

Nirvana Aerial Solutions Marketing Plan

00111422, 00111417, 00111416

BPA—(500) Global Marketing Team

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Part I—Synopsis

This marketing plan focuses on the expansion opportunities for Nirvana Aerial Solutions (NAS) in Louisville, Kentucky within the next one to three years, with considerations of international expansion within the decade. **Section II** identifies NAS's mission, vision, three-phase expansion goals, and financial goals. In **Section III**, the customers of real estate aerial photography are segmented into four groups, and an analysis of the NAS's feasible target group, the real estate agents, is conducted, followed by an analysis of the target group's three needs in terms of service and one need in terms of price which we should aim at satisfying in the rest of this marketing plan. **Section IV** explains our financial predictions and strategies for NAS, and **Section V** presents the competitive landscape of the aerial photograph industry and of the smaller real estate aerial photography field, and offers three key differentiations which will help NAS to outrun market leaders in the industry and direct competitors in the real estate field. Based on Sections III to V, **Section VI** presents a marketing mix which summarizes our key strategies to target the intended customers' demand and tackle competition. Then, **Section VII** analysis current trends in Louisville (which some of our prior sections are based on) and identifies five nations for NAS's future international expansion. Then, based on the marketing strategies identified in the prior sections, **Section VIII** presents the organizational structure of NAS in Louisville and in the international phase, and **Section IX** presents marketing timelines. Lastly, **Section X** presents NAS's optimum success criteria.

Part II—Company Goals

NAS's **mission** is to offer a variety of high-quality and cheap aerial photography services (including photos, videos, 3D photogrammetry, etc.) to commercial and residential real estate agents, to satisfy rising demands for aerial photography in the global real estate market. NAS' **vision** is to shorten the times that real estate properties are left on the market to create seamless transitions for real estate owners. In the future **one to three years**, NAS will target a local market in Louisville, United States (U.S.); **within the decade**, NAS will expand internationally to countries with fast-growing real estate: India, Philippines, Brazil, China, and United Arab Emirates (U.A.E.). **By 2033**, NAS will have established mature services in these five nations and will expand further depending on market conditions. **Financially**, NAS aims at a profit margin of 15~20% and at obtaining an accumulative profit of \$1,000,000 by 2025 to prepare for an international expansion.

Part III—Description of Customers and Their Needs

The market is classified into 4 customer groups based on **5Ps benchmarks** (potential, property type, place, purpose, and price acceptance) as shown in Fig. 3.1. Based on the figure, Group 1, specifically, the residential real estate agents located in Louisville with medium price acceptance and demands for photography as well as 3D photogrammetry, is the target customer group for NAS.

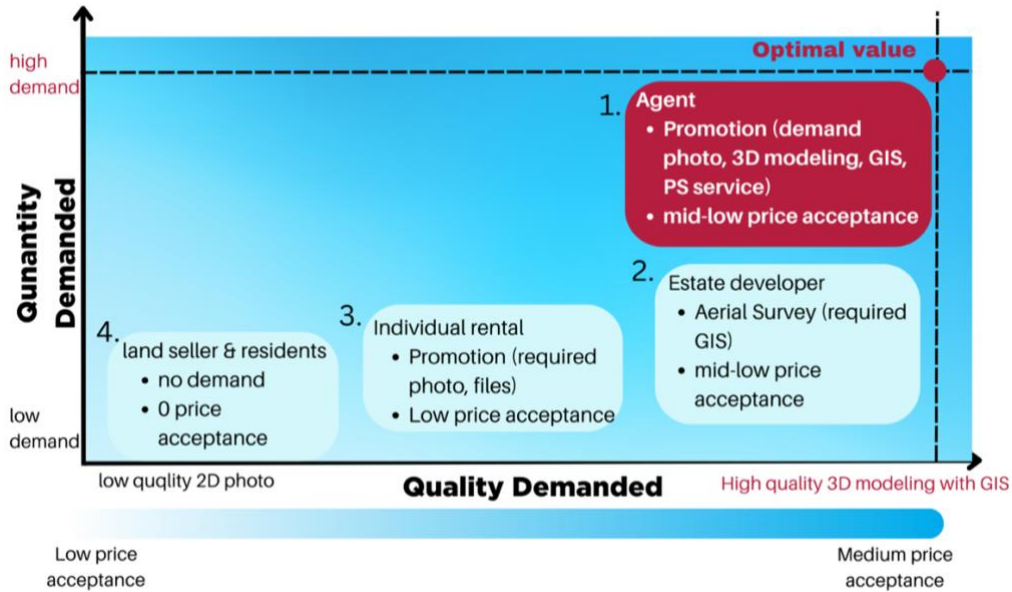


Fig. 3.1: 4 customer groups in the real estate aerial photograph market.

