



اُنِيْوَرْسِيْتي تِيْكْنُوْلُوْجِيْ مَارَا
UNIVERSITI
TEKNOLOGI
MARARA

NEW PRODUCT DEVELOPMENT

HOME CINERATOR

FACULTY	:	FACULTY OF COMPUTER AND MATHEMATICAL SCIENCE
PROGRAMME & PROGRAMME CODE	:	BACHELOR OF SCIENCE (HONS.) IN COMPUTATIONAL MATHEMATICS (CS247)
COURSE & COURSE CODE	:	TECHNOLOGY ENTREPRENEURSHIP (ENT600)
SEMESTER	:	OCTOBER 2020 – FEBRUARY 2021
COMPANY NAME	:	HAIRIA ECO SDN BHD
GROUP MEMBER NAME & ID NUMBER	:	<u>N4CS2476B</u> 1. MUHAMMAD NUR ARIF BIN NEKMAT (2018402368) 2. MUHAMMAD IZZUDIN BIN MOHAMMAD KHAIRI (2018287478) 3. MOHAMAD HAFIZAT BIN MOHD BASRI (2018441462) 4. NURANATASSIA IZLYN BINTI HASSAN (2018207464) 5. RAFIQAH EZLEEN BINTI RAZALI (2018440762) <u>N4CS2475B</u> 6. AYU ZAWANIS ZURAINI BT MOHD ZAINUN (2019720147)
LECTURER	:	MADAM NORHANIZA BINTI MD AKHIR
SUBMISSION DATE	:	14 DECEMBER 2020

TABLE OF CONTENT

Contents	Page Number
TABLE OF FIGURE.....	2
EXECUTIVE SUMMARY.....	3
1.0 INTRODUCTION	4
1.1 Problem Statement.....	4
1.2 Objective.....	5
1.3 Methodology	5
2.0 NEW PRODUCT DEVELOPMENT	7
2.1 Classification of New Product Development (NPD)	8
2.2 Research and Development (R&D).....	9
2.2.1 Technology Description	15
2.2.2 Consumer Trend Canvas (CTC)	17
2.3 Product Design / Features	21
2.4 Concept Testing.....	25
2.5 Build Prototype (3D)	30
2.6 Test Marketing	35
CONCLUSION.....	39
REFERENCES.....	40

TABLE OF FIGURE

Table 1:Table of Technology Used in Homecinerator.....	22
Table 2: Features of Homecinerator.....	22
Figure 1: Process of New Product Development.....	7
Figure 2: Familiarity of Incinerator	12
Figure 3: Eco-friendly Type of Person.....	12
Figure 4: Ways of Disposing of the Wastage	13
Figure 5: Type of Waste Product.....	13
Figure 6: Frequency of Burning Waste	14
Figure 7: Front Design of Homecinerator	23
Figure 8: Back Design of Homecinerator.....	23
Figure 9:Detail Features of Homecinerator	24
Figure 10: Gender	26
Figure 11: Marital Status	26
Figure 12: Employment Status	27
Figure 13: Monthly Income	27
Figure 14: Attraction of Household Appliance That Can Burn Waste	28
Figure 15: Range of Price	29
Figure 16: Respondent Feedbacks	30
Figure 17: Recommendation and Suggestion from Respondents	31
Figure 18: Prototype in 3-Dimension Image	32
Figure 19: Screen Display	33
Figure 20: 3-pin Plug	33
Figure 21: Hose, Fan, and Cover of Homecinerator	34
Figure 22: Words from Respondent.....	34
Figure 23: Interest in Homecinerator	36
Figure 24: Promotion from Respondents	36

EXECUTIVE SUMMARY

Technopreneurship is entrepreneurs who are in the core companies involving technology-based sectors, the business that we engage in. We make use of technology through a commercialization process to manufacture new or emerging goods. In general, our companies are marked with strong growth potential and high knowledge and intellectual property leverage.

HAIRIA ECO SDN BHD will focus more on research and development (R&D) that will come out with a new and innovative product. The concept of our product is an electric-based mini-incinerator. The mini-incinerator will increase the productivity of the users to dispose of their household waste products or rubbish. To dispose of the waste, people will throw it in the garbage bin or burning the waste but it will generate problems as the garbage pile will increase and open burning will create air pollution. Homecinerator is designed to overcome those problems regarding the disposal of waste with a low potential to risk the environment.

In developing the product, there are some criteria or processes that should be followed to succeed in the market. This process is called New Product Development (NPD) process. NPD is important for a company. Among the process in the NPD includes R&D, technology description, product design, concept testing, build prototype and market testing. These steps are very essential in developing a new product that has potential.

1.0 INTRODUCTION

1.1 Problem Statement

Garbage waste has different categories that can be categorized according to its chemical types. Types of waste included are liquid, solid, organic, recyclable, and hazardous. There are a few wastes that can be recycled, reduced, and reused. Nowadays, people are not aware of uncontrolled garbage pile problems in their garbage dumpsite. Daily garbage disposal is uncontrolled which leads to garbage pile problems. Plus, certain people did not separate the garbage waste according to their types.

Certain people are indifferent to awareness of the overflowing waste all over the places. All they know is that their daily garbage is being transported to the dumpsite for their house to be clean with no trash at all. They are not aware of the level of capacity and overflow of the waste from the dumpsite.

A couple of people dispose of the garbage waste by burning it in the open area which gives rise to air pollution. Besides, open burning may affect the health of the people in the surrounding area. People should be aware of the effects caused by open burning but as open burning has become the tradition of disposing of the garbage, people are still practicing the so-called old method without considering the negative effects on the aging world. Although open burning is a cheaper method, people should avoid open burning and use a modern way to dispose of the garbage.

The pile of garbage in the dumping place can be reduced if everyone takes responsibility and makes an action to dispose of their daily garbage. If everyone contributes and cooperates in disposing of the daily waste, then the waste issue can be handled with ease and our world can be saved.

1.2 Objective

The purpose of this project is:

- To have efficient waste management with reducing the number of waste by disposing of the daily waste with ease.
- To reduce the environmental pollution by separating the pollutant that has been emitted by the incinerator through the filter.

1.3 Methodology

In the development process, there are several strategies used to develop this product that will solve the defined problem. The first method is research and analysis. This method is to observe the strength and weaknesses of the existing product on the market so that we can make innovation and invention in our product. Based on some research, waste incinerators are used mostly in the waste factory and medical industry because they need a proper way to eliminate the waste. Proper incineration can convert certain wastes into gases and incombustible solid residues that are relatively harmless. Modern incinerators include pollution mitigation equipment such as gas cleaning. Incineration involves the high-efficiency combustion of certain types of solid, liquid, or gaseous wastes.

The second method is a questionnaire concerning the innovations distributed to random individuals. Respondents were asked about the product's understanding of whether or not the product was known to them. The project utilizes the Google Form platform for an online survey. The key reason for using Google Form as a medium is that it makes it convenient for the respondent to answer the questionnaire anywhere and that it is also possible to answer the questionnaire by cell phone. For the product, a feedback statement is needed so that it can be

enhanced. As the respondent will potentially become a future client, this move is very necessary and vital. Therefore, all recommendations or comments should be taken into consideration to keep the products on the market and to develop them in the future.

The third method is observation. The interpretation of observation is the process of monitoring something from something viewed or witnessed or a conclusion or inference. For many nations, waste management issues have become a pressing concern, and it has become a global problem that everybody wants to solve. Waste involves food