towards specific things or situations. **Anxiety is orange**, conveying both the tension and unease of anxious emotions while also carrying a sense of warning and vigilance. **Jealousy is teal**, embodying the complex psychological fluctuations within jealousy while also carrying a hint of longing and envy. **Boredom is purple**, representing a state of losing interest, feeling bored, and exhausted towards something. **Embarrassment is pink**, expressing the inner unease and shyness associated with this emotion.

#### [Project Objectives]

1. Through the collaborative branding between "Inside Out" and our bio-nails, we aim to bring our nail products into the spotlight of **a wider audience** and enhance the public's favorability and acceptance of our bio-nails.

2. By designing the “Inside Out” collaborative nail series, we aim to showcase the **creativity** of our bio-nails and the **ingenuity** of our team, while embodying the concept of “**expressing emotions**” in our bio-nail design.

### [Design Concept]

Leveraging the unique features of bio-nails and the content of “Inside Out,” we plan to develop the “**Emotion Miniature Series**” of nail designs:

- **Joy:** Featuring yellow as the primary color, adorned with smiling faces, stars and other cheerful motifs, conveying positivity and happiness.
- **Sadness:** Dominated by blue, accompanied by raindrops, dark clouds, and other imagery, expressing depth and sorrow.
- **Anger:** Red takes center stage, paired with flame, lightning bolts, and other elements, showcasing anger and excitement.
- **Fear:** Utilizing black or dark purple as the base, incorporating traditionally frightening patterns.
- **Disgust:** Deep green serves as the foundation, paired with patterns that depict pickiness and aversion.
- **Anxiety:** Orange prevails, integrated with designs that represent stress and anxiety.
- **Jealousy:** Blue-green highlights the design, combined with eyes, jewels, and other elements, conveying a mix of envy and admiration.
- **Boredom:** Gray-purple dominates, incorporating “lying flat” of similar motifs to express fatigue and disinterest.
- **Embarrassment:** Pink serves as the primary color, with “blushing” themes and patterns, capturing inner unease and awkwardness.

In designing these patterns, besides color selection, we must also pay attention to the design and layout of the motifs. We aim to use as **simple and easily understandable patterns** as possible to express emotions. Additionally, maintaining a sketch-like and adorable overall style may make our designs more appealing to the general public.

While the film features nine emotion miniatures, the second installment introduces a new character ---- **Bing Bong, the Memory Keeper**. We can capitalize on this character to design a tenth nail design, embodying the warmth of cherished memories.

Another approach is to draw inspiration from the recurring theme of **the Emotion Control Console and the diverse Memory Balls** in the film. Incorporating these elements into our design,

we can create a tenth nail design that strongly resonates with the cinematic universe of “Inside Out.”

#### [Promotion Strategies]

- **Social Media Marketing**

We will publish an overview of the collaborative nail series and related tutorials on social media platforms such as WeChat Official Accounts, Bilibili, and Xiaohongshu. Furthermore, we will invite **renowned beauty bloggers** to try on and share their experiences with our products, thereby further promoting our offerings.

- **Offline Pop-up Store Experience Events**

We plan to host “Inside Out”-themed nail art experience events in nail salons or shopping malls, complete with photo zones. We will encourage consumers to share their experiences on social media platforms and offer corresponding gifts of samples as incentives.

- **Limited-Time Offers**

We will introduce special collaborative nail packages with significant discounts for a limited period, along with complimentary gifts, to attract customers and stimulate purchases.

## **(2) Jingdezhen Blue and White Porcelain Collaboration**

#### [Project background]

Jingdezhen blue and white porcelain, also known as white-ground blue and white porcelain of simply blue and white, is one of the main types of Chinese porcelain. Originating in the Yuan Dynasty and reaching its peak during the Ming and Qing dynasties, it is a type of porcelain where cobalt oxide pigment is used to paint patterns on the unfired body, which is then glazed and fired at high temperatures in a single firing. The result is a harmonious interplay of blue and white hues, creating a pleasing, crisp, and vibrant appearance.

The traditional craftsmanship of Jingdezhen blue and white porcelain encompasses a comprehensive production process. While ensuring the quality of the blue pigment used, emphasis is placed on the painting and decoration techniques, including design, sketch transfer, outlining, and water distribution, to create richly layered and expressive patterns. Ultimately, this process results in porcelain with a clear, elegant, and stable color tone, exuding an artistic effect that is both simple and refined. Its vivid coloration, stable pigmentation, non-fading patterns, rich layers, and strong expressiveness give it an artistic effect reminiscent of traditional Chinese ink painting. The decorative motifs of blue and white porcelain are vast and varied, encompassing **figures, animals, plants, poems**, and more, with full compositions and smooth, powerful brushstrokes. Additionally, the absence of toxic elements such as lead and cadmium, making it **harmless to human health**, has contributed to its widespread popularity.