For **place**, Louisville is chosen considering its seller market with significant demand and growth potential in the real estate market, later explained in Section VII. For **property**, residential real estate is primarily targeted, but commercial real estate is also within the NAS's service scope. This is because residential real estate has a relatively large demand and growth potential when compared to commercial real estate. To illustrate, Louisville's population will grow by 12% over the next 15 years to 872,000 people due to the Southern migration, resulting in a rising demand for housing which will increase home sales (explained in Section VII) (Rohde). In comparison, research estimates that the rise of the hybrid office will decrease offline office demand and lead to a 28% devaluation of office buildings in the U.S. (Rohde). However, including commercial real estate within NAS's scope of service will not incur additional costs since the labor and capital for commercial photography are almost identical to those for home photography. Moreover, commercial activities will eventually revive which provides demand for commercial real estate photography in shopping malls (Bogdanova).

Great **potential** also exists for targeting real estate agents since there is a current shortage of their demanded service. Even though the demand for 3D-modelled homes increased by 563% from February 2020 to early 2021 and 61.3% of agents believe that high-quality aerial photography (photograph, photogrammetry, and PS) is critical to selling a home, only 35% of agents employ professional photographers (Gronbacher; Mariotti). This means there is an increasing customer demand not yet satisfied, which NAS can aim to satisfy. Furthermore, from a global perspective, aerial photography for residential estate agents in Europe, Africa, and South Asia is underdeveloped and has significant development space; even though China has a large aerial photography market, it is centralized in agriculture instead of real estate, though China is expected to have a booming real estate market ("Drone Photography Services Market Outlook"). Therefore, the global demand for real estate photography by agents is not yet satisfied, indicating a great opportunity for NAS to target real estate agents as its customers.

The needs of the customers, the real estate agents, can be analyzed from their primary business goal, which is to increase real estate transactions while decreasing operational costs. Firstly, the customer will demand high-quality exterior aerial photos to promote the residential real estate's value and attractiveness. Secondly, interior services with floor plans and 360° interior photographs are essential for agents to gain essential information about the house. Thirdly, PS services with visual enhancement, 3D virtual tour, GPS coordinates, and 3D photogrammetry is a rising demand by real estate agents to attract house buyers ("Drone Photography Services Market Outlook"). Additionally, the customer will always demand cheaper services, primarily due to the agents' medium **price acceptance**. Thus, long-term contracts with discounted prices and cheaper single services can make NAS's service more attractive to its customers.

Part IV—Description of Pricing Strategy

All Elements Affecting the Production Process

<u>Revenue</u>	Electricity	Customer service
Contract	<u>(Operational cost)</u>	Human resources department
Single Packages	Store rent expense	Promotion department
<u>(Cost of Goods Sold)</u>	Promotion materials	Reparation
Licensed pilot	Client negotiators	Temporary purchases
PS staff	Junior lawyer	<u>(Tax & Depreciation)</u>
DJI Air 2S & XPS17 Laptop	Accountants	<u>Net profit</u>

Annual Fixed Cost in Louisville

<u>Item</u>	<u>Single Item Price</u>	<u>Other</u>	<u>Annual Cost</u>
1) Rent (100 square meters)			\$30,000.00
<u>2) Capital</u>	<u>Price per Capital</u>		<u>Total cost</u>
DJI Air 2S (3)	\$799.00		\$2,397.00
XPS 17 (2)	1,699.00		3,398.00
<u>3) Labor</u>	<u>Salary per Labor</u>	<u>Social Security</u>	<u>Total Cost</u>
Employed drone pilot (3)	\$108,000.00	\$6,696.00	\$344,088.00
Photogrammetry & PS staff (2)	45,000.00	2,790.00	95,580.00
Customer service personnel (2)	35,000.00	2,170.00	74,340.00
Junior lawyer (1)	72,000.00	4,464.00	76,464.00
Accountants & financial worker (3)	63,000.00	3,100.00	200,718.00
Human resources personnel (3)	33,000.00	2,046.00	105,138.00
Promotion department personnel (1)	30,000.00	1,860.00	31,860.00
Total			\$963,983.00

Annual Variable Cost in Louisville

<u>Item</u>	<u>Annual Cost</u>
Local freelance drone pilots	\$100,000.00
Temporary purchases	500.00
Electricity	1,152.00
Capital depreciation (35% annually)	2,023.00
Promotion materials	500.00
Repair & maintenance	300.00
Total	\$104,475.00

Annual total cost in Louisville = \$1,068,458.00.

