TITLE: “Business Plan for Composter based product: NATUREPLUS”

PROJECT REPORT

Submitted for the course

Lean Start-up Management

TE1 MGT1022

By

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ACKNOWLEDGEMENT

We, Udit Singhal, Soumik Bhatta, Naman Sood, Varshit Jain & Souhardyya Biswas, take this opportunity to thank all the individuals who were instrumental in aiding us to complete this project successfully. Firstly, we thank our batch mates for encouraging us to complete this work. We thank our professor, **Dr. D Vincent Herald Wilson** for not only giving us this opportunity to display our skills but also for encouraging us and guiding us throughout the entire process of compilation of this work.

Lastly, we would like to thank the VIT University management for giving us the opportunity and resources to carry out this project work at the VIT University.

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1. EXECUTIVE SUMMARY

Product Description/Objective

NaturePlus is a startup which aims to reduce the waste production and waste disposal issue plaguing India. We aim to change the way food waste disposal is viewed and dealt with in India. With our talented team of researchers and product designers we aim to provide waste management solutions across the company.

Target Audience

NaturePlus line of products and solutions are designed to integrate themselves into various trophic levels of our society. Our primary range of products aim as composting food grade waste and providing alternative fuel solutions and manure for organic farmers and restaurants. We also have society/ housing wide solution projects for large scale waste management and energy generation.

Competition

The field of food grade waste management and energy generation being a relatively new sector, NaturePlus has very few competitors in the market. Most competition comes from large scale composter solutions with semi atomized systems and small-scale manual composters. The Competition is highly regionalized and key market opportunities lie in Eastern and Southern India.

Risk/Opportunity

With every investment comes a risk, NaturePlus is no exception to that. However, our team has designed workflow and planned meticulously for minimizing the estimated risk factors while maximizing on the relatively unexplored and ripe market availability

- The challenge of a relatively unexplored market and unaware customer base is one of the major roadblocks to our operations, amongst considerations of market penetration and customer retention
- However, the raw potential of the food and beverage sector with a large customer segment who are in need of waste management solutions and alternative energy sources for their operations. Coupled with this, the boom in the public opinion of ecological awareness and consumer awareness of organic produce is a key factor enticing the market towards availing our service

2. COMPANY DESCRIPTIONS

a. Company Name: NaturePlus

b. Mission Statement

NaturePlus aims at being the cornerstone of organic waste management solutions in India. Recycling and reducing when you need it and where you need it, NaturePlus aims to provide a multitude of products and services to make waste disposal more appealing and rewarding.

c. Form of Business

NaturePlus is a multi-faceted startup looking to provide both B2B and B2C services across the board.

d. Trademark, Copyrights and Other Legal Issues

The logo NaturePlus © and all associated documentation and products, including **NaturePlus™** will be part and property of NaturePlus®.

Our **NaturePlus** units and other solutions will all come with trademark and patented designs.

e. Products or services

Our product is a biodegradable waste decomposer known as an '**NaturePlus**'. Kitchen waste generated will be put into the decomposer. Enzymes are used to degrade this waste within the decomposer at optimum conditions provided by the software installed on each bin. Organic manure is thus obtained as the end product of the biodegradable waste. This can be used in farms instead of chemical fertilizers by farmers for cultivation purpose. A nontoxic fuel supply can also be generated by this process. **NaturePlus** is a completely automated appliance.

f. Management

The company will work under a well-organized structure of board and executives, starting with our team members that have put into the idea of NaturePlus to fight the waste management issues in India and developing countries

g. Location and Geographical Information

The business location for the first company store will be in Vellore, Tamil Nadu. Later on, sites can be proposed for more stores in our hometowns MP, Delhi, Trivandrum and Chennai. Each will need approximately 500-700 square feet. The stores will be located on high traffic commuter routes and close to shopping facilities. The business will operate from Monday through Sunday. Hours of operation will depend entirely on the area and final location of each store.

h. Development Stage

Limited scale of the product is produced and sold to 5 major restaurants and a few minor ones. The manure obtained is collected back by the company and sold to the farmers in nearby village area through the government. The enzyme was revised based on the operation of the compost bin and made more easily and readily usable with lesser time period for composting. The software was also updated and modified and tested to obtain maximum productivity. The manure collected was tested to check for harmful contaminants. More digitalized method to check the pH and other properties of the manure formed are being developed. The success rate is studied periodically and improvements made.

i. Milestones achieved to date

- Business canvas model prepared and analyzed
- Testing components and trial runs phase I
- Successful Series A funding
- MVP development
- Acquisition of Alpha and Beta Tester Market Space
- Failure and success startup stories studied for improvement of our product
- Funding plan prepared
- Legal and regulatory tax environment in India studied
- Basic business plan on progress

j. Specialty business information

NaturePlus aims at providing tailored solution and packages for the user based on their waste generation capacity. The proprietary technology and easy-to-use device come together to provide an experience never witnessed before.

k. Financial Status

The cash generated from operating activities is good, as it is much greater than the cash paid to the supplier. This indicates that there are sufficient funds to meet the operating activities. The cash flow from investing activities -10,000 indicating that equipment was bought to meet the requirements. Cash flow from financing activity is good, indicating that, though the company is taking loans it is also repaying the loans previously taken. The overall cash available is good to meet short-term as well as long-term requirements.

3. INDUSTRY ANALYSIS AND TRENDS

a. Size and Growth rate of Industry

Concerned industries:

- **Waste Collection**:

  Revenue for the Waste Collection Services industry has grown steadily over the five years to 2020. Over the five-year period, the Waste Collection Services industry has benefited from rising industrial, construction and commercial business activity.

  Expansion in these sectors has led to greater waste production, thereby generating demand for industry services. Furthermore, growing interest in solid waste recycling and renewable energy generation from solid waste streams has created many opportunities for the industry to generate revenue from waste management solutions.

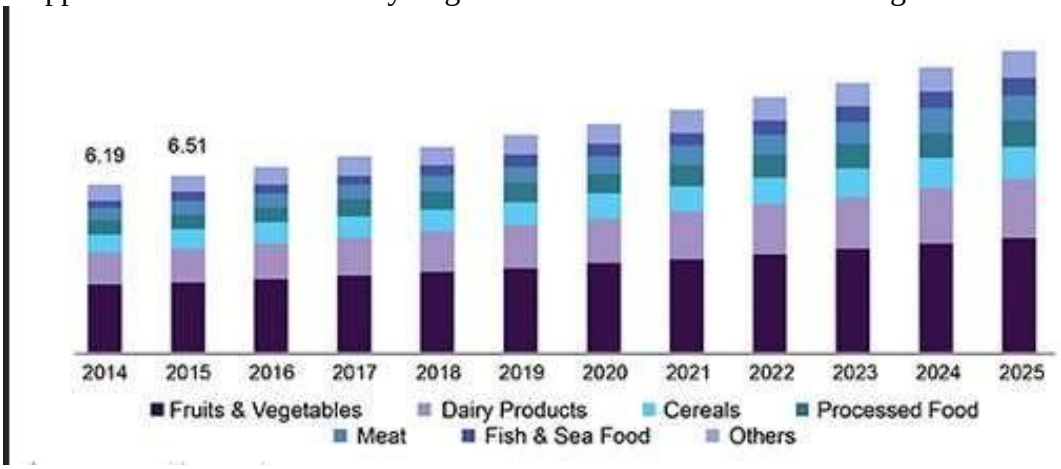


Fig 1: Projected global waste management market size from 2014 - 2025

b. Industry Maturity

Waste management global market maturity is still very low outside of Europe, and North America. This is due to the lack of stringent adoption of WM services A long-term waste management contract is somewhere between a 10–25-year period

APAC and LATAM are witnessing a gradual transition towards proper WM services due to efforts by large global buyers to consolidate supply bases. The market is mature in Sweden, where energy is being generated very efficiently. **C. Sensitivity to Economic Cycles**

The waste management industry is currently in its **expansion** stage in the economic cycle. For this reason, our product would be able to successfully bring attention in the industry as everyone is looking at it. Once the economic cycle reaches the **peak** stage, it would be marvelous for our product will boom and sales would increase by a lot.

Once the economic cycle reaches the **contraction** stage, our sales would decrease and reach a saturation point.

d. Seasonal Factors

As a product-based startup our revenue isn't greatly affected by environmental fluctuations. The main seasonal considerations come into play when considering the sale of compost to the farming community.

Due to the seasonal nature of crop cultivation on India we may be faced with scenarios wherein we may not have a sizeable customer base for our produce. Therein, the company needs to make consideration for storage space for excess produce or consider the option of exporting the produce to abroad.

e. Technological Factors

Components Required:

- **Heaters:**
  Buy directly from the various companies that manufacture it **like Elmec Heaters and Controllers, Indus Heaters, Supreme Industrial Heaters, etc**. For our startup, the heater has to be custom-made to fit and perform efficiently in our product – the composter. For this to happen, we need to provide the blueprint of the heater we want to one or more of these manufacturing companies and bid them against each other to get a greater number of units produced at a lower cost, so that the money expenditure on components is reduced. The technological advances in heating methods are undergoing drastically changes and the cost to implement it is **estimated to go down by 25% over the next five years, which is profitable for us.**

- **Monitors:**
  We would start with a LED display monitor on the front external side of the composter, to give basic information and provide access to the utilities. For the supply, we are in talk with some of the major monitor manufacturers like **BenQ, LG and Asus**.

- **CO2 detector:**
  Sensors available online on Amazon for interfacing it with our microcontroller.

- **Casing, thermal insulation and blending blades:**
  We decided to put up a contract **with Llyod Insulations India Limited**, a metal construction company based in India which helps in building cases and designing and manufacturing thermal insulation for products. This field is prone to technological advancement, which would help us in due time.

- **Enzymes:**
  This is a major component without which the waste management cannot take place. The major companies involved in selling enzymes are **Novoenzymes, AB Enzymes, Aum Enzymes.** These companies are not based in India, so getting the enzyme component would be a bit **challenging** as we have to import the enzymes and **shipping charges and tax would be significantly higher.**

f. Regulations/ Certification

In 1996 the Environmental Protection Agency (EPA) began licensing certain activities in the waste sector. These include landfills, transfer stations, hazardous waste disposal and other significant waste disposal and recovery activities.

- **Technical competence**

  This generally requires involvement of the Waste management training board WAMITAB. There is a requirement that managers of the facilities have obtained the relevant C Certificate of Technical Competence (CoTC) in which there are a number of levels.

- **Relevant offences**

  That the company, or persons acting for the company, should not have any summary convictions relating to provisions of regulations affecting the industry. A license can be subsequently revoked if a license holder has ceased to be fit and proper by reason of this having been convicted of a relevant offence.

- **Financial Provision/Security**

  The applicant would not be regarded as fit and proper if it appears to the waste regulation authority (WRA) that: He has not made financial Provision adequate to discharge the obligations arising from the license he either has no intention of making it, or is in no position to make it.

  As the provision is based on license conditions, which are variable depending upon the operation, financial provision will be variable. In the case of landfill operations these funds will also be expected to cover the post-closure period where continuing expenditure might be expected for: monitoring replacement of pollution control equipment, and site restoration.
  Security (usually in the form of insurance) must also be provided to cover eventualities that would be likely to have higher costs than those planned for in the ordinary course of business, e.g., failure of a landfill containment causing pollution of water courses.

  The issues of risk are discussed between all parties involved in the application, i.e., the applicant, WRA and the provider of the cover to decide:

  a. What event would trigger payment
  b. What specific works or other measures are to be covered
  c. The amount of the appropriate cover

  Ultimately the WRA needs to be satisfied that adequate cover for risks has been provided; to reinforce this it may be included as part of the license condition

- **Sales Tax License**

  There are two reasons you need a certificate of resale (in other states, this may be called a "seller's permit" or a "certificate of authority"). First, any homebased business selling taxable goods and services must pay sales taxes on what it sells. The definition of a taxable service varies from state to state. Depending on individual state rulings, both the parts and labor portions of your bill may be taxable.