Jingdezhen blue and white porcelain is not only a treasure of traditional Chinese culture but also **an important carrier of cultural exchanges between East and West**, having been disseminated worldwide through trade routes such as the Silk Road. The patterns and motifs on blue and white porcelain not only reflect the aesthetic tastes and cultural connotations of ancient Chinese society but also incorporate elements of foreign cultures, such as Islamic art, resulting in a unique artistic style. With the passage of time, Jingdezhen blue and white porcelain has continued to innovate while preserving its traditions. Modern versions, while maintaining the essence of traditional craftsmanship, integrate modern design concepts and technological means, introducing numerous new products that cater to contemporary aesthetic preferences.

#### [Project Objectives]

- By incorporating blue-and-white porcelain elements into nail art, we aim to endow each piece of biological nail art with a unique Chinese narrative, integrating **the trend of “Guochao”**(a popular term referring to the resurgence of traditional Chinese culture in modern fashion and design) to better promote our biological nail art.
- The fusion of nail art and blue-and-white porcelain represents a novel artistic expression, through which we aspire to show case the outstanding traditional culture of the Chinese nation to the world, enabling more people to appreciate **the charm of Chinese blue-and-white porcelain**.

#### [Design Concept]

In our product design, we aspire to maintain the signature “blue-and -white contrast” color palette of blue-and-white porcelain while infusing even more Chinese-style elements into nail art.

##### a) **Blue-and-White Porcelain Shape Series**

- **Plum Blossom Vase:** A common type in blue-and-white porcelain, named for its narrow mouth suitable for inserting plum branches. We will emulate the shape of the plum blossom vase to create nail art patterns.
- **Gourd-Shaped Bottle:** Blue-and-white porcelain gourd bottles come in both traditional gourd shapes and various innovative designs. We can leverage the unique features of our nail enhancement layers to design novel gourd-shaped patterns.
- **Jade Flask Vase:** Originating from the water purifying vases used in Tang Dynasty temples, the jade flask vase holds a significant place in blue-and-white porcelain. We will replicate its form in our nail art designs.
- **Flower Vase:** Typically featuring a neat and streamlined shape, flower vases were used in imperial gardens to hold flowers. We will incorporate floral elements onto the vase design to create our nail art pieces.

## b) Blue-and-White Porcelain Decoration Series

- **Animal Motifs:** Selecting simpler dragon patterns (such as jade dragons), phoenix patterns, fish and algae designs, we will adapt them to fit the shape and size of nails, crafting a series of nail art.
- **Plant Motifs:** Choosing patterns with auspicious meanings like peony, lotus, chrysanthemum, pine, bamboo, plum blossom, and intertwined vine patterns, we will combine these with the characteristics of our nail polish to create Chinese-style nail art.
- **Other Motifs:** Traditional motifs like the Eight Treasures Pattern, sea waves, cloud patterns, and bat patterns, all embodying strong Chinese characteristics, can also be selectively incorporated into our nail art designs.

### [Promotion Strategy]

The promotion plan follows a similar approach to the previous one, with a few additional strategies. Given that blue-and-white porcelain is a prominent symbol of Chinese culture, we can endeavor to **collaborate with major museums** to launch nail art series that match the blue-and-white porcelain pieces in their collections. This will not only appeal to nail art enthusiasts but also **attract a broader range of customers**, thereby expanding our target audience.

## (3) Collaboration with “Planet Earth”

### [Project Background]

“**Planet Earth**,” a natural documentary produced and broadcast by the BBC, has garnered widespread acclaim from global audiences since its premiere in 2006 for its unique perspective, breathtaking visual effects, and profound content.

The **objective** of “Planet Earth” is to showcase the magnificent spectacles of various natural landscapes and biodiversity on our planet. Over the course of many years, the production team traveled across all seven continents, **capturing numerous invaluable footage**. Following the seasons of spring, summer, autumn, and winter, the documentary sequentially presents the natural landscapes and biological activities, unveiling a vibrant and enigmatic natural world to viewers. Encompassing **various ecological environments ranging** from polar ice caps, tropical rainforest, to deserts and oceans, the documentary also focuses on **animals’ survival challenges and migration experiences** in extreme environments, as well as their **relationship with humans**.

Since its broadcast, “Planet Earth” has received overwhelming praise from audiences worldwide not only heightening awareness of the natural environment but also inspiring numerous countries and regions to take concrete actions to **protect rare flora and fauna on Earth**. Simultaneously, it has promoted the development of **environmental education**, awakening a broader spectrum of people to the importance of safeguarding our planet.



The book titled “ **Planet Earth: The Beauty of Nature Never Before Seen,**” which shares the same name as the documentary, was published by Post & Telecom Press. It selects over 400 photographs from the documentary, accompanied by detailed captions, offering readers a more comprehensive and profound journey through the nature wonders of our planet, enabling many more to appreciate **the charm of nature**.

### [Project Objectives]

- Leverage the **nature elements** featured in “Planet Earth” to attract greater attention to our nail art.
- By design a nature-inspired nail art series, appeal to a wider audience to raise **awareness** of environmental issues and encourage their **participation** in environmental protection efforts.