Target annual sales of service in 2023: 10,000 (27 services per day). Target sales of Contract: **6,500**; target sales of Premium Package: **3,000**; target sales of Standard Package: **500**.

Pricing Strategy

Contract	Single Packages	
	Premium Package	Standard Package
Average price per service = \$110.00 (70% cheaper than a direct competitor, Hommati).	Price per package = \$170.00 (50% cheaper than Hommati).	Price per package = \$160.00 (57% cheaper than Hommati).

Estimated break-even point: **5,420** Contracts, **2,500** Premium Packages, and **420** Standard Packages sold; after **ten months**; revenue is \$1,088,400.00.

Total annual revenue = expected contract service revenue + expected single package revenue = $\$110 \times 6,500 + \$170 \times 3,000 + \$160 \times 500 = \$1,305,000.00$. Thus, **profit** = **\$236,542.00** and **profit margin** = $\frac{\text{Revenue} - \text{Cost}}{\text{Revenue}} = 18.1\%$ in Louisville after one year of operation, which is 2.5 times the U.S. average and is a “high” margin (“What Is a Good Profit Margin”). This will build up capital for us to enter the international market.

Home sales in Louisville are projected to grow by 5.2% annually (Ramaswamy). As a result, NAS’s future service sales in Louisville will continue to rise, though costs might rise accordingly due to more pilots and PS experts hired. By 2025, an accumulated net profit of \$1,000,000.00 should be achieved to prepare NAS for the upcoming international expansion.

In the international market, a total profit margin of 15-20% will still be NAS’s target, but margins may vary from country to country, as the primary rationale of our pricing is to be **cheaper** than NAS’s local competitors (demonstrated in the pricing strategy table where NAS’s services are more than 50% cheaper), which is explained in more detail the next section.

Part V—Competition

The aerial photography market is fragmented [Fig. 5.1], so it provides a place for small entrants to grow first in the U.S. and then globally. Fig. 5.2 shows the **global** market share among the leading aerial photography companies: the top nine aerial photography companies share the market mostly equally between themselves and with other minor players in the market. Also, in the **U.S.**, leading companies such as Nearmap Inc., Eagleview Technologies Inc., Cooper Aerial Surveys Co, and Vexcel Imaging Inc. share the marketing equally (“Aerial Imaging Market Size”). This fragmented market state suggests that the existing companies have relatively weak market power and customer loyalty, and the switching cost between brands is low, all of which favor small companies like NAS to grow by allowing customers to switch their purchases from existing companies to NAS.

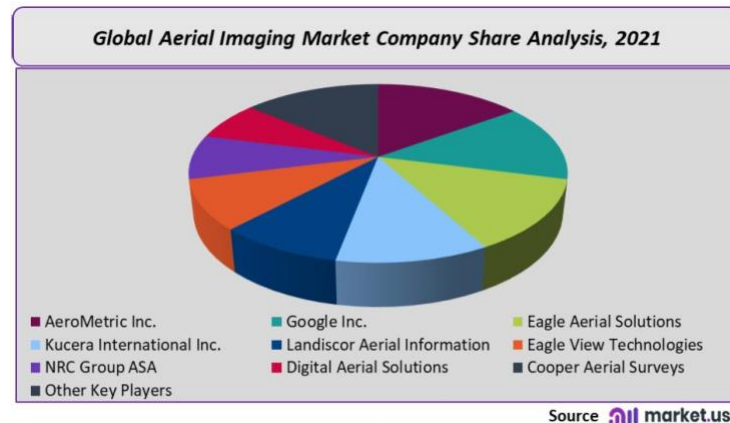
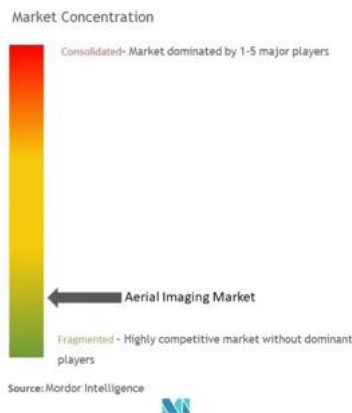


Fig. 5.1 (“Aerial Imaging Market”). Fig. 5.2 (“Automotive Interior Leather Market”).