  Sales taxes vary by state and are imposed at the retail level. It's important to know the rules in the states and localities where you operate your business because if you're a retailer, you must collect state sales tax on each sale you make.

Registrations:

- **Company or LLP Registration**

  Most businesses in India are started as proprietorships or partnership firms, without any registration from the Central Government. The Ministry of Corporate Affairs regulates the registration of a company and LLP. Once, a company or LLP is registered, the entity would have a separate legal identity and the promoters would enjoy limited liability protection. Further, the business would also become easily transferable and the entity would have perpetual existence. Hence, before starting a business, its best to consult an expert and register a company or LLP.

- **GST Registration**

  All types of entities and individuals who have an aggregate annual turnover of more than Rs.20 lakhs in most State and Rs.10 lakhs in Special Category States are required to obtain GST Registration. Further, any person supplying goods involved in intra-state supply is required to obtain GST Registration, irrespective of turnover. In addition to the above criteria, various other criteria have been provided under the GST Act, establishing the criteria for GST registration. It is important for all Entrepreneurs to understand the criteria's and obtain GST registration within 30 days of starting a business

- **Udyog Aadhar Registration**

  This is a registration available for entrepreneurs who want to start and operate a small business – micro, small and medium enterprises. The eligibility criteria for obtaining Udyog Aadhaar registration is based on the investment in plant & machinery made by a manufacturing concern or investment in equipment made by a service provider. Once, Udyog Aadhaar registration is obtained for a business, it can enjoy various subsidies and schemes specially provided by the Government for helping small businesses in India.

- **FSSAI License or Registration**

  "Food safety and standard authority of India" (FSSAI), is responsible to verify the safety and standardization of food products nationwide. Retail stores, restaurants, modern trade outlets, kiosks and consumers alike look for this five-letter word in their food packets or containers. Under FSSAI, the license or registration is divided into three categories namely: FSSAI Central License, FSSAI State License and FSSAI State Registration

- **Import Export Code**

  Any person involved in import or export of goods/services from India must obtain Import Export Code from the DGFT Department. To obtain Import Export Code, it is mandatory for the business to have a PAN and a Current Account in a bank.

- **Shop and Establishment Act License**

  "The Shop and Establishments Act", was created for regulating the conduct of business like the hours of work, child labor, payment of wages, safety and general health of the employees. Shop and Establishment Act license or registration is issued by the State Governments and varies from States. Hence, based on the State in which the business is situated, the concerned State Government authority must be approached for obtaining Shop and Establishment Act License.

- **Gumastha license**

  If you are planning to start a business in the state of Maharashtra, you must obtain a Gumastha license. To procure it, one needs to possess the following documents;

  PAN Card
  An Address proof or a no-objection certificate from the landlord Application letter in the prescribed format to the Municipal Corporation of Greater Mumbai
  Authority Letter for Business
  Government Prescribed Fees for a partnership Firm
  Memorandum and Article Of association
  Certificate Of incorporation of the Company
  Director's ID and Address proof

- **Other Licenses and Registrations**

  Certain types of business that involve aspects of dealing or providing insurance, financial services, broadcasting services, defense related services, etc., would require approval from regulatory bodies like Reserve Bank of India, IRDAI, etc., Further, a business may also have to obtain permits from the fire department, or the pollution control board, or maybe the local healthcare system. It all depends on the type of business you are willing to operate. Hence, prior to starting a business, make sure you discuss your business with a Professional to determine and understand the legal and regulatory requirements.

g. Supply and Distribution

- **Waste Management Industry:** Since we're contributing in the waste management industry, our product would also come under this industry, and hence we would operate only within the bounds of this industry. For low overhead costs, we would try to keep the cost of our product to be less. With the right partners, we could start our supply distribution wholesale business at $500-thousand-dollar investment.

- **Mode of supply and distribution:** We would supply both online and offline. Foonline, we are in talk with some of the largest e-retailers in India: Amazon and Flipkart. They have warehouses in all major cities and since our main manufacturing unit would be placed near a metropolitan area, the shipping charges would be light. for offline, there aren't many retailers in this field who sell composters as such. Hence, we would open up our own shops but in limited cities (which would increase as the business grows).

- **Warehouse space:** Warehouse space is costly and hard to find in a developed city, however it is way easier at the outskirts of a city where inhabitants are less. The cost is lesser by 57%, however we need to keep in mind that transportation charges would be more. We need warehouse space to build up our inventory, as we scale through our first product.
- **Licensing:** Two major licenses are necessary to execute this business. They are: **Shop and Establishment Act License, Sales Tax License.** Without licensing our product, we cannot sell it legally.

- **Advertising:** We would be advertising about our product via **roadside posters, Social Media marketing, handling out pamphlets, Search Engine Optimization** to bring in more customers and hence increase the revenue for the business. Almost 25% of the gross profit would be reinvested into marketing.

h. Financial Characteristics

- **Depreciation:** Manufacturing is more capital intensive, with owned fixed assets comprising a high proportion of total assets. Thus, there are more assets to be depreciated. In addition, many smaller retail stores lease their buildings for periods that do not require the leases to be capitalized. This leads to less depreciation and more rental payments. Long-term leases are often capitalized, however, so that the lease obligation will appear as long-term debt with a corresponding figure in the fixed-asset account.

- **Current Ratio:** Retailers usually do not carry accounts receivable because their customers pay cash or use credit cards, but accounts receivable is a significant item in the current assets of a manufacturing firm. Thus, retail stores may have lower current ratios than manufacturing firms. Because of the high proportion of inventory in a retailer's current assets, its acid test ratio also may be worse than a manufacturer's.

- **Net sales to net working capital:** Net working capital in this context means current assets minus current liabilities. The retail store turns its inventory (sales / average inventory) much more rapidly than a manufacturing firm — and even than a furniture store. This, coupled with no receivables, leads to a much higher working-capital turn. If the manufacturing company had used LIFO for many years to calculate its inventory,

however, the low valuation of the inventory might create an artificially high working-capital turnover. It would therefore not be a useful number to use in estimating increases in working capital that would be needed to support increases in sales.

- **Net profit before tax:** The manufacturing company turns its assets (sales / assets) fewer times in a period than the retailing company does. Therefore, to earn an adequate return on assets employed, the manufacturing company needs to earn more profit as a percentage of sales than the retailing company.

- **Net income to net worth:** Retail stores, despite a much lower profit margin on sales, can have a higher return on net worth because they have a higher proportion of debt compared with equity and also a higher turnover of assets. These industry comparisons illustrate the dangers of trying to apply universally accepted ratios. Each industry has its own characteristics that can affect ratios significantly. With practice in analyzing various industries, the analyst will become familiar with industry characteristics and interpret a company's financial ratios in the proper context. The Risk Management Association publishes the Annual Statement Studies: Financial Ratio Benchmarks, which provides ratio data by performance quartiles for a wide range of industries. Commercial banks use this information and may make the book available to customers. BB&T Bank, for example, offers small business owners a compact disk that contains performance data for similar businesses.

i. Anticipated Trends and Changes in the Industry

People are starting to pay more attention to the Waste Management Industry, and there's a lot of new projects and startups in this field. The current trend in the industry is to build the startup and then develop a block-chain system on top of it, which would advance India in the field of cryptocurrencies. The industry, as it grows, is going to adapt. It is going to become fully automated very soon. Right now, even the basic facility requires a human to collect and provide the waste and then the management process begins, but soon it will become such that robots would find and collect waste throughout the city, aggregate it and then transfer it to the facilities. Work has already been going on in this field, and some companies have made considerable progress, but it is not anywhere close to perfection. Some of the anticipated changes are that there would be a waste management unit, however small, in every man's house.

'***1000 years ago, people died of ice age, 70 years later, mankind might die by excess pollution and waste.'***

j. Global Industry Concerns: On the global scale, there are challenges to be dealt with, such as:

- **Regulation and traceability:** The manufacturing sector, like so many sectors, is facing increasing regulation and compliance measures. Everything from health and safety to waste management is surrounded in red tape. While it is undeniable some regulations are essential, other can be a massive burden to our manufacturing company – particularly when they vary from country to country.

- **Product development and innovation:** We live in a consumer driven world and as such product development and innovation moving at a lightning pace – to stay relevant, manufacturers need to be able to keep up with the pace. As companies vie to be first to market with a new concept, the temptation to compromise on quality can be huge, however manufacturers need to be stringent and avoid cutting corners.

- **The manufacturing skills gap:** The baby boomer generation is reaching retirement age and leaving a considerable skills gap in the workforce. While manufacturing firms are doing what they can to inspire a new generation of manufacturing employees and experts, there is still a considerable void when it comes to skills and experience.

- **Competition:** Companies like Ecobin, Smartbin who are already in this market. Diverting attention away from them towards our company will be a tedious job.

4. THE TARGET MODEL

a. Demographic / Geographies

The customer base for our product is:
Restaurants
Manufacturing Industries
University Hostels and Mess

Households: The composter that we would build can be used at households to overcome the problem of de-centralized organic waste, as mentioned above. An average Indian family produces 1.42 pounds of organic waste (in the form of fruit, vegetable, etc. waste) which can otherwise help us in our key activities such as Enzyme production. It is not possible to gather all the organic waste separately from all the households and cluster it together to be decomposed, other types of waste get mixed with it, and there are too many households hence it will not be scalable for a single organization, which is why instead of bringing the work away from the customers, we are bringing it to the customers.

Organic farmers: We chose to target the customer base who might need it the most, and whom other than farmers deal with the most organic waste on a daily basis. If possible, it would solve a lot of organic waste problems. Commercial farmers are put under the pressure of producing large quantities of cereals, fruits and vegetables within a short period of time.

University Hostels and Mess, Restaurants: In university hostels and mess, restaurants, amount of waste generated is increasing day by day and the space to dump it isn't increasing or expanding

b. Lifestyle and Psychographics

With the growing awareness about the need of recycling and being environmentally aware the lifestyle tends have evolved as, well. This observation is throughout the board, even in the case of India.

If we were to analyze our market survey on our primary customer base of restaurant and subsequently the customer base for this market as well, we came to some firm conclusions about the lifestyle and mental compulsions of the people and the food services they avail.

There are unique considerations for restaurants that affect the type of food waste produced and create both advantages and challenges that restaurant and foodservice companies encounter when looking to reduce or divert food waste. The type and amount of food waste generated by a restaurant is largely dictated by the restaurant concept. For example, food is less commonly consumed on the premises at quick- service restaurants in comparison to full-service restaurants. Similarly, specials and seasonal menus in full-service restaurants can result in the type of unsalable food being difficult to predict

However, there are food safety concerns and regulations for fresh versus packaged food that need to be considered—packaged foods are generally easier to donate because they have not faced as much risk of contamination. Also, transportation and storage infrastructure requirements are high for the successful donation of fresh food, and restaurants tend to have less storage space available than retail grocery stores or manufacturing facilities.

'Fast server restaurants generate lesser waste when compared to full-service restaurants. Full-service restaurants will be our primary paying customers. Also, since restaurants face transportation issues, we can market and sell a composter machine for each franchise of the restaurant'

The other major challenge facing many restaurants is the high number of locations for many companies and the prevalence of the franchise model within the industry. While a large number of locations can prove difficult to oversee, franchises pose even greater limitations to a corporate restaurant's ability to access or control food waste tracking data or processes

c. Purchasing Patterns

The concept our product is based upon has been a relatively unexplored line of thought in the minds of the general consumer. The Home scale waste disposal market is a relatively competition free market hence purchasing data is unavailable in India.

d. Buying Sensitivities

In an attempt at calculating the expected need of a product such as the one we as a company hope to provide, we conducted a survey for the food waste allocation across several metro countries

- 61% of diverted food waste from restaurants was recycled as bio-based materials / biochemical processing such as recycling used cooking oil
- The top barriers to food donations identified by restaurant respondents were liability concerns and transportation constraints (41% of respondents)
- The top barrier to food waste recycling identified by restaurant respondents was transportation constraints (44% of respondents)
- The areas of most investment across the restaurant sector are in food waste reduction and food donation (44% of respondents) In the past, many trade companies relied on two most common pricing strategies:
- "Cost plus" pricing which requires companies to make regular adjustments as their costs increase. Some cost charges like rent hike or collective bargaining agreement can, however, impact market participants in different ways thus forcing some companies to heave their prices more than the competitors.
- "Competitive pricing" is the second common pricing strategy. This strategy involves setting prices on the basis of price set by the competitors. This approach can, however, be problematic if the pricing does not reflect

imperative differences in what is being proffered. Moreover, this approach presumes the competition creates the most effective price for a product or service.