### [Project Design]

- **Seasonal Series**

(1) Select **different forms of trees** throughout the four seasons and design corresponding nail art featuring seasonal tree changes, showcasing the passage of time.

(2) Choose **a specific scene** from “Planet Earth” and utilize simple color transitions to depict the **seasonal changes** within the same scenery.

- **Biodiversity Series**

Select **representative creatures** from various regions featured in “Planet Earth”, create their simplified illustration styles, and incorporate them into nail art designs, embodying the biodiversity across the globe.

- **Geographic Series**

Choose **iconic landscapes** from the documentary and combine them with elements such as maps to form corresponding patterns for nail art designs.

### [Promotion Strategy]

The promotion strategy remains similar to the previous approach. Additionally, we can develop scripts, shoot **promotional videos or short documentaries** with ad nature theme, and utilize these materials in offline promotional activities to better introduce our products and attract more customers. By showcasing the connection between our nail art and the nature wonders presented in “Planet Earth,” we aim to inspire a deeper appreciation for nature and environmental conservation among our audience.

## VIII. Development Stage Description and Planning

### 1. Product Design Phase (Completed)

- ❖ We conducted market research through **questionnaires**, **user interviews**, and other methods to gather consumers' needs and expectations for bio-inspired nail art, including design styles, material requirements, comfort levels, and more. Based on the findings from our research, we designed preliminary product prototypes, encompassing appearance, structure, and function.
- ❖ Our design **takes the form of wearable nail tips**, utilizing **hydrogel** as the adhesive material. Additionally, we have incorporated **antimicrobial substances** into the design and leveraged the ability of **microorganisms** to generate colors, creating a unique and eco-friendly product that meets the demands of our target audience.

### 2. Technology Validation Phase (Completed)

- ❖ We screened and constructed **microbial strains** with specific color expression capabilities, optimizing their performance through genetic engineering techniques. We explored the color change patterns of these microorganisms under different culturing conditions, thereby **developing a color control scheme** to achieve the color rendering of preset patterns.
- ❖ Additionally, we validated **the adhesive strength and stability of the hydrogel**, as well as the conditions and methods for its **removal**.
- ❖ Furthermore, we **planned** to integrate **antimicrobial peptides** into the hydrogel to verify its antibacterial effectiveness.

### 3. Product Iteration and R&D (Ongoing)

Based on user feedback and market testing, we are continually iterating and optimizing the product prototype to ensure that it meets market demands and satisfies the expectations of our customers.

#### (1) Product Interaction

- ❖ **Solid Color Biological Nail Art:** Replacing nail polish with microbial expression products. We have engineered bacterial strains to express **the three primary colors of red, yellow, and blue**. By providing different inducers and conditions, we enable these engineered bacteria to express the corresponding colors. The **pigment** produced by the microbial expression serves as the source of paint for our nail art designs. Under suitable conditions, the biological ink

obtained from the cultured bacteria is applied to the nail tips and sealed, resulting in **safe and healthy solid color biological nail art**.

- ❖ **Adhesive Nail Nourishing Gel:** Using hydrogel composites as a substitute for jell gel. We have designed and synthesized a hybrid viscoelastic hydrogel composed of **human A $\beta$  amyloid protein, spider silk protein, and mussel foot protein**, which possesses excellent adhesive properties while allowing for easy removal through temperature changes. This product is **user-friendly**, facilitating application and removal without damaging the nail surface. To further enhance nail protection, we have incorporated **exogenous metronidazole** into the formula, achieving the purpose of nourishing and protecting the nails.
- ❖ **Fixed Pattern Nail Art:** We offer a range of aesthetically pleasing designs and also support user-defined customization. Upon analyzing the design drafts, we apply bacterial solutions and inducers onto solid culture media mixed with substrates as required and proceed with cultivation. Once the engineered bacteria complete their color expression, we **transfer the pigment** from the solid culture media onto a **transfer film** to **obtain the desired design pattern**. After fixing the pigment and applying a sealing layer, the decorative layer is completed, resulting in fixed pattern nail art.
- ❖ **Dynamic Random Nail Art:** The defining feature of this nail art is **the injection of live engineered bacteria into the nail polish** in liquid form, allowing them to grow on the nail surface and enabling users to observe dynamic color changes as they wear it. We provide users with **a customized nail tip with a thin groove**, a set of liquid pouches, and a sealing bag. Users mix the liquids from the pouches evenly and inject them into the thin groove before sealing it, **creating a dynamic random nail art piece**. Users can choose their preferred color palette and enjoy the charm of witnessing the random and dynamic color changes unfold on their fingertips.