Having established that the competitive landscape is feasible for NAS to operate and grow, NAS will need to focus on attracting more customers to its service. We propose three differentiation strategies to outrun the market leaders and NAS’s direct competitors in the real estate field: local service, exclusive focus on real estate, and cheap price.

In terms of the **global & U.S. market leaders**, these companies have established advantages in their scale, business-governmental bonds, and streamlined services, all of which are hard to outrun as a local company. Thus, NAS will specialize in areas in which the market leaders have compromised due to their large scale.

Firstly, companies such as Nearmap Ltd. And Eagle View Technologies serve photography for a variety of industries (e.g., construction, insurance, utilities) at the same time. As a result, their highly advanced drones used for construction surveying and even military purposes are far beyond the need of real estate agents, and customers frequently had to pay for the high price of excessive technologies. Some of the most used commercial drones, like the DJI Phantom 4 RTK, cost from \$8,000 to \$16,000 and include autonomous flight and extensive ground surveying technologies, none of which are necessary for simple real estate photography (Leslie; Pixpro; New York Times). Secondly, though there is a rising demand for low oblique shots by real estate agents and dealers, many leading companies don’t offer such service [the table below], particularly those market leaders in the U.S. (“Aerial Imaging Market Size”). Thirdly, many leading companies such as Eagleview Technologies serve a wide range of

geographical regions (e.g., the entire U.S.), causing its service to be costly and prolonged due to the pilots having to travel across cities to offer services (Eagleview).

Which Leading U.S. Aerial Photography Companies Offer Low Oblique Real Estate Shots

Yes	No
Nearmap	Cooper Aerial Surveys
Dronegenuity	Vexcel Imaging
	AgEagle Aerial Systems
	Ceres Imaging
	Dronedeploy

Thus, by offering **local services** within Louisville in the first one to three years of operation, and having franchisees established in every city after the international expansion in the next decade, customers will not need to wait a prolonged period for NAS's service nor pay the high price of pilots travelling between cities and nations. Moreover, by **exclusively targeting the real estate** agents, NAS will not incur high costs for unnecessary technologies, and will better fit the customers' demand for low-oblique real estate photographs, which makes NAS a cheaper and more specialized choice for the agents compared to the market leaders.

However, some small-medium-sized companies already specialize in local real estate markets across the globe, which pose direct competition to NAS despite the aforementioned differentiations. For instance, *Aerial State* is a local U.S. company offering real-estate media to agents in Kentucky. To combat competition posed by these direct competitors, NAS should use several cost-decreasing strategies to differentiate by offering **lower prices**. Firstly, NAS will hire a combination of long-term professionals and part-time freelance drone enthusiasts as NAS's drone pilots. By doing this, the long-term pilots guarantee continuous and reliable service for NAS's contract services, while the part-time pilots can manage Single Package services and some contract services while saving labor costs. Meanwhile, the part-time pilots bring their professional drones for photography which saves fixed costs for capital since NAS will only need to purchase drones for the long-term pilots. Secondly, NAS should select cheaper drones—DJI Air 2S, which can conduct high-quality photography and photogrammetry but at 5% the cost of the commonly used drones since it does not contain excessive technologies designed for more complicated missions. Thus, NAS's HR and capital choice will allow NAS's services to be **cheaper while still guaranteeing reliability and high quality**, which will make NAS more favorable compared with its direct competitors.

Part VI—Marketing Mix

Service & Price: NAS should offer the three services most demanded by NAS's customers analyzed in Section III, and at a lower price than its competitors. We recommend three main branches to NAS's services and three charging methods [Fig. 6.1 & 6.2]. The prices of our Package services in Louisville are more than 50% cheaper than NAS's direct competitor [Fig. 6.3], and our Contracts more than 70% cheaper per service.



Fig. 6.1: three branches of NAS's services.



Fig. 6.2: three charging methods.



Fig. 6.3: prices of similar single packages offered by Hommati, a direct competitor (Hommati).

Place: Within the **first one to three years in Louisville** direct distribution of NAS's service is applied: services are directly offered to real estate agents. Because NAS is local to Louisville, the city and its local agents can be well understood and contacted without the need for service intermediaries. However, as NAS **expands internationally** later in the decade, the organization of employees may become difficult, and business operations may be hindered in foreign regions as the local customer habits are not well understood. Thus, NAS will self-operate service centres in one to two major cities in each ideal nation (see Section VII) to establish a brand name, and then NAS will welcome local franchisees to step in as service intermediaries and expand to more cities. Furthermore, selective distribution is applied during the international expansion: services will only be offered in regions with considerable real estate growth potential, and in regions where drone permission is granted (these will be explained in Section VII).