- Both of the aforesaid pricing approaches, however, share common failings. The most important one is the lack of critical information on what is willingly being paid by the consumers. Secondly, these pricing strategies depend largely on subjective judgment of the management instead of depending on data-driven empirical evidence determining the impact of distinctive pricing levels on demand.
- Projections for sensitivity in the case of our startup will depend on the existing competition market and assumed projections in price levels

Market Available Composter	**Price Point (In Lacs INR)**
VNS Enviro Biotechq Private Limited	2.5
Ecotech Chutes Pvt Ltd	2.75
Sree Ram Ecosystems (Unit of Sree Ram Generators**)**	2.4
SMS Hydrotech	10.59
Eco Support Private Limited	3.75

By going off on an average price point of 4.6 Lac INR for a unit for a community scale unit with moderate functionality (Composting waste and creation of non-hazardous material fit for waste or utilization in any sector without adverse effects).

We can clock the predicted increment at 20% and the sales increment at 8%
Thus, our pricing sensitivity at 0.4, leading to the prediction that the market entry and maintenance is critically dependent on our entry pricing for penetration and optimizing our value-added services to justify our prices and boost sales figures.

We've analyzed some enzymes who've made their information open-source and some of the data is:

Biozap enzymes - The ideal width of heap should be 2 to 3 ft. & height upto 1.5 feet.
Add dry waste to reduce the moisture level upto 50%, Under normal condition composting will be completed within 60 to 90 days. Dosage: 15gm / week / 10 kg waste

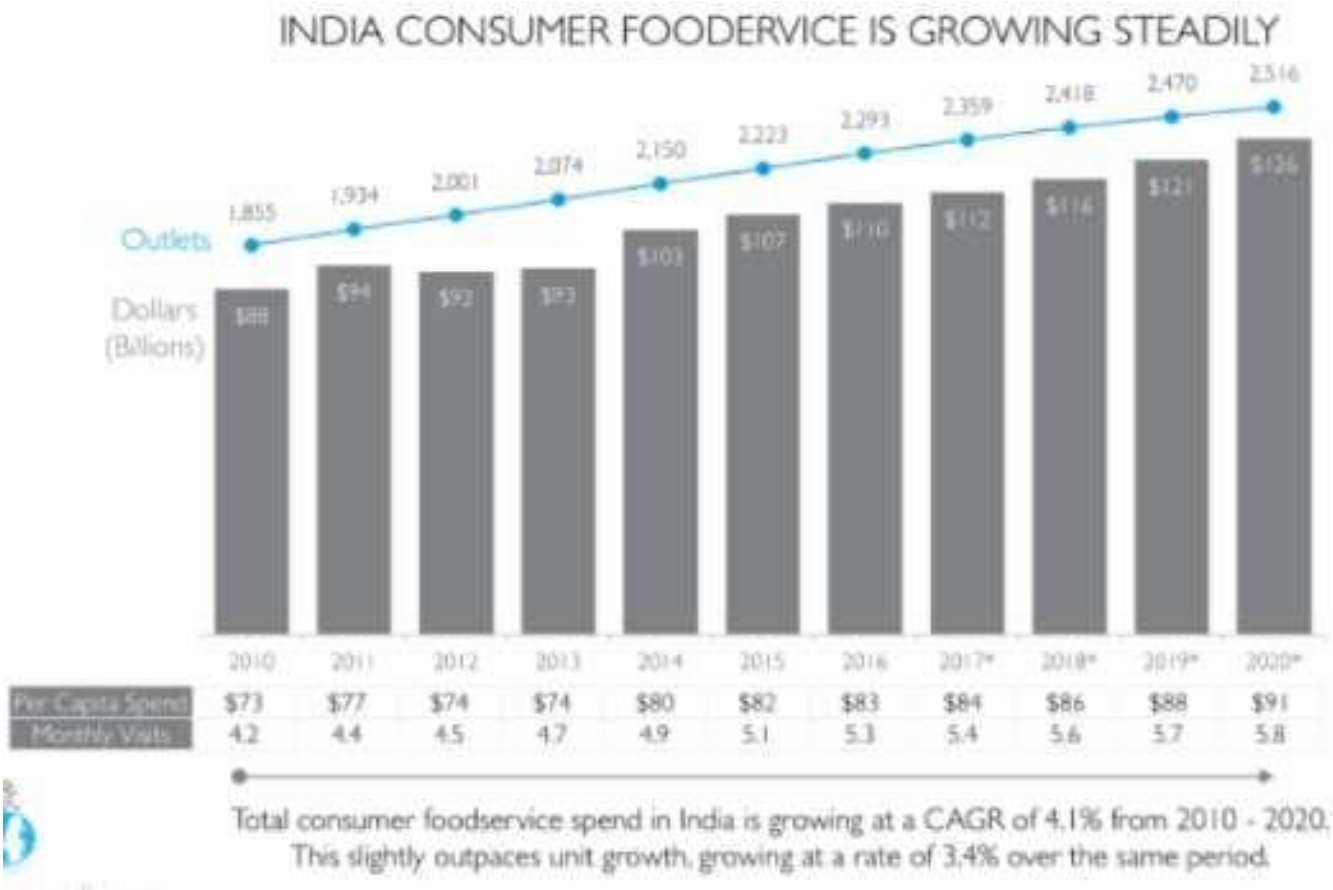
Magic microbes - 1gms of magic microbes' compost accelerator per kg of waste / 1 kg is required for 1TON of Organic Wet Waste. The powder can be mixed with water (quantity sufficient to make your waste pile just moist) before application to the compost pile. It is a dry mixture of bran and molasses that has been inoculated with beneficial micro-organisms, a carefully controlled mixture of microscopic bacteria, yeasts and fungi that work together to speed-up composting, suppress pathogens, prevent putrefaction and eliminate foul odors.

e. Market Size and Trends

In India, full-service restaurants command the largest market share, at 57% of sales. The next biggest category is QSR, at about 16%.

Considering the country's giant patchwork of cultures and cuisines, it's probably not surprising that about two-thirds of the restaurant units are loosely structured, small, independent eateries—referred to as "unorganized"—that often double as retail food stores. Only about two% of the total inventory of restaurants is branded—less than a tenth of what's seen in other countries with a more established foodservice industry.

But that's changing. As international, national, and regional players move into the market the momentum is shifting toward more chain-affiliated and standardized operations. A value-seeking mentality (to be expected, with median household income around USD 4,000 in 2015), marketing, greater mobility, and social media will all fuel more demand for QSRs.



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Within fast food, chains are outperforming smaller operators in India. Chain-affiliated QSRs ring up higher sales per outlet than independents, with chain transactions averaging USD 2.29 vs. USD 0.90 at independents. Many home-grown operators will need to modernize and standardize their operations if they want to stay competitive as the market heats up.

We observe that restaurants can be a reliable customer base as food industry has been an evergreen industry in spite of the large competition

5. THE COMPETITION

a. Competitive Position

At present, our market of eco-friendly composters has been focusing on providing a solution that requires the user to put the kitchen waste into the composter, then periodically checking on whether the process is going well and then taking the compost out as well as draining the solutions inside. The above process involves a lot of labor and this is not feasible in an environment where there is a lot of waste as in a restaurant.

Our main competition, EcoBin uses the following process:

- The system is a plastic bin which has been UV stabilized for providing strength.
- The user has to put the waste into this system
- The user will be provided with Bokashi Bran microbes and Coco Block for the composting
- The user has to check the mixture regularly if the waste is composting or putrefying.

On the other hand, our product is providing a completely automated system. Our product involves using a professional looking bin with inbuilt controls for starting the system, with inbuilt display panel for showing exactly how much time is remaining for completion. Our product uses enzymes rather than bacterial mixes which reduces the chance of composting failure and is also less harmful in a working environment. As the system is automated, no regular checks will be required, thus providing a seamless experience. Thus, our product will be different from the current market by providing a sophisticated and easy to use system that can give the user compost from their waste without hassles.

b. Market Share Distribution

In India, the present market is controlled by various companies. However, the composter companies mainly focus on the large-scale composting machines, which are big and bulky and are used for wards of the city. The smaller sized machines, although they exist are not a major revenue puller. This has caused many smaller names that have entered the market and made a name for themselves. They are:

- Smartbin
- EcoBin
- Greenviron India
- Bijson Innovations Pvt Ltd
- Earth Care Equipments Pvt Ltd
- ECOMAN – Foodie

The first three companies mentioned are similar to our ventures. They are start-ups founded in the early 2010’s which have given them a bit of time to settle in the market. The last three companies are major players in the large-scale composting market and have just started focusing towards the market of small, household composters. ECOMAN is the company that has come up with the product FOODIE which is the first small scale composter from the big players.

c. Global Competition

On a global scale, the competition has grown in this field. There are many companies already making a composter that can provide for the household. The bins are more sophisticated than those present in India at present. However, there are only one or two players in the market who provide an automated system like ours, thereby giving us an opportunity to enter the market abroad as well. Most of these companies' manufacture in the USA thereby also giving us an edge due to lower manufacturing costs. Some of the companies

- Redmon
- GreenEnvirocycle
- Jora

d. Future Competition

As the market grows, the number of players in the market will increase exponentially. However, we are following Peter Thiel's philosophy of making ourselves a monopoly in a market that is yet to be exploited.

As we are establishing the company 3-4 years before the industry booms, we feel that we will have enough time to prove ourselves in the market with our innovative product and establish a mini-monopoly.

Thus, even if the competition increases in the future, we will be a pioneer in the field so we will not be affected as much as the others in the future as long as we adapt and improve our product based on the customer feedback and needs

e. Barriers to Entry

A few problems that arise in the entry into this market are:

- People awareness is still not enough for this market to thrive. The market will reach its peak in another 3-5 years thereby reducing funds.
- People will still try to look towards Municipalities for composting as opposed to themselves because issues like segregation and no costs.
- Perception of odor complaints by neighbors and the users themselves.

6. STRATEGIC POSITION & RISK ASSESSMENT

a. Industry Trends Infrastructure gaps

There is both a high supply of compostable materials and a high demand for compost. The problem is building the infrastructure to convert one into the other. Compost, especially food scraps, is difficult to transport and requires costly equipment in order to make clean, pathogen-free products. Because of this, about 70 percent of facilities focus on yard trimmings, which are lighter to transport and easier to process. Yard trimmings have a recovery rate more than ten times that of food scraps. One solution is to process compost on a smaller scale, eliminating the need for long-distance transportation. Local operations can also be easier to manage that those attempting to process much more tonnage. The simplest option, backyard composting, has also been on the rise.

b. Jump starts from government

In many places the local or state government has been the first to begin composting efforts. In Massachusetts, Connecticut and Vermont, it is illegal for a commercial business to put food items in the trash. Many states have focused on private citizens, setting composting goals or providing compost or yard waste collection options for residents. Hawaii provides free backyard compost bins for any resident who agrees to take a short composting class.