## **(2) Future Research and Development Vision**

- ❖ **Enhanced Antibacterial Effect:** We aspire to optimize our adhesive nail nourishing gel by further **enhancing its antibacterial properties**. Our plan involves experimenting with the incorporation of antibacterial peptides into the hydrogel composite material to **investigate their efficacy** in inhibiting bacterial growth on nails and cuticles.
- ❖ **Enhanced Nourishing Effect:** We aim to endow our adhesive nail nourishing gel with additional benefits for nail and cuticle care. We intend to incorporate substances such as **petroleum jelly** and **hyaluronic acid**, which are known for nourishing nails and cuticle skin, into the hydrogel formulation. This integration will be guided by the methodology employed for the inclusion of metronidazole, and we will validate its effectiveness in delivering the desired nourishing effects.
- ❖ **Controllable Dynamic Nail Art:** We aspire to experiment with **controlling the transformation process of bacterial solutions**, including selective and directional changes in color, as well as the manipulation and fixation of patterns during the dynamic process. We

can achieve this by utilizing **3D printing technology** to create nail tip models that restrict the positioning of bacterial solutions. Ultimately, users will be able to specify requires and designs for the final pattern shape and even the transformation process, and the product will adapt to these designs. For instance, we envision presenting a transformation sequence where a flower gradually blossoms from a bud to its full glory and eventually withers.

- ❖ **Perceptive Changing Nail Art:** In the future, we may further develop **nail art that can perceive changes in certain factors**, enabling dynamic control in response to variations in temperature, humidity, ambient brightness, or even the user's mood. We are aware that current technologies already support the regulation of biological activities through **optogenetics and thermogenetics tools**. Additionally, we recognize that smartwatches utilize sensors to capture data on human body changes, and **synthetic biology can also create similar sensors**. These advancements support our exploration of this innovative concept.

#### **4. Sample Production and Testing (In Progress)**

- ❖ Produce multiple batches of samples based on the design plan and **conduct internal testing**.
- ❖ After initially verifying the feasibility of the samples, conduct **rigorous quality inspections** and send them to a third-party for testing to obtain inspection reports, ensuring that the samples comply with relevant quality standards and safety regulations.
- ❖ Upon confirming their safety and level of completion, **invite target users** to try out the samples, collect feedback, and make further adjustments accordingly.

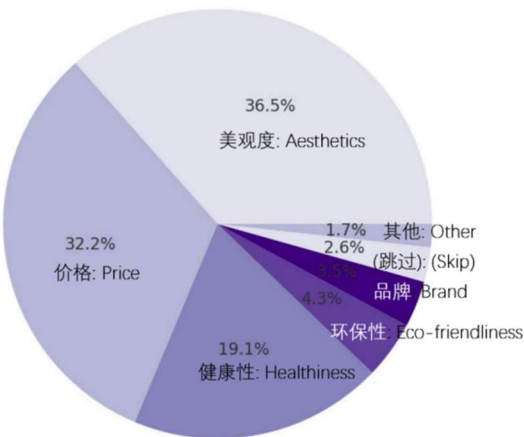
#### **5.Preparation for Market Launch (Pending)**

- ❖ **Packaging Design:** Design packaging that aligns with the brand image to enhance the product's premium feel.
- ❖ **Marketing Materials Preparation:** Develop promotional materials such as product brochures, posters, videos, and other marketing collaterals.

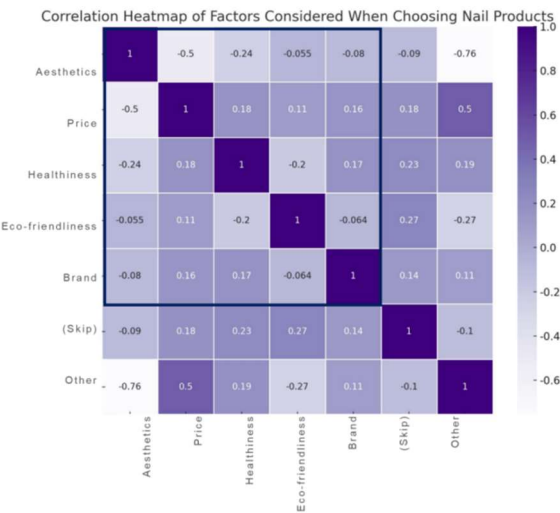
# IX. Business Calculations

## 1.User Preferences

Factors Considered When Choosing Nail Products



**Aesthetics and price** are two crucial factors when selecting nail products, with aesthetics being the top priority for consumers. Therefore, it is essential to utilize the unique properties of bio-nails to create special and beautiful nail products. Additionally, **health** is also a significant consideration, and enhancing people’s awareness of health when using nail products will serve as a promotional breakthrough.



Each cell in the **heatmap** represents the **correlation coefficient** between tow factors, ranging from -1 to 1. A value of 1 indicates a perfect positive correlation (the two factors always occur together). -1 represents a perfect negative correlation (when one factor appears, the other never does). A value of 0 indicates no correlation. The darker the color in the graph,the stronger the correlation.

The relatively **weak** correlation between **Aesthetics and other factors** suggests that when selecting nail products, individuals who solely prioritize aesthetics may not pay much attention to other factors.