Promotion: Customers go through three actions when making a purchasing decision:

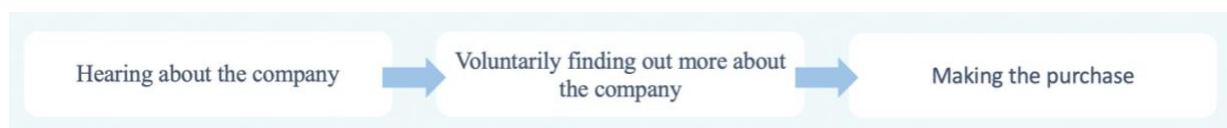


Fig. 6.4: three actions that customers go through when making a purchasing decision.

The goal of our promotion is to attract NAS's potential customers to proceed to the final purchasing action, so NAS should apply corresponding promotional tactics at each stage. In the **first stage**, we will use email promotion to introduce itself to real estate agencies to help the customers get to know NAS; we will also use advertisements on LinkedIn and targeted

advertisements based on Google search results. These advertisements are exclusively delivered to NAS's potential customers which will increase the effectiveness of our promotion. In the **second stage**, NAS will offer up to two free trials of its service and showcase strong slogans (such as "the best aerial photography service") to attract the customers' interest to find out more about NAS on our official website. In the **third stage**, when the customer has already entered the NAS website, we will exhibit NAS's past service examples, and will offer discounts during the first three months of the service to highlight NAS's high cost performance brand name. This will eventually stimulate the purchasing decision.

Part VII—Economic, Social, Legal, and Technological Trends

Technology: In general, the use of drones for aerial photography has been increasing over the past decade, and drone technology itself is developing fast and getting **cheaper** due to high demand and high competition in the drone industry (FlyGuys). Moreover, recent drone innovations have focused on **photogrammetry and 3D modelling** at a **low cost**, an example is the DJI Air 2S (Pixpro).

Legal: Commercial drone use in most countries requires a pilot exam or license. In the U.S., to fly drones commercially, "[the pilot] must obtain a Remote Pilot Certificate – Part 107 license from the FAA and pass the "Unmanned Aircraft General – Small (UAG)" (FAA); U.A.E. also requires drone pilots to pass a GCAA exam, and commercial flights need to hold a GCAA drone Registration Certificate ("Drone Laws"). More tight regulations are seen in India and China, where DGCA or CAAC permissions, respectively, are required which are only granted for specific locations (Cole; Drone Laws). As a result, only pilots with correct licenses should be hired, so autonomous drones are not required; later, as NAS's operation expands internationally, business investments should only be made in any country after drone permissions are granted.

Within the next one to three years: Louisville, U.S.

Economic: Home sales are declining. In the U.S., rising interest and mortgage rates amid tightening policies, as well as decreased housing affordability after the pandemic housing surge, caused a **17.5% decline** in national home sales by June 2023 which will decrease the demand for NAS's service (Redfin). Despite this unwelcoming environment, a few "steady" cities in the U.S. are expected to have rising home sales within the next one to three years. An example is Louisville, where expected home sales are expected to **increase by 5.2%** due to it being the largest city in Kentucky and having a stable housing market (Ramaswamy).

Social: Since 2020, there has been "a Southern migration trend" throughout the U.S. This is caused by factors including "housing affordability, increased remote working, and older Americans retiring" (Winters). As a result, Louisville, the largest city in the Southeast state of Kentucky, also meets the social trend of rising housing demand in the Southern U.S., making Louisville feasible to be NAS's initial target market.

Next ten years: U.A.E., China, India, Brazil, Philippines

Economic: Global economic recovery will pick up by 2025, although it is currently sluggish due to high inflation and tightening policies (Bogdanova; OECD). By then, real estate transactions will be more active for NAS's business to expand globally.

Social: Once recoveries pick up, real estate sales will rise the fastest in U.A.E., China, India, Brazil, and the Philippines due to their increasing civil engineering and maturing real estate markets (Andrews). Thus, U.A.E., China, India, Brazil, and the Philippines (later denoted as “NAS’s Five Nations”) will be targeted during NAS’s first international expansion within the decade. However, most of these countries lie in the New World with varying per capita wealth and acceptance to price (ie. U.A.E. with wealthier markets compared to India and the Philippines with a lower price acceptance). Thus, NAS’s service and price in each nation will be customized based on NAS’s key differentiation of offering cheap but high-quality services compared to its local competitors and its target profit margin of 15s-20%.