Phoenix has just started a free residential yard waste collection program and hopes to expand to food scraps upon completion of a new composting facility. California leads the country in tons of composted material, and also has a robust government program aimed at increasing diversion rates. Many municipalities are debating the issue of how to build and maintain facilities to handle the demand.

c. Job creation

Advocates claim that the compost industry creates up to four times more jobs per ton of waste than traditional trash disposal. They say jobs are created in both processing and in compost dispersal. The local trend in compost processing has also led to more money being kept in communities than would be if the waste went to landfills. There has been pushback from some large solid waste companies that see compost as a threat to their operations and employees.

d. Corporations leading the way

Some corporations have surpassed government regulations and started their own extensive waste reduction or diversion programs. One is the supermarket giant Hannafords, which has invested in a zero-waste goal as part of its program of environmental stewardship. The chain says the program also makes financial sense, as they have reportedly saved $23 million annually from environmental management. Other companies like IKEA and Whole Foods are also aiming towards zero-waste goals, defined as diverting 90 percent of waste away from incinerators or landfills. Whole Foods attempts to accomplish this by giving food to charity organizations and partnering with nearby composting facilities.

e. Waste Disposal Industry Trends

- **Advanced Technologies in Equipment and Containers**

  One of the most exciting trends in waste management is the development of new and innovative tech in both waste management and recycling. These developments are affecting all aspects of the industry, from machinery to containers to waste management processes. The innovations are helping to make collection and processing efficient, which supports positive results for companies and customers

- **Consolidation Within the Industry**

  An acceleration in mergers and acquisitions is another key trend in the waste management industry. In this way, smaller companies have the opportunity to make a larger impact within the industry. The challenge for companies nationwide including waste management in Chicago and surrounding suburbs is to make these changes in a way that does not disrupt business operations and customer service

- **Acceleration in 100% Waste Diversion Goals and Programs**

  A key trend in waste management in Chicago and surrounding suburbs as well as across the nation is a goal of generating zero waste. This refers to an objective of diverting any and all waste away from landfills and incinerators. Zero waste programs strive to implement innovative, comprehensive recycling programs, increase waste-to-energy efforts and not using products that cannot be easily repurposed. “The Four Rs Approach” refers to reducing, reusing, recovering or recycling waste. Achieving Zero Waste status is more possible than ever before, and these efforts will continue in 2017 and beyond.

  ◦

- **Efforts to Cut Down or Eliminate Organic Waste**

  Millions of tons of waste from food and organic materials are generated in the U.S. each year. An increasing number of cities and municipalities are making efforts to offset this. Some areas are requiring larger enterprises like restaurants and hotels to recycle all of the food waste they generate. Households and smaller businesses that care about the environment can make this a practice for their enterprises as well. Recycling these materials instead of using waste management in Chicago and surrounding suburbs is a way that all Chicago area residents can contribute.

- **Optimizing Commercial Recycling and Waste Management**

  Businesses are more aware than ever before of the impact their practices have on the environment. In light of this, they are taking proactive steps to optimize their waste management and recycling practices. Partnering with a proven professional versed in the best practices for waste management in Chicago and surrounding suburbs can help Chicago businesses to accomplish this.

f. Target Market

Our Target Market comprises of educational institutions, hotels and restaurants due to their initiatives that are being taken up by Municipal Corporations and other major governing bodies in India. Encouraged by the Municipal Corporation-led initiative of residential societies in segregating solid waste in the city, many educational institutions, hotels and restaurants are coming forward to process wet waste generated by their establishments in a bid to become zero-garbage entities.

While many are opting to set up bio-methanisation plants on their campus and intend to use biogas generated from processing the wet waste, others are setting up composting pits with the help of women self-help groups like Stree Mukti Sanghatana and Shree Aastha Mahila Bachat Gath.

At least two educational institutions are setting up bio-methanisation plants on their campus and will use the biogas for cooking purposes in their canteen. They are composting their green waste. While Ali Yavar Jung National Institute of Speech and Hearing Disabilities in Bandra Reclamation is in the process of setting up a bio-methanisation plant with a capacity of 100 kg, St Paul Institute of Communication Education in Bandra has recently set up a plant with a capacity of 60 kg.

Schools like Auxilium Convent School, which generate a smaller quantity of waste, have set up a composting pit of 30 kg. Assistant Municipal Commissioner Sharad Ughade said, “The self-help groups act as a bridge between citizens and the civic body and they help to facilitate the solid waste management system. With their contribution, composting pits have been set up in many residential societies and commercial establishments.”

Hotels and restaurants produce a much higher quantity of waste daily and their involvement in processing waste at the site removes a significant portion of the wet waste transported to the city’s overflowing dumping grounds. Taj Lands’ End in Bandra, which produces 2.5 metric tonnes of waste per day — the highest bulk generator of wet waste in H west ward — has set up an organic waste convertor which processes as much as 1,000 kg wet waste every day. The organic waste converter produces at least 400 kg of manure which is used as fertilizer for the plants and nursery set up on their premises. Similarly, Le Sutra Hotel in Khar, Otters Club and Executive Enclave in Bandra, have all set up bio- methanisation plants to process their own waste. As these trends show of educational institutions, hotels and restaurants will be most benefitted by the launch of our product hence come under our Target Market.

g. Competitive Environment

Due to the delayed emergence of bio composting in India the Competition is not very prominent. Some of the Main competitors are

- Greentech life smart bin air: They are currently the most popular bio compost bin available in market due to their tie up with Amazon. Priced at the range of 2500-3000 rupees they are the main rival of Bokashi.
- Bokashi Compost Bin: They have one of the cheapest products in the market priced at 1099 rupees. They go for Quantity over quality using plastic as their main build material.

- EcoBin Easy Indoor Home Compost Bin: EcoBin is 100% Original from The Inventors of Bokashi EM1, The EM Research Organization Japan (EMRO). Manufactured in Food Grade UV Stabilized LDPE Impregnated Plastic. Hence have the shared interest of Bokashi giving them an edge in the market.

h. Company Strengths

- Unique Design - The Product that we are working on offers a unique take on composting using enzymes that are optimal for Indian conditions.
- Easy to use – The complexity of the machine can be a big turn off for average customers who might not be educated in engineering hence our easy-to-use approach with automated keys and easy to understand manual is a big selling point.
- Originality – Instead of aping the design of present bio compost bins in the market our product has a fresh take on the design which we hope helps create a bigger market for our product.

i. Risk Assessment

The first step in the eHealth Technologies risk assessment process is to identify assets Including people, processes and technology that may affect confidentiality, integrity and availability of information in the organization.

- People assets can be quickly enumerated using an org chart and a definition of the roles in the company.
- Process assets may come from your procedures and work instructions and should include both written procedures and informal practices within the company.
- Technology assets may include things such as servers, fax machines, photocopiers, printers, networks, and on and on.

An owner should be defined for each asset. The owner can be a person or organizational unit who is responsible for the asset.

The next step is to identify all threats and vulnerabilities associated with each asset. This is best done in a brainstorming session with a group of managers and employees including your operations, IT, quality and compliance teams.

We then move to assessing the consequence and likelihood of each risk.

- **Likelihood** is defined as the probability of a risk occurring.
- **Consequence** is defined as the potential outcome if a risk materializes.
- The overall risk is calculated by adding the likelihood and severity score. Values of 0, 1, and 2 are acceptable risks and 3, 4 are unacceptable risks that must be treated with one or more treatment options, including;

1. Selection of security control or controls from Annex A of the ISO/IEC 27001 standard or some other security controls (including HIPAA and HITECH)
2. Transferring the risks to a third party
3. Avoiding the risk by discontinuing a business activity that causes such risk
4. Accepting the risk – this option is allowed only if the selection of other risk treatment options would cost more than the potential impact should such risk materialize

The risk treatments are entered into a risk treatment report for tracking purposes. Both the risk assessment report and the risk treatment report must be periodically reviewed and updated by the risk owners until closure.

j. Definition of Strategic Position

Strategic positioning is the positioning of an organization (unit) in the future, while taking into account the changing environment, plus the systematic realization of that positioning. The strategic positioning of an organization includes the devising of the desired future position of the organization on the basis of present and foreseeable developments, and the making of plans to realize that positioning.

The strategic positioning method is derived from the business world. The method is aimed at ensuring the continuity of the organization. The strategy determines the contents and the character of the organization's activities.

Terms, such as survival, legitimacy, market positioning, relationship with environment and choice for a certain work area, come up in this context.

Subjects which have been developed reasonably well in literature on strategic management include: information collection techniques, analysis techniques and planning schemes. Not or hardly developed are methods for exploring the future.

Various questions must be asked with strategic positioning:

1. The future

Each futurology is based on the past and present. Whether the future is predicted from the flight of a flock of ducks, or from the way in which coffee grounds spread under a turned cup, or from thoughts of wise men: the waves of the future are always interpreted on the basis of the wavelets which are already visible in the present.

Trend research according to Naisbitt (shifts in the basically closed news circuit) is based on small shifts which announce future developments. If we can get hold of today's trends, we may perhaps extrapolate them into the future. It is important for everybody to map the non-volatile developments which are relevant to the own organization. A first exploration of the strategic positioning can be constituted by extrapolating the trends and by gearing them to the field in which the own organization operates.

2. Information collection

The steps to be taken are internal research and external research.

- Internal research

  Where does our organization stand? What internal factors are decisive for survival & for failure, both in positive and negative sense? It is advisable to draw up a list of criteria, which are applicable to the branch you are working in.
- External research

What influences from outside can be of decisive importance to the realization of the organization's objectives? Or: what external critical factors are there?

Model lists of such factors are available but the organization should come up with its own relevant criteria, which do not only belong to the sector but also, for instance, to region-specific developments. This will help describe the opportunities and threats of the organization.

Future opportunities and threats are also mapped occasionally by making use of extrapolation (trend curves or mathematical models) or by consulting experts in a systemized way. Or by making one or more empirically founded, plausible constructions of the anticipated developments (scenarios).

3. Analysis

One can make an analysis of the strategic position by confronting the data of the internal and external researches with each other. An often-used method is the SWOT analysis. Four lists of factors are drawn up: Strong Weak Opportunity and Threat. This is usually done in a group meeting of members of the organization.

Another method is the Product/Market Matrix. Questions raised with this method are: Can you, departing from the existing product range, think of new applications (markets)? And can you supply markets where you are already on firm ground with a variation on your product? (Example: New Zealand sheep farms inventing a new application of wool at times of stiff competition on the wool market: absorption of oil spills at sea, being an existing product on a new market.)

A third method is the Portfolio analysis, which is derived from stock exchange operators wondering: "Which securities must we keep and which must we sell?". A specific portfolio is that of the Boston Consultants Group, which holds the investment or the growth of the branch of industry (Y-axis) against the profit or the market share (X-axis). Four fields then come into being: the stars, the milk cows, the wild cats and the dogs.

Note: for NGO's, the term profit has to be translated in the immaterial yield that should be derived: some distress that is eased; some social interest that is served. The instruments of strategic positioning are derived from business but are fit to serve NGO's as well

4. Choice of strategy

On the basis of the analysis of internal and external critical factors - so, on basis of the estimated chances of seizing opportunities and meeting threats - the positioning will be determined. It would be quite nice to make a very specific positioning choice: we aim at becoming an organization which .....(a description follows, by what the position choice is characterized, in terms of products, customers and image).

Once such a choice has been made, it should be studied what strategy is appropriate to realize that choice of position. In literature rough strategies are indicated, such as stabilization, growth, shrinking and turnaround. The organization can probably indicate

much more specifically and accurately what strategy must be opted for. Growth in a certain direction, orientation towards a certain market, etc.

5. Implementation

The main thing of implementation is that, departing from the future positioning choice, theory is translated into what is to be done in order to realize that positioning.

Example of elements of a strategic plan

Business plan, for instance aimed at:

- internal growth: strengthening of the own position on the existing market;
- market penetration: introduction of products on new market.
- market development: new product on existing market;
- product development or diversification: new product on new market.

1. *Product plan*, selection of products or services, determination of their quality, effect of a product (result for customer).

2. *Marketing plan*, aimed at marketing mix: product policy, promotion policy, distribution policy and price policy (cost price/ market price/ competition price?).

3. *Production plan*, choice of location, choice of equipment and of the production process, production standards, layout. Production planning, production management, stock control, quality control, cost control, maintenance.

4. *Research plan*, technological innovation or product modification.

5. *Personnel & Organization plan*, positions, recruitment and selection, career
6. development, organizational structure, training and education, organization culture, performance assessment, terms of employment, relationship with the representative advisory committee, organized consultations, trade unions, promotion policy.

7. *Purchase plan*, evaluation of suppliers, account management, make-or-buy.