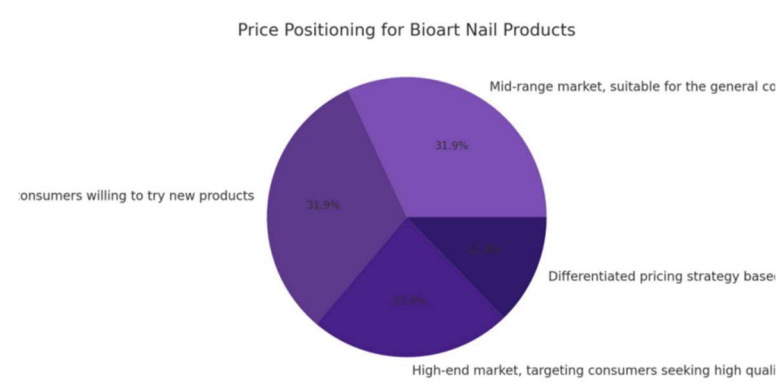
**Eco-friendliness and Health Benefits** exhibit a certain **positive** correlation with **Unique Bioart Design and Customization**, indicating that people who prioritize environmental friendliness and health benefits also tend to be interested in unique designs and personalized customization of nail products.

Similarly, there is a **positive** correlation between **Eco-friendliness and Health Benefits** and **Durability and Ease of Removal**, suggesting that those concerned about environmental friendliness and health benefits also prefer products that are durable and easy to remove.

The high **positive** correlation between **Unique Bioart Design and Customization** and **Eco-friendliness and Health Benefits** indicates that individuals who are interested in unique designs and personalized customization are also inclined to pay attention to the environmental friendliness and health benefits of nail products.

**Durability and Ease of Removal** have a high **positive** correlation with **Eco-friendliness and Health Benefits**, indicating that when selecting nail products, individuals who prioritize durability and ease of removal also value the environmental friendliness and health benefits of the products.

Overall, the heatmap reveals that those who prioritize eco-friendliness and health benefits when choosing nail products tend to also focus on the unique design, customization, durability, and ease of removal of the products. In contrast, those who solely prioritize aesthetics tend to pay less attention to other factors.



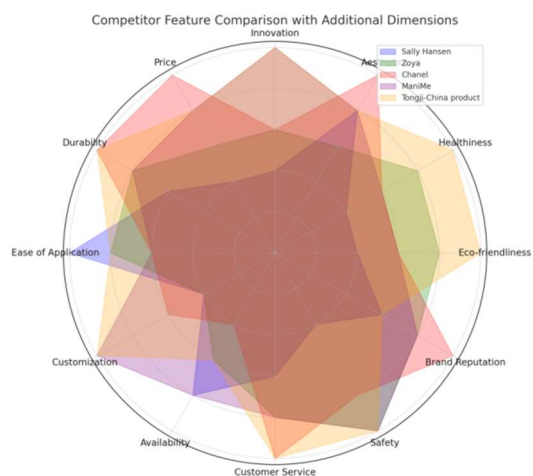
The survey on user’s acceptance of bio-nail products indicates that we should focus on creating different grades of products within various price ranges to provide **differentiated services**.

## 2.Competitive Analysis and Product Positioning

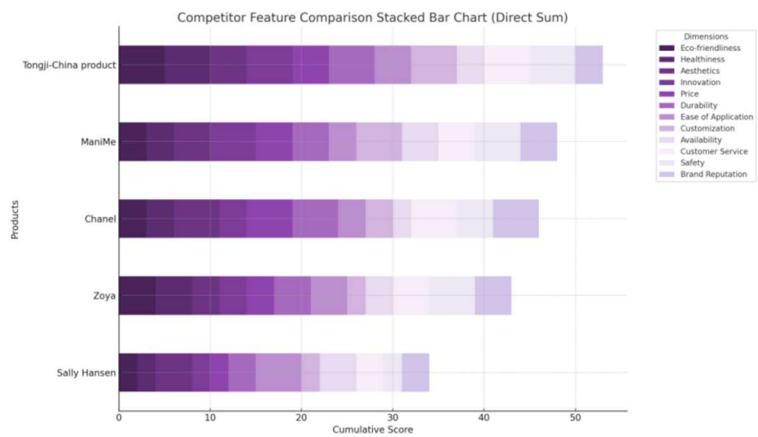
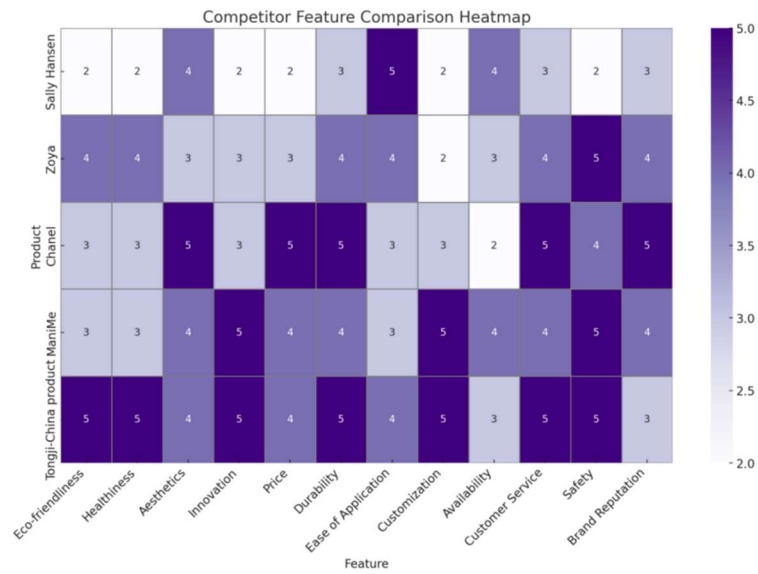
Dimension	Focus Points	Examples in Nail Products
Eco-friendliness	Using renewable, biodegradable, or	Nail polish made from nature materials;