Part VIII—Human Resource Requirements

During the initial one to three years of operating within Louisville, the organizational structure will follow Fig. 8.1, with the CEO directly controlling every department. After NAS expands to other nations by 2025, a combined organizational structure of Fig. 8.2 & 8.1 will be used. During the international phase, NAS will have service in numerous cities within NAS’s Five Nations, and each city’s operation will be handled by the city’s franchisee (blue box in Fig. 8.2); then, the organizational structure below the franchisees will again follow Fig. 8.1, only that the handler of each local department is no longer the CEO but the franchisee of each city.



Fig. 8.1: initial organizational structure & organizational structure below each franchisee after international expansion.



Fig. 8.2: central organizational structure after the international expansion.

Market Strategy Committee and Investment & Consulting Department: in charge of gathering market trends & new customer demands and executing & planning investments following marketing plans. **Regional Operation Managers:** in charge of all franchisees in each nation, with at least five years of working experience. **Service Department:** deliver NAS's aerial photography service and supplementary customer services. All pilots should be locally licensed. The technical research & planning group will be established after the international expansion, in charge of finding the newest technologies with the best cost-performance. **Financial Departments:** in charge of accounting costs, expenditures, and revenues, and the paying of taxes. **Local Financial Departments** will report to the **Head Financial Department**, where auditing will be conducted for all local accounts and general expenditure plans will be made. The auditor must have a credible background. **Promotion Department:** in charge of promoting NAS's services by arranging meetings and free trials with agents. Young employees are encouraged, to catch up with current trends of promotion. **Legal Department:** in charge of drafting contracts and executing service packages with NAS's customers. **HR Department:** in charge of recruiting, training, and paying wages. This department will not be established during the first few years when the business is limited to Louisville and employee number is low.

Unless otherwise stated above, all employees should have a college degree and one year of immediate working experience or three years of gapped working experience in related fields.

Part IX—Marketing Timeline

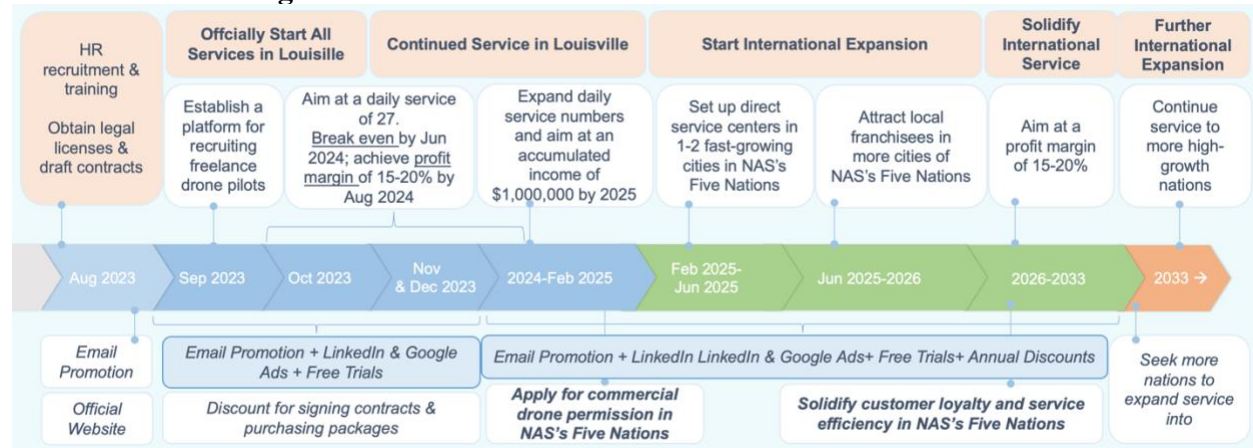


Fig. 9.1: marketing timeline for NAS from 2023 to 2033.

Part X—Methods of Measuring Success

Quantitatively, NAS's financial success is achieved if it breaks even after ten months of operation at an estimated revenue of \$1,088,400, reaches an accumulative profit of \$1,000,000 by 2025, and constantly maintains a profit margin of 15%-20%. **Qualitatively**, the success of NAS's service will be measured by customers reviews in terms of the services' cost performance, which consists of service quality and price satisfaction. A rating section will be opened on NAS's official website for customers to allow such an evaluation, and the post-service team will be responsible for reporting and following up on customers' rating.

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