8. *Logistical plan*, transport management, stock and handling, run-through times, term of delivery.

9. *Financial plan*, registration and evaluation of financial data, responsibility for availability of financing.

10. *Information plan*, gathering and processing of data.

11. *Quality plan*, consistency, competence, responsibility, accessibility, respect, communication, credibility, understanding, safety, appearance.

12. *Public Relations plan*, both internal (mission, propagation of business objectives, motivation of staff) and external.

7. MARKETING PLANS & SALES STRATEGY

a. Company's Message

"Waste to wealth!".

Our aim here is to make people care more about nature and also about themselves. Turn someone's day-to-day waste into something fruitful by using our smart and sustainable compost disposal bin. Instead of turning our streets into dump yards and polluting them give us a chance, we will show the magic of NaturePLUS. Why invite diseases by consuming pesticide borne veggies and fruits? Fast and pure organic manure from your own home waste can be used for farming purposes at home and gardens to produce fresh organic vegetables. We do have another advantage of providing biogas from the decomposed materials. We can put up a pipeline system for your kitchen or farm wherever such energy can be utilized. The manure can then be sold back to us or to farmers at marginalized costs. This can create a cycle of self-sustainability between urban and rural areas. The CO2 generated can be stored and used as per the desire of the consumer.

b. Marketing Strategy

- Eye catchy Tele ads - We are planning to shoot an ad starring a common television artist we can afford through the marketing budget. This can be telecasted on Naaptol as a mean of selling the product.

- Customer selection - NaturePLUS will be a very useful tool to a small scale or a medium scale organic farmer. Restaurants starring >3 like Holiday inn, Marriott and those organic restaurants like Rasa India, Green theory and Om made Café in Bangalore are our major targets. Also, SHG targeted at producing organic vegetables showed interest in buying our bin for manure from their cattle field waste.

- Our retail shops are going to be in areas not far from the restaurant rich areas of the city so that it will be easy for the buyers to transport. Establishing a platform near a colony of organic farmers would also be valuable.

- Advertisement in daily tabloids and magazines and industrial articles

- E-mail campaign - Creating a regular email newsletter that will go out to subscribers. We can market discounts, promotional items as well as articles/blogs about urban farming, waste decomposition etc. The curated content can be fine-tuned through open-source feedback.

- Awareness about the environmental issues and problems caused by pollution will be mainly focused in all forms of advertising. The need to take an immediate action to counter the problems caused so far and load deposited on nature is going to be showcased widely.

- Images of NaturePLUS kept in farms and the people using it with ease will be added in websites and ads to connect with more people in the industry.

- Discounts and reduction on the bin as well as enzyme packets for initial few customers

c. Launch Tactics

- Face-to-Face Meetings and interviews with potential customers such as restaurant owners, Self-Help Groups and organic farmers. The interviews can be recorded and published on our social media platforms for further outreach.

- Discounts, product partnership as well as other promotional offers during launch.

- Regular surveys and phone calls (both opt-in) to customers to open-source feedback regarding the product and scope for improvements.

- Cold e-mailing all the major organic restaurant owners and farmers in the city with product description, working demos and contact information

- Printed advertisements in media with high income demography to reach popular audience

- A virtual opening ceremony for the product and similar products lined up (that can be partnered with to provide combo deals). Renowned people in the industry can be invited that can address the global waste management situation and the harm it's causing.

- Speaking engagements to gain the trusts of customers by directly standing in front of them and sharing experience apart from online methods also bring in an added advantage of getting to know potential buyers. This is a two-for-one marketing tactic

- Online and offline networking with industry and market leaders to grow the product's network, fine-tune it as well as integrate it with pre-existing solutions.

d. Strategic Partnership

Our company is entering into a strategic partnership with the following group of people to get the best supply of materials and support at a subsidized cost which benefits both the company as well as the providers. Not less than 10% of profit is also distributed to each of the below mentioned group apart from the price of services obtained.

- With enzyme producing laboratories
- With raw material suppliers
- With advertising companies
- Distributors
- With webpage and online event managers

If we were to consider of partnership with component manufactures for our **NaturePlus** units, we many partner up with preexisting manufacturer companies, to bide by for productions till the company can assume OEM capabilities. Manufacturing respondents had fairly high rates of investment across the board, with 50% of respondents investing in each of the following categories: food waste reduction, food waste disposal, food donations, and food sent to animal feed. The only category with a slightly lower positive response rate was

food recycling, with 44% of manufacturers highlighting it. Large manufacturers are investing in more areas: four out of the five areas of investment were identified by 100% of large manufacturing respondents (the only exception being food donations).

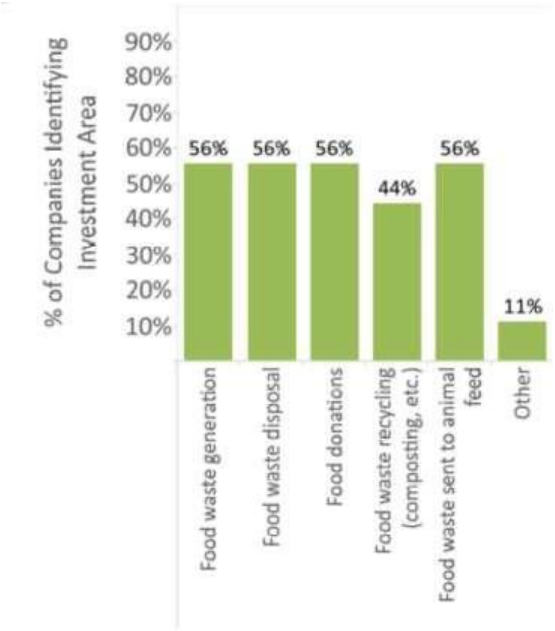


Fig: Investment areas for the manufacturing sector as of 2019

e. Sales Force and Structure

- Geography based sales:

  The sales approach to a suburban community can be very different from an inner-city area. We have a very effective sales team specialized in 4 particular areas so that they can scour it thoroughly and understand its workings. This allows us to develop appropriate approaches to the meet the needs of our customers.

- Product based sales:

  Ours being a technical product in-depth knowledge about setting up as well as working of the device is necessary. We have a professional team who are experts in the production line making us powerful seller. We have a separate sales team capable of answering all the technical and complicated questions of the clients.

- Client based approach:

  Arranging sales around the client to satisfy the specific need is one effective method of sale used. If the client is a restaurant owner aimed only at waste disposal, then we can personalize the enzymes to be faster in degrading the waste without working on bringing out the components useful for manure. If client is an organic farmer, then the enzymes can be made more powerful to degrade the contents into nutrient rich manure.

- Customer sales force structure:

  We organize the sales force along customer or restaurant lines. Separate sales forces may be set up for different restaurants or organic farmers, for serving current customers versus finding new ones, and for large accounts versus regular accounts. The top group consists of large national accounts with multiple and scattered locations, which would be handled by national account manager. Next are large accounts that, although not national in scope, may have several locations within a region and are handled by senior account managers. Customers with lower annual sales potential could be served by account representatives and all other customers could be handled by marketing representatives. Organizing its sales force around customers can help a company like ours to become more customer focused.

8. OPERATIONS

a. Plant and Facilities

The manufacturing plant will be constructed keeping the product in mind. For our product, we would be outsourcing most of the components, importing them to our plant and then assembling them all together.

The plant needs to have an **extensive design layout, with adequate space for machinery and human labor**. There needs to be proper air ventilation in the plant, to avoid deterioration of the health of our workers.

The main site we have our eyes upon for the construction of the plants are: **Outskirts of Vellore district, Tamil Nadu**: It is a quiet place which is not inhabited by many and the terrain is flat and smooth enough for ease in construction. The venue is equidistant to major other production plants from whom we would be importing some of our components, helping us reduce shipping charges and hence killing two birds with one stone.

We would have lots of facilities in the plant, such as:

- **Air conditioning:** A lot of heat is involved in the manufacturing process and due to the location of the site as such and we would require air conditioning in the plant not only for the faster cooling of the products but also for the betterment of the work environment for the workers. However, air conditioning cannot be made central, since that would take up a toll on our budget, and hence only few rooms and workplaces would have AC. There would be facilities for **properly cleaned and well-maintained washroom facilities**.

- **Production Area:** The entire plant is going to be divided into two areas, the production area and the packaging area. As the name suggests, this area would deal with the assembling of the various components such as the **CO2 detectors, Heaters,**
  Enzymes, thermos-insulated coating etc.

- **Packaging Area:** In this area, we would be packaging our product to get it ready for shipping.

b. Manufacturing/ Production

We plan on importing the parts needed for the composter from China and other suppliers. Assembly of the parts will be done in our factory in Vellore. We are choosing the assembly line model because the parts we'll be using are of higher quality than the ones we can get in India. We will be keeping a monitoring system so that the quality of the product will remain up to our high standards. We will also have an inventory system which will control the parts used so as to ensure control and no losses through loss of parts or any such issue.:

Equipment and Facility Requirement

- Since we using the assembly plant model, we will need:
- Transportation system for transporting the parts from the nearest port, Chennai.
- We will need manufacturing tools like pliers, screw drivers and automated machines to do the same.
- We will need a facility in an unpopulated area to set up our factory.
- The facility should be big enough to fit a single assembly line in the beginning, but we should have enough space to set up more assembly lines as our company grows.
- Personnel and related costs
- We will need to hire around 20-40 people for the assembly line which will include unpacking, cataloguing assembly and packaging.
- We will need delivery salesmen for our booths. Our main sales will be through online retails but to advertise our product we want to put up stalls and to go door to door to restaurants that are our main market.

Training Requirements:

- We will need to train the assembly workers to operate the machines. We want to use unskilled labor rather than using skilled labor.
- We will hire skilled laborers for managing the plant.
- We will also give a small training exercise to our salesmen.

c. Labor Requirement

The company plans to hire around 20-25 employees per assembly line. We want to hire 20 unskilled workers at the beginning because at the start, there will be only one assembly line. The company will hire 5 engineers. These 5 engineers will be experienced in handling small scale assembly lines and they will be given posts such as Operations Manager. They will train the newly hired workers in the machinery that will be used for assembly.

The company will also hire around 20 salespeople which will be in-charge of door-to-door marketing of the product in a city like Chennai and Bangalore. They will also put-up booths in important places to increase the visibility of our product.

We will also set up a contract with a transport company for transport of parts from the port of Chennai and other transport facilities.

d. Capacity Utilization

Capacity Utilization is the ratio between the actual production output and the proposed production output. On analyzing the data from other single assembly line factories, we have seen that the average CU is around 76% in India. We wish to have the CU of around 80-85%

e. Quality Control

Our company has high standards of quality and we will test every machine that comes off our assembly line. The quality protocol will test the system for leaks and other problems of software and hardware. This system will be automated and will be controlled.

We will ensure that the product will be tested at every stage of development and thus, we will be able to provide quality assurance to the customer.

We will also provide servicing of the device quarterly so as to prevent any problems with the system.

f. Equipment and Furniture

We need to choose the right furniture and layout because it is very essential for a work environment. The office can be thought of as a stage, as with a play, the office sets the scene and is an important backdrop for the work environment.

Well-chosen furniture will make the staff feel comfortable in the workplace where they spend so much time and enable them to work more effectively.

Employees should have a desk and chair, so that they can do their job.

Since employees would need to collaborate on tasks together and this cannot be done on separate cubicles as that would be very cramped, without space for a second chair or room to spread out work materials.
Employees with a need for intense focusing on tasks will benefit from a quieter individual space to work in.
The furniture should suit daily work patterns and allow staff to carry their regular tasks easily and efficiently. If they have to search for a place to work, they are wasting time and will become frustrated.

These factors also have to be applied in all of the office areas, such as conference rooms, the reception area, storage space and rest areas.