	recyclable materials; carbon footprint and pollution emissions during production; whether the packaging is environmentally friendly.	recyclable or biodegradable packaging materials; nail brand that reduces carbon emission and waste during production.
Healthiness	Whether the product contains ingredients that are beneficial to the human body; whether the use of the product can provide some health benefits; whether long-term use has a positive impact on the user's overall health.	Nail products containing nourishing ingredients such as hyaluronic acid and vitamin E; nail products made with natural and non-toxic ingredients; ingredients that prevent onychomycosis, such as metronidazole.
Aesthetics	Color diversity and saturation; glossiness and durability; innovation in patterns and designs.	Nail polish with rich colors and long-lasting gloss; nail stickers that can create intricate patterns and designs; fashionable nail colors and designs introduced by high-end brands.
Innovation	Application of new materials and technologies; uniqueness and innovation in product functionality; whether it provides a new user experience or solution.	Nail products that use bioengineering technology to produce pigments; smart nail devices such as LED phototherapy nail polish machines; customized nail services that generate personalized designs based on user needs.
Price	Cost-benefit ratio of the product; whether it offers a variety of price tiers to cater to different consumer groups; whether there are discounts, promotions, or special offers.	Affordable yet high-quality nail products; high-end customized nail products with higher prices but offering unique designs; brands that frequently offer discounts and promotional activities.
Durability	The duration of the product's effectiveness after application; whether it is fragile or prone to falling off; the longevity of color and gloss retention after use.	Nail polish that does not fade or peel off for a long time; durable and sturdy nail stickers; high-durability phototherapy nail products.
Ease of Application	Ease of use in terms of application steps; whether special tools or skills are required; whether it is suitable for DIY use.	Quick-drying nail polish that can be applied in one step; nail stickers that are easy to apply and remove; home nail kits that can be operated without professional skills.
Customization	Whether the product can be customized according to the user's color and design preferences; whether personalized services or	Customizable nail stickers with a variety of color and pattern options; nail brands that offer personalized design services; nail products that allow users to design and customize online.

	products are offered; the level of user involvement and experience during the customization process.	
Availability	Sales channels for the product in different regions; ease of purchase both online and offline; availability of sufficient inventory and supply.	Nail products widely available in major supermarkets and pharmacies; brands that can be purchased through official websites and major e-commerce platforms; nail products also sold in international markets.
Customer Service	Speed and quality of customer inquiry and support response; whether there is a clear return and exchange policy; customer feedback and complaint handling mechanisms.	Nail brands that offer 24/7 customer support; user-friendly return and exchange policies and procedures; brands that actively respond customer feedback and make improvements.
Safety	Whether the product contains harmful ingredients such as formaldehyde, phthalates, toluene, etc.; whether the use of the product can cause skin allergies or other side effects; whether the production and use of the product comply with safety standards and regulations.	Formulas without harmful chemicals; ingredients that do not cause allergic reactions; non-toxic and side-effect-free after use, ensuring the safety of users.
Brand Reputation	Brand reputation and user evaluations within the industry; whether there are well-known brand ambassadors or partners; the brand's history and influence in the market.	Well-known nail brands with good user reviews; nail products with famous brand ambassadors or partnerships; brands with a long history and reputation in the industry.







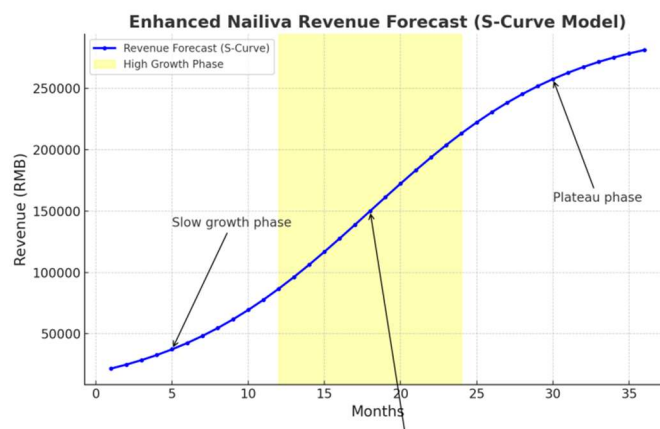
Brand	Product Feature	Price Strategy	Market Positioning	Marketing Channel	Marketing Planning	Customer Service	Advantage	Disadvantage
Sally Hansen	Quick-drying nail polish with a 3-in-1 formula, dries in 60 seconds.	About \$7.99, affordable.	For busy consumers, emphasis on quick drying.	Drugstores, supermarkets, online platforms, official websites.	Social media and influencer promotion.	Online customer service and user guide, virtual color testing.	Fast drying, easy to use, affordable	Some colors may not last.

Zoya	Non-toxic formulation, free of formaldehyde and DBP	\$10-12, high quality	Consumers who care about health and environmental protection.	Official website, professional nail salon, retail store.	Environmental group and health bloggers promote it.	Phone and online customer service, ingredient description.	Non-toxic ingredients, environmentally friendly packaging, long lasting.	Price are slightly higher for specific consumer groups.
ManiMe	Personalized nail stickers.	\$15-25, customized.	Young consumers who like DIY and personalization.	Official website, beauty salon	Social media and nail bloggers promote it.	Detailed tutorials and online support.	Personalized, easy to use at home.	With a high price tag, personalized patches may not be for everyone.
Chanel Le Vernis	-	-	-	-	-	-	Brand effect.	-

### 3.Financial planning

#### Nailiva Financial Plan and Revenue Forecast

The S-curve shows the projected revenue growth over the next 36 months, starting with slow growth, accelerating as the brand gains market acceptance, and eventually stabilizing as market saturation is reached.



#### (1) Revenue Forecast (Based on S-Curve Model)

The S-curve model is divided into three distinct phases:

- ❖ **Initial Slow Growth:** During this phase, brand awareness and market recognition are relatively low, resulting in slower sales growth. This is when additional marketing efforts are crucial to attract customers.
- ❖ **Accelerated Growth:** Once a certain level of market acceptance is achieved, sales will surge rapidly, marking the acceleration phase.
- ❖ **Maturity and Stabilization:** At a certain point in time, the market gradually becomes saturated, leading to a gradual slowdown and stabilization of sales growth.

Nailiva's revenue will primarily derive from the following sources:

- ❖ **Product Sales Revenue:** This includes both online and offline sales of nail beauty products (such as nail tips, care products, and customized services).
  - **Online Sales Channels (e-commerce platforms like Tmall, JD.com, Amazon, etc.):** It is projected to sell 5,000 sets of nail beauty products per month, with a unit price ranging from 100 to 150 yuan.
  - **Offline Sales Channels (partnerships with nail salons and beauty parlors):** It is anticipated to sell 3,000 sets per month through these channels, with a unit price ranging from 150 to 200 yuan.
- ❖ **Customized Nail Services:** It is expected to receive 1,000 personalized customization orders per month, with a unit price ranging from 300 to 500 yuan.
- ❖ **Subscription Model Revenue:** Through the introduction of nail subscription service (delivered regularly on a monthly or quarterly basis), it is projected to have 5,000 subscribers annually, with a monthly subscription fee of 200 yuan.
- ❖ **B2B Partnership Revenue:** Collaborations with OEM/ODM manufacturers for press-on nails production are anticipated to yield an annual sales order volume of 10,000 units, with a 10% premium rate per unit.

## (2) Cost Analysis

### Fixed Costs:

- ❖ **Production Equipment and R&D:** Initial investment of 2 million yuan, with annual maintenance and R&D expenses of approximately 500,000 yuan.
- ❖ **Rent:** 1.5 million yuan per year.
- ❖ **Employee Salaries:** Approximately 300,000 yuan per month.

#### **Variable Costs (Per Unit):**

- ❖ **Raw material Costs:** 40 yuan per unit.
- ❖ **Production Costs:** 20 yuan per unit.
- ❖ **Packaging and Logistics Costs:** 10 yuan per unit.

### **(3) Break-Even Analysis**

The formula for calculating the break-even point is:

$$\text{Break-Even Point (in Units)} = \text{Fixed Costs} / \text{Gross Profit per Unit.}$$

#### **Assumptions:**

- ❖ **Gross Profit per Unit:** Assuming an average selling price of 150 yuan and a cost of 70 yuan (40+20+10), the gross profit per unit is 80 yuan.
- ❖ **Fix Costs:** Monthly fixed costs are 500,000 yuan.

$$\text{Break-Even Point} = 500,000 / 80 = 6,250 \text{ Units.}$$

This means that approximately **6,250 units of products** need to be sold each month to reach the break-even point.

### **(4) Customer Acquisition Cost (CAC)**

Annual Marketing Expenses: 100,000 yuan.