- **Wood:** Maple, for the tables, chairs and the walls
- **Walls:** The walls will have a wooden sheet which will make the workplace look presentable and pleasuring to both the employees and the guests
- **Workplace:** The entire office area would cover 4000 square feet on one floor.
- **Conference Rooms:** Would consist of oval table 15 feet by 6 feet in size, with 10 chairs spread out symmetrically throughout
- **Reception:** Would consist of one desk for the receptionist and many chairs in the waiting area right next to in
- **Washrooms:** They are a basic necessity
- **Office:** For the people of higher positions, like Manager and General Manager. Would consist of one table and chair with a personal cupboard

g. Inventory Management

Inventory management is the part of supply chain management that aims to always have the right products in the right quantity for sale, at the right time. When done effectively, businesses reduce the costs of carrying excess inventory while maximizing sales. Good inventory management can help us track our inventory in real time to streamline this process.

Since we are a small business, we would be doing inventory management in these ways:

- **Fine-tuning our forecasting**
- **Using the First-In-First-Out approach for selling our goods**
- **Identifying the low-turn stock**
- **Auditing our stock**
- **Using cloud-based inventory management software**
- **Tracking our stock at all levels**
- **Reducing equipment repair times**
- **Not to forget quality control**
- **Hiring a stock controller**
- **Remembering the categories of our products**

We would be using the software: **Square Invoices**, which is a free cloud-based inventory management software gives us the tools to enable and track inventory by item or in bulk

h. Supply and Distribution

- **Waste Management Industry:** Since we're contributing in the waste management industry, our product would also come under this industry, and hence we would operate only within the bounds of this industry. For low overhead costs, we would try to keep the cost of our product to be less. With the right partners, we could start our supply distribution wholesale business at $500-thousand-dollar investment.
- **Mode of supply and distribution:** We would supply both online and offline. For online, we are in talk with some of the largest e-retailers in India: Amazon and flipkart. They have warehouses in all major cities and since our main manufacturing unit would be placed near a metropolitan area, the shipping charges would be light. For offline, there aren't many retailers in this field who sell composters as such. Hence, we would open up our own shops but in limited cities (which would increase as the business grows).
- **Warehouse space:** Warehouse space is costly and hard to find in a developed city; however, it is way easier at the outskirts of a city where inhabitants are less. The **cost is lesser by 57%**, however we need to keep in mind that transportation charges would be more. We need warehouse space to build up our inventory, as we scale through our first product.
- **Licensing:** Two major licenses are necessary to execute this business. They are: **Shop and Establishment Act License, Sales Tax License.** Without licensing our product, we cannot sell it legally.
- **Advertising:** We would be advertising about our product via **roadside posters,**
- Social Media marketing, handling out pamphlets and engaging with SEO firms.

i. Order Fulfilment and Customer Service

We would be taking orders both online and offline.

- **Online:** We would have primarily start with creating an exclusive market niche with sales via our own site. However, future projections of scaling up would involve contracts set up with E-Retailers such as Amazon, Flipkart, eBay, where we would be selling our product.
- **Offline:** We planned on setting up booths on the streets and a few local retail shops across the city in Chennai.
  We would have to properly manage our inventory and not produce too much on the first go.
  Taking inspiration from Xiaomi's marketing strategy where they make limited number of products and then open for sale, we plan on implemented a similar strategy where we would be accepting pre-orders and based on that we would be producing our inventory.
- **Our shipping and delivery** would be throughout India, and we would focus a lot on order fulfillment and customer service.
- **Customer service** is a very important aspect in the business here because if a company treats its customers well, only then would the customer recommend the product to someone else.

We would be offering refunds for customers who are not satisfied with the product, so that we do not lose their trust.

j. Research and Development

By industry standards, the composting in smallest composting takes around 2-3 days. However, they use bacterial packets and other bio-enzymes generated by the bacteria or fungi. However, since we are using synthetic enzymes, our process is accelerated and will take only 1 day. We need to conduct research on the problems like what temperatures ensure the fastest decomposition speeds and what enzymes can corrode the materials of the composter in the long run. We also want to conduct research on which enzymes can be used to further accelerate this process. We aim on creating a process which can reduce the odor released by decomposition and we also want to make a self-sustaining system. The gases released by the composter can be used to power the composter thereby making an eco-friendly system.

We are also developing software that will be able to control the system based on internal temperature, decomposition rate and decomposition of the food waste. The hardware system needs to be developed and the software is in development stage. We want to make a self-sufficient system that can control the system completely. At present, the machine will be timed and the user has to keep in mind about the timings.

In the future we want to make a system that will be able to analyze the waste added into the system and give warnings if incompatible waste is put in. We also want to add a feature where an SMS will be sent to the user on completion of the composting

k. Financial Control

Financial control refers to facts that show whether or not the business has the right to control the economic aspects of the worker's job.

The financial control factors fall into the categories of:

- **Significant investment:**
- **Unreimbursed expenses**
- **Opportunity for profit or loss**
- **Services available to the market**
- **Method of payment**

Implementation Strategy:

- **Analysis of the initial situation:** We would **conduct an exhaustive, reliable and detailed analysis** of the company's situation across various areas: cash, profitability, sales, etc.
- **Preparation of forecasts and simulations:** On the basis of the initial situation analyzed above and the establishment of a set of parameters or indicators, a set of forecasts and simulations of different contexts and scenarios can be prepared.
- **Detection of deviations in the basic financial statements:** The basic financial statements are the documents which must be created by the company in preparing the annual accounts. The three most important documents are the general balance sheet, the profit and loss account and the cash flow statement.
- **Correction of Deviations**

l. Contingency Plan

The contingency plan for our startup will follow standardized protocol for dealing with situational hazards in case of natural disasters or accidents on site. All personnel will be trained on basic fire safety, and first aid.
Similarly, all facilities are to be fitted with fire exits, fire safety systems, extinguishers and announcement systems for PSA announcements.

In terms of company functionality, we are currently devising IP safety and copyrights to protect against data theft and manipulation. DBMS companies and services such as Microsoft Azure will be used for maintain our data and sales figures across all platforms.

Business Model Canvas

Key Partners	Key Activities	Value Proposition	Customer Relation	Customer Segmen
Supplier and Vendor Parties Waste Management Companies Partnership with more renewable energy companies Fertilizer/Bioenzyme markets	Waste management Environmental Engineering Research and Development Develop customer relationships Build Brand Organic Waste consulting	To provide accessible and reliable waste management Electronic Recycling or E-recycling To turn food and yard waste into compost	Commitment to sustainability – think green Environmental Protection Accessibility Ease of Use Self-service tools Dedicated sales personnel Consulting	Municipalities Healthcare Facilities Food service Business Household
	Key Resources Composting/Enzyme consultant Relationships with waste management companies Financing		**Channels** Website Online customer Portal Social Media Network of Offices	

Cost Structure	Revenue Streams
Website and App Development R&D Network of Offices Machinery IoT Personnel Equipment Enzymes	Subscription Services for ongoing support and branding Upfront fee for end to enf process Recycling add-ons/ Enzyme packets

9. TECHNOLOGY PLAN

a. Technology Goals

- To provide the best interface of the users with the product. Position: developing stage. Integrate smart systems within the product using internet of things.

- IOT will enable our product to tackle minute issues on its own if the programming is done that way. Like telling the user about the complete formation of the compost, the level to which the waste has been produced and the current level of enzymes.

- We can also use machine learning algorithms to predict the number of enzymes that will be used to produce the compost by taking in previously recorded data. The software component works mostly on SPYDER which supports python and has many model libraries that help plotting graphs and gives accurate readings and predicts any possible permutations to give accurate results on the usage of the product.

- This unit will be hosting a ton of sensors including temperature, humidity, proximity and infrared sensors, etc. These sensors will communicate with each other and with the other connected devices to store and analyze data. That device could either be a hard drive, a cloud service or simply a memory chip.

b. Internet Goals and Plans

The internet is one of the most important technology that has been around since a few decades now. Its reach is increasing to heights where no other technology has ever been. All the communications that the product is capable of is because of the presence of internet. All the sensors will collect data from their surroundings and upload the data on the cloud for storage and Big Data Analytics. There, certain algorithms will be able to calculate the basic values essential for the customer to know. These can be:

1. The amount of compost formed every day.
2. The funds gathered by selling the compost off weekly/monthly.
3. The quantity of each enzyme used per cycle to estimate the weekly/monthly expenditure on the enzymes alone.
4. All this information will allow the customer to estimate the weekly/monthly profit that is earned by them by selling off the manure produced.

Apart from technology, internet will be the primary source of ads. The reach of internet is very vast and the best thing is that we can show our product to the world for free. Facebook, YouTube, etc. provide aids to such causes. There are currently over 2 billion users on Facebook. In the fourth quarter of the year 2017, 2.2 billion people had logged into their account. If one person shares a post, the average reach would be about 50-80 people at the lowest. Suppose even the 10 of us start the chain and consider the reach per person as 50, by the time the post is being shared the third time, about 26000 people would have already come across the product. This cycle could keep going on & help advertise the product on a large scale and for literally no cost.

The demo video of the product can be shot and posted on YouTube. If we now use the same algorithm of the 10 of us sharing the video to 50 different people, by the third cycle has been reached, 26000 people would have seen the video and if the cycle goes on, the video could pop up under the trending section of YouTube and the people who are total unrelated to the sharing chain will tend to increase and might start up a chain of their own.

c. Software Needs

The company needs tailored software services to design a platform for the automation of the composter unit. The UI needs to be smooth with an easy learning curve. The software should be able to make error logs and store it in its memory.

d. Hardware Needs

The list of hardware needs is quite expensive, as discussed in previous segments. Being a product-based service, the need for good quality and robust hardware is crucial for us.

e. Telecommunications Needs

If our product come out to be a success, we would need to place a few call stations all across the globe. For that we need to select plans with the telecom and internet service providers. We will be needing a reliable connection which will also provide us with toll free numbers so that the customer won't hesitate to place calls from anytime and anywhere. An optical fiber connection will be preferred over any other connection as it is very reliable and extremely fast.

f. Technology Personnel Needs

- Computer science engineers for all the software and web development for the product and company.
- Electrical engineers to implement the logical circuits and wirings of the product.
- Mechanical engineers who will give shape to our product by efficiently using the materials provided to them.
- All these engineers will help us integrate smart systems in the product which will not only make our product efficient but will also bring our product to life as it will be able to communicate with the nearby devices and make it easier for the user to operate.

10. ORGANIZATIONAL CHART

11. SOCIAL RESPONSIBILITIES & SUSTAINABILITY

a. Social Responsibility Goals

NaturePlus aims at reducing organic waste accumulation and dumping by 20% by the year 2030. With its industrious progress the company aims to educate the populace about the need for environmental awareness and provide a method for farmers to obtain good quality organic manure for a subsidized rate.

b. Company Policy

NaturePlus's company policy revolves around the concept of learning and growing as a company.HR team would be regularly involved in the development of the employee profile and periodic performance evaluation and incentive programs aim at instilling a desire to outdo oneself in the employee.

c. Social Responsibility Certifications

ICCSR certification standards will be met and new employees will be routinely trained to uphold GMP and GCP across the work board. Every production unit will be assigned with a government approved EPT plant in accordance to EPA accords

d. Community Involvement

Community involvement is the power to bring positive, measurable change to both the communities in which you operate and to your business. Community involvement examples include in-kind and financial donations, employee volunteer days, enduring nonprofit partnerships, and more. The business case for involvement has never been stronger.

In fact, the benefits of corporate community involvement are two-fold, providing positive returns to local charitable organizations and neighborhoods and boosting company performance indicators, such as reputation and employee engagement. As your company builds partnerships and working relationships with local community nonprofits and service-based organizations, neighborhoods are strengthened.

Corporate community involvement programs can provide your company with a platform for showcasing products, employee competencies, and your firm's values. There are even ways to promote networking and skill-building among employees while you are strengthening your community. Companies that use corporate citizenship to strengthen community partnerships are not only able to foster a workplace culture deepens employee commitment but are also able to build enduring relationships in the communities within which they do business, a quality that benefits both companies and communities alike.

e. Sustainability

Sustainability means different things to different people at different times. The literature is rife with attempts to define and some are made by The World Commission on Environment and Development (WCED, 1987), the Dow Jones Sustainability Indices, the EU (EC, 2013) and there is also an ISO definition.