Expected Number of Customers Acquired: 500.

$$\text{CAC} = 100,000 / 500 = 200 \text{ yuan per customer.}$$

### **(5) Customer Lifetime Value (LTV)**

#### **Assumption:**

Average Spend per Transaction: 150 yuan.

Annual Purchase Frequency: 4 times per year.

Customer Lifetime: 3 years.

$$\text{LTV} = 150 \times 4 \times 3 = 1,8000 \text{ yuan per customer.}$$

### **(6) LTV/CAC Ratio**

The LTV/CAC ratio is commonly used to measure the profitability of each customer. A ratio of

more than 3 typically indicates a strong profitability potential for the business model.

$$\text{LTV/CAC} = 1,800 / 200 = 9$$

This means that the lifetime value of each customer is **9 times** the cost of acquiring them, indicating a very **strong profitability potential** for the business model.

## 4. Risk and Challenges

### (1) Market Risk

- ❖ **Customer Acceptance:** As a nascent technology, bio-nail technology has **low market awareness**. Many consumers are yet to learn about or encounter this technology, particularly its advantages in terms of the safety and environmental friendliness of biomaterials. As such, **market education and brand promotion become crucial**. Nailiva must gradually increase consumer acceptance through consumer education, product promotion,, and experiential marketing. Additionally, word-of-mouth marketing and leveraging influencers and KOLs (Key Opinion Leaders) will be important tools to enhance consumer awareness.
- ❖ **Countermeasures:**
  - Conduct market promotions through social media, bloggers, and KOLs.
  - Organize offline experiential events to invite consumers to personally experience the uniqueness of bio-nails.
  - Publish educational articles and videos to help consumers understand the benefits of biotechnology and eco-friendliness.
- ❖ **Increased Competition:** As environmental protection and health consciousness continue to gain traction among consumers, more traditional nail brands may enter the bio-nail market. This will **intensify market competition**, particularly in terms of **pricing, design, and technology**. Nailiva needs to continuously introduce innovative products and services, build brand loyalty, and differentiate itself from other brands through differentiated competition.
- ❖ **Countermeasures:**
  - Emphasize technological innovation and product uniqueness to create differentiated offerings.
  - Strengthen brand positioning by leveraging eco-friendliness and health benefits as selling points.
  - Enhance service quality and personalized customization to improve user experience.

## (2) Technology Risk

- ❖ **Difficulty in Technological Breakthroughs:** Bio-nail technology (such as the application of silk-like proteins produced by engineered bacteria and hydrogels) requires **significant R&D investment**, poses **high technical challenges**, and necessitates **continuous innovation and improvement**. The technological barriers in the field of bio-nails are relatively high, and failure to sustain technological innovation may affect the market competitiveness of the products.
- ❖ **Countermeasures**
  - Increase the R&D budget to ensure resources and support for the technical R&D team.
  - Collaborate with renowned biotechnology research institution or universities to jointly develop new technologies.
  - Establish a technological patent protection system to ensure the uniqueness and non-replicability of innovation outcomes.
- ❖ **Material Supply Chain:** Bio-materials (such as silk-like proteins, hyaluronic acid, etc.) require **stable supply sources**. However, any fluctuations in the supply chain, especially supply shortages or price fluctuations of key materials, can **impact production schedules and costs**. Therefore, the management and risk control of the material supply chain are particularly important.
- ❖ **Countermeasures:**
  - Establish long-term cooperation with multiple suppliers to reduce dependence on a single supplier.
  - Pre-stock key materials to mitigate the risk of supply fluctuations.
  - Search for alternative bio-materials to ensure production continuity and cost control.

## (3) Operational Risk

- ❖ **Supply Chain Management:** Nailiva engages in **global procurement** of eco-friendly materials and production equipment, leading to a high degree of complexity in managing its multinational supply chain. **Delays or instability** in any of the raw material sourcing, logistics, and production processes can affect the entire production cycle. Additionally, changes in **tariff policies and cross-border logistics issues** may increase cost.
- ❖ **Countermeasures:**
  - Establish alternative supply chains in key regions to address sudden supply issues.

- Forge long-term partnerships with logistics companies to ensure efficient transportation and tariff handling.
- ❖ **Expansion Management:** As Nailiva expands its business, **managing** diverse online and offline sales channels, suppliers, and a global production network becomes **increasingly challenging**. The varying regulatory policies, market environments, and consumer demands across different regions **pose a challenge in maintaining a consistent global brand experience**.
- ❖ Countermeasures:
  - Establish a global operations management team dedicated to addressing operational needs in each regional market.
  - Maintain operational consistency through cross-national team collaboration and standardization of business processes.

#### **(4) Exit Strategy**

- ❖ **Mergers & Acquisitions:** Once the brand reaches a certain scale, an exit can be considered through mergers or acquisitions by major beauty brands, such as L'Oréal or Estée Lauder.
- ❖ **Technology Licensing & Collaborations:** Partial asset exit or cooperation revenue can also be achieved by licensing Nailiva's bio-nail technology to other nail brands or related companies.