The term sustainability and sustainable development are used synonymously, but the term was coined originally in reference to sustainable development, with the purpose of encourage development with a dual focus on reducing poverty and taking into consideration long-term ecological effects.

The WCED definition is the most cited definition of sustainability and define sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (1987, p. 43. The launch of this definition is the exact point in history when interest in sustainability occurred. The definition has been tailored to fit sustainable business as well, as it is one that meets the need of its stakeholders without compromising its ability also to meet their needs in the future. The term has experienced some criticisms, as it has been called an oxymoron, an illusion, or both, and that it is more of a slogan (Banerjee, 2003). The concept has expanded since 1987, and the main focus is on economic profits, social impact, and the environment.

The environmental principle requires that society protect its environmental resources, the social-equity principle requires that everyone, independent of initial endowments, should be treated fairly, and the economic principle requires the adequate production of resources for society to maintain a reasonable standard of living. T. Porter and Derry (2012) also agree that the definition has evolved, and that it involves concern for all stakeholder groups, that future generations need to become an important stakeholder group, and that sustainability involves multiple dimensions of performance beyond simple economic profits, involving the well-known 19 social performance and environmental performance, as well as cultural sustainability. Stakeholders are all those affecting or affected by an organization. Related perspectives within sustainability are the triple bottom line (TBL), environmental management, ecological modernization, the sustainability balanced scorecard; ecological and social life-cycle assessment, tools for assessing and reporting sustainability initiatives, such as the ISO 14000 environmental guidelines and Global Reporting Initiative (GRI), sustainable supply chains, and sustainability accounting

12. DEVELOPMENT, MILESTONES & EXIT PLAN

a. Long-Term Company Goals

The company hopes to branch out into the alternative energy segment and the agricultural manure market in the next 15 years. The additional vision of providing an entire range for organic waste disposal on a contractual basis for big events is an additional goal for the company to achieve in the next 10 years.

b. Growth Strategy

NaturePlus has done extensive market and competitor research and come to the following conclusion about their growth strategy

- Analyzing existing competitors
- Analyzing current market trends
- Online business promotion via mailing lists and social media
- Offer franchising options
- Setup shop in all Metro cities of India
- Improve according to customer feedback
- Increase our line of products with attention to customer needs and visual appeal.

c. Milestones

- Business canvas model prepared and analyzed
- Testing components and trial runs phase I
- Successful Series A funding
- MVP development
- Acquisition of Alpha and Beta Tester Market Space
- Failure and success startup stories studied for improvement of our product
- Funding plan prepared
- Legal and regulatory tax environment in India studied
- Basic business plan on progress

d. Risk Evaluation

Risk is always associated with any venture and our startup is no exception to this case. However, the team at NaturePlus aim to tackle it via utilizing solution firms such as ZS solutions to identify and troubleshoot possible future problems by analyzing current market data. In the case of a fallout/economic depression the company hopes to design a provident fund system for all employees and a disaster relief fund for their families. The following table gives a brief about the risk analysis that out venture has considered for the foreseeable future.

Risk	Likelihood	Impact	Solution
Recruiting risk - If the company is able to find good and efficient workforce that are able to perform at a high level on a daily basis	Likely	High	Have a strong company mission, company culture and workforce to support the vision/product.
Sales risk - If the company is able to effectively sell its product while maintaining a decent profit margin.	Highly Likely	High	Have a strong experience sales team. Sell the product at reasonable prices and indulge consumers in offers during peak sales cycles.
Market share risk - If the company is able to capture a sizeable market share.	Highly Likely	High	Have a plausible analysis of the market share, the products in that category, the key USPs and the need of the consumers.
Funding risk - The company must have enough money to reach milestones to be able to raise more money on better terms for further expansion.	Highly Likely	High	Major focus on the company achieving break-even and self sustainable without additional capital (through reinvesting profits).
Short term competition risk - The company must be able to compete with existing players in the market	Likely	Medium	Introduce the product in the market through a huge PR event. Continuous updates on social media, blogs etc.
Long term competition risk – Other companies might try to copy the business model/product.	Likely	High	Have a strong brand identity. Copyright and patent the intellectual properties while maintaining a strong legal status.

e. Exit Plan

There is a time to guide and invest and then there is a time to gather up your fruits and make a graceful exit. Exit strategies are important as the end goal affects everything from how we run our business, to the partnerships we pursue, to how we choose to fund our startup. By thinking and planning ahead, we are much more likely to be prepared when we do exit-- whether that's in 18 months or 10 years down the road. When an investor pours money into a company, he expects to get a return on this investment eventually. Venture capitalists, angel investors will soon start looking for some liquidating event as the exit plan.

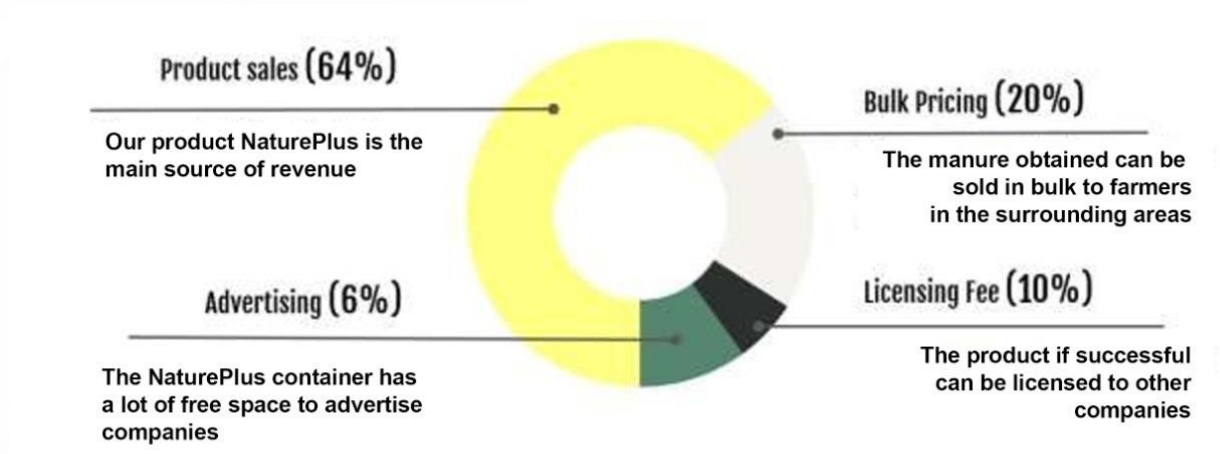
Various exit strategies that we can have are:

- The main exit strategy would be to license our product to different companies prominent in fertilizer business or Agro-interested companies. They have deep pockets to invest in the setting up a manufacturing plant. We can sell all the machineries required to make this product as well. The profits will be low but it would be a good source of income.
- Another strategy called Merger & Acquisition is when we join forces with a bigger agriculture-based company that are looking for complementary skills in the market and specialize in start-ups. We need to sell for as much money as possible and we need to maximize our selling price not when we are profitable but rather when we have steady increasing growth rates. Our startup has to become so successful that it catches the eye of a competitor or a larger company who are ready to buy our company and they are interested in buying our company rather than us putting the company for sale. Corporate buyers or private equity firms may be interested in our startup and help in the transfer to this third-party business.
- Liquidation is also a strategy we can implement as it is a fast-method to get out of the business by selling your valuable assets like-land, equipment and so on. We break the start-up into different parts and sell it to liquidators, if there is a lack of financial market for this agricultural product.

Our exit opportunity may come up at early stages if there is a failure in our startup due to running out of capital, team breakup and various other reasons and having an exit strategy in place beforehand is always better and our will mostly be the acquisition route.

13. THE FINANCIALS

a. Income Statement



b. Cost Estimations

COMPONENT/ EQUIPMENT	POSSIBLE SUPPLIERS	AMOUNT (per product)
Heaters	Elmec Heaters and Controllers, Indus Heaters, Supreme Industrial Heaters	Rs. 55,000
Monitors	BenQ, LG and Asus	Rs. 22,000
CO2 detector (Arduino/ Microcontroller compatible)	Sensors available online on Amazon	Rs. 4,000
Thermal Insulations and casings	Lloyd Insulations India Limited	Rs. 1,500
Enzymes	Novozymes, AB Enzymes, Aum Enzymes	Rs. 680 per litre
Total production cost per unit		Rs. 83,180

EXPENSES	AMOUNT
Building/ Real Estate	Rs. 50,000
Location expenses	Rs. 10,000
Leasehold improvements	Rs. 5,000
Working Capital	Rs. 12,000
Opening Inventory	Rs. 10,000
Other expenses	Rs. 5,000
Total	RS. 92,000

c. Source and Use of Funds

Funding can be achieved through various ways. Some of the initiatives:

- VIT TBI
- Kickstarter and Indiegogo

Angel investors are also a viable option for agriculture-based products. Some angel investors for our product space: Anirudh Mullick, Karl Meheta and Brad Holden. This will require development of contingency plans and a shift in strategies – VCs are now investing in companies with backups and secure cashflows.

There are several government programs we can take advantage of

- Venture Capital Scheme for Agri-Business Development
- Raw Material Assistance scheme – Financing purchase of indigenous & exported raw material
- Rashtriya Krishi Vikas Yojana – Financial support and incubation ecosystem
- Support for International Patent Protection in Electronics & Information Technology (SIP-EIT) – Assistance in international patent filing procedures
- ASPIRE – Funds by SIDBI and providing a network of technologies for agriculture.

14. CONCLUSION

Through the given documentation, we were able to highlight our business plans for multiple sections of the business such as:

1. Industry trends and Competition analysis
2. Technology, labor and other requirements
3. Foundation of the company business
4. Supply and distribution
5. Target models
6. Risk assessment
7. Marketing plans and strategies
8. Operations and facility
9. Milestones, financials and blueprints

We were successfully able to lay the foundation for multiple dimensions of the business. We collected data through crowd-sourcing in our surveys to analyze the need of our product. The project has achieved its objectives. It was successful in laying down a theoretical foundation of the composter product which is more convenient and user-friendly for urban areas such as households, restaurants and colleges. The decomposed waste can now be used by the given party or can be sold back to farmers at a subsidized cost, making the whole process self-sufficient and green.

Our future plans include converting the theoretical model into a practical model through the help of investment. The given model can be iterated over multiple times, through the help of IoT and machine learning algorithms, to provide the following

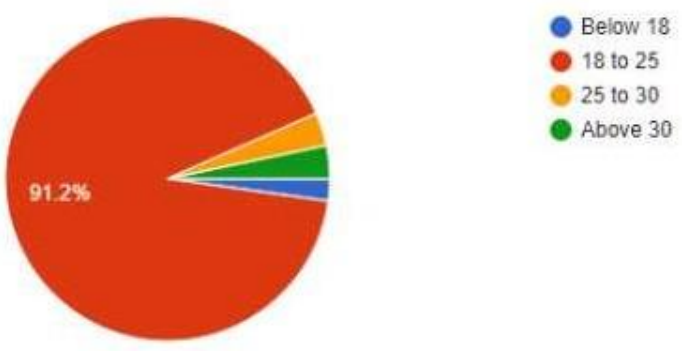
- Right quantity of enzymes required to decompose the waste
- Type of waste present in the bin and if is it possible to decompose or not.
- Mobile application to remotely control the bin

Through such measurements, we can ensure that our product stays ahead of the waste management curve, and present a product that is robust, efficient and truly unique, through which urban sectors of society are encouraged to decompose their waste and make the world a greener place.

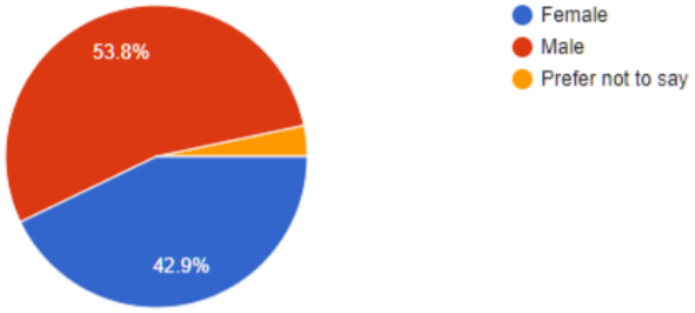
15. APPENDIX

Market Statistics

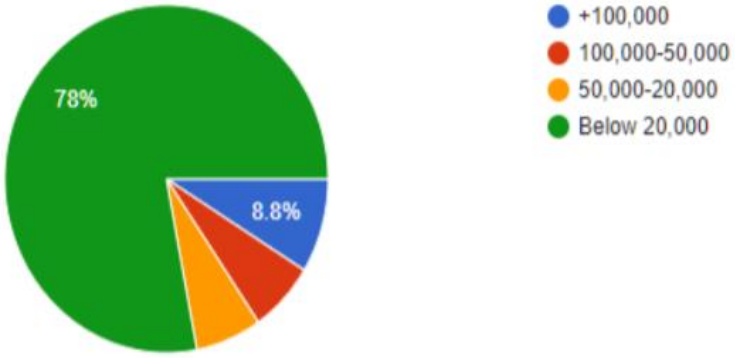
Kg/s of waste generated in restaurants per day



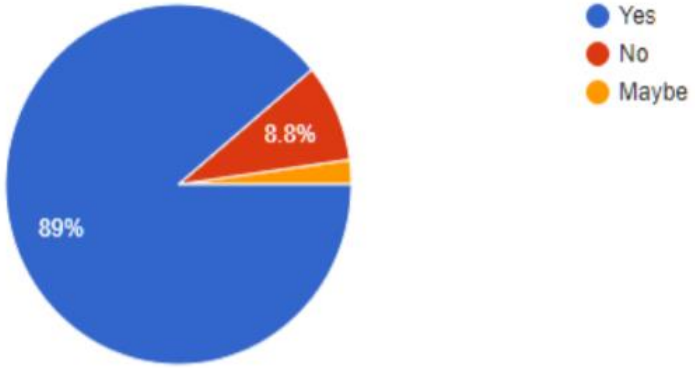
Inclination towards the trend of whole foods



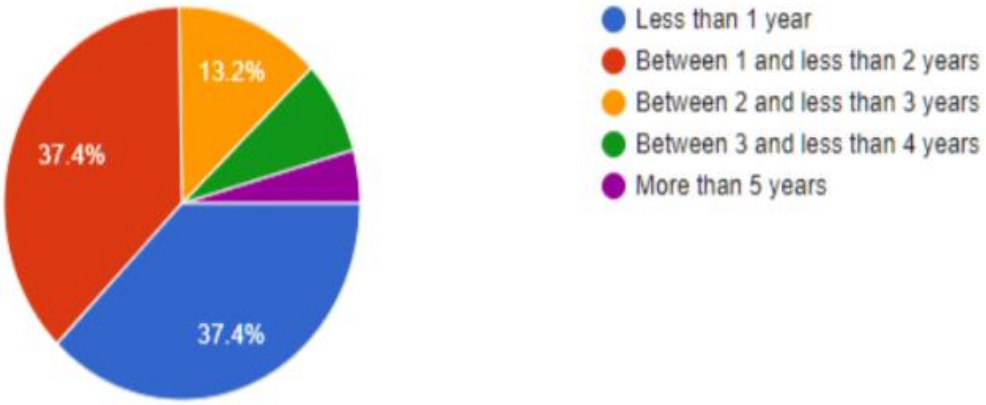
Weekly expense on whole foods for restaurants



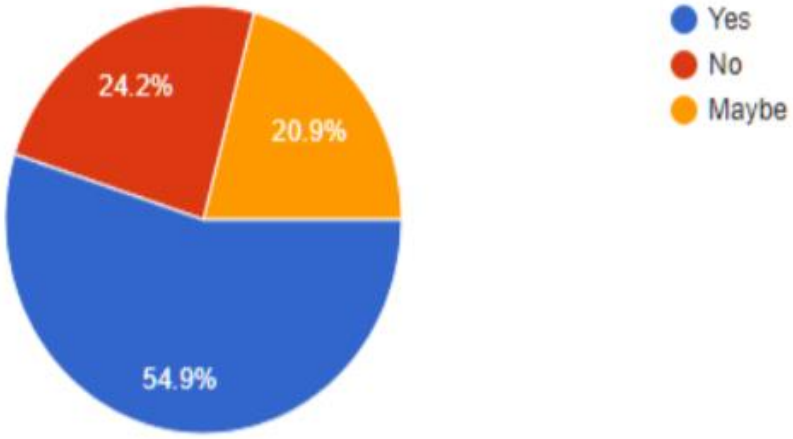
Preference of eateries which grow their own produce



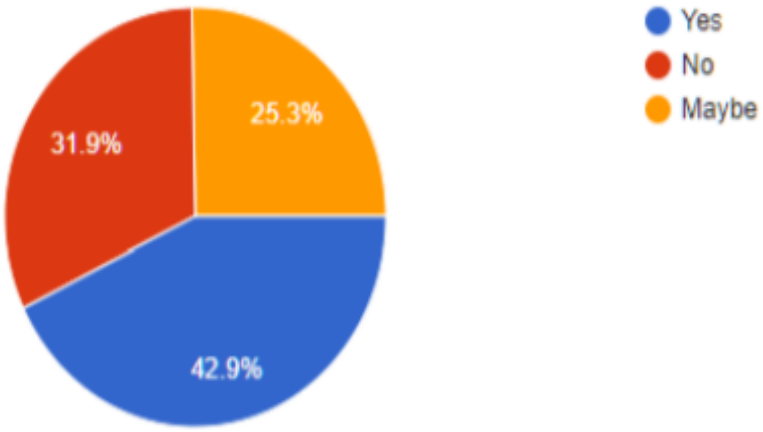
How long have you been aware of waste disposal solution providers?



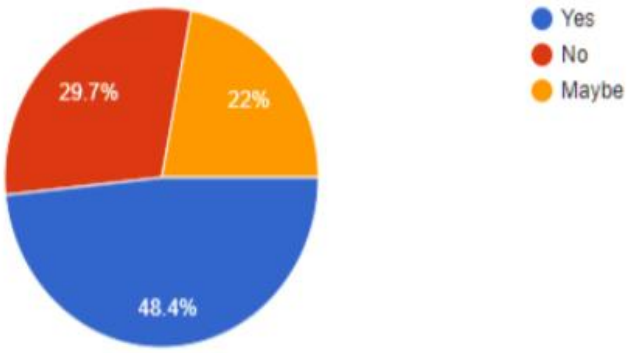
Would you consider investing in your waste management solutions?



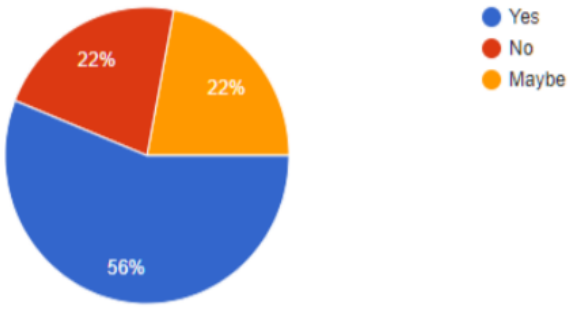
Would you consider selling back your compost for service discounts?



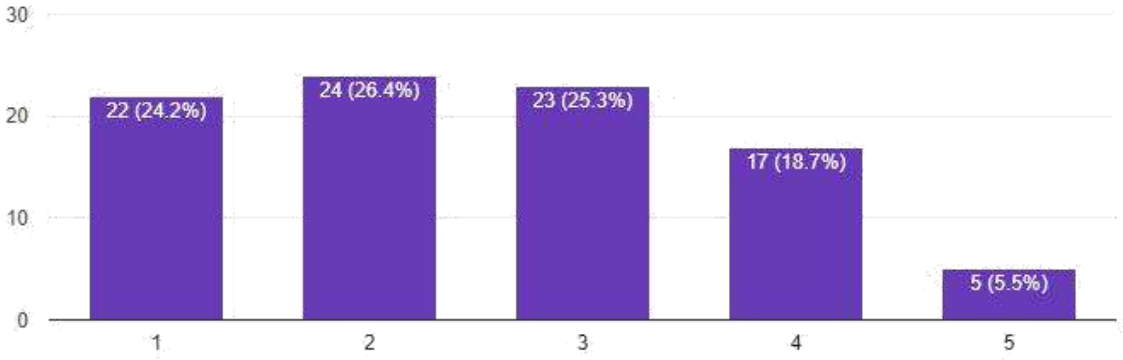
Would you consider partnering with our company for market studies and testing phases of our products?



Would you be interested in a comprehensive organic waste solution system for your housing complex?



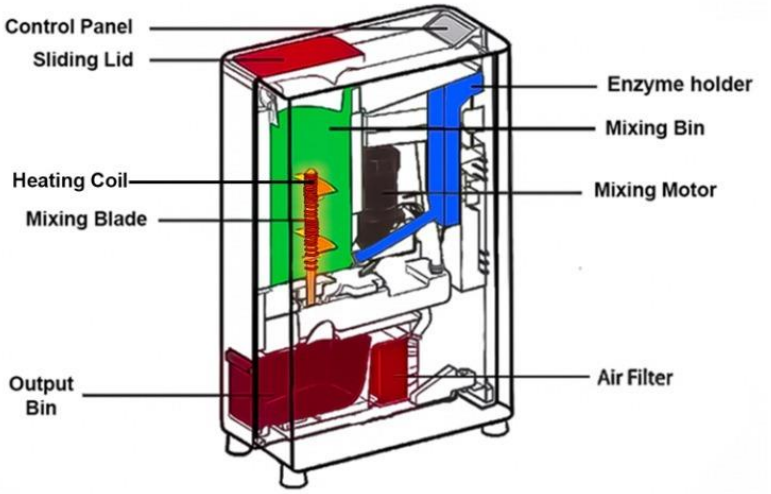
Investment Trends in Waste Solution Sector (2017-2013)



Cost Structure

START UP COSTS	COSTS	EQUIPMENT COST	COST
Registrations		Business purchase price	Null
Business name	6,500	Franchise fees	Null
Licenses	75,000	Start-up capital	240(lakhs)
Permits	60,000	Machinery and equipment	118.73(lakhs)
Domain name	6,000	Computer equipment	2,50,000
Patents/trademarks	29,000	Phones	7,350
Rental least cost	40,000	Fax machines	13,200
Utility connections and bonds	2,60,000	Security system	32,000
Wages	8,20,000	Office equipment	
Phone connection	8,700	Furniture	7,00,000
Internet connection	10,000		
Training	5,30,000		
Stock/raw materials	50,61,000		
Rental release cost	25,000		
Insurance			
Professional indemnity	60,000		
Building and contents	10,00,000		
Vehicle	50,000		
Public liability	1,00,000		
Workers compensation	5,00,000		
Product liability	1,00,000		
Business assets	270L		
Business revenue	70,00,000		
Power supplies	10,37,000		
Stationary and office supplies	10,500		
Marketing and advertising	5,00,000		
Total start-up cost	44,388,700	Total equipment/capital cost	33,880,550

Design and app blueprint



The blueprint consists of the following:

- The main mixing to hold the waste. This will be heated and pressurized to optimal decomposition conditions
- Blending blades to churn out the waste into simpler structures
- A sliding lid and removal control panel for easy access to the waste/enzyme compartments.

The main enzymes to target for decomposition:

- Novoenzymes, AB Enzymes
- Biofilm, Cassava microbes
- Protease, lipase, cutinase, cellulase, or esterase extracts along with pressured KOH and HCL

The basic functionality of the app will include:

- How full the bin is?
- Remote execution of the decomposition process
- Time left until the decomposition process elapses
- Previous logs of waste decomposition
- Alerts and notifications for the same

Further functionality that can be achieved after product development and reiteration, through the use of ML algorithms

- Amount of waste produced
- Type of waste inside the bin (decomposable or not)
- CO_2 production with ability to harness it for tasks
- Amount of waste decomposed
- Compatibility of waste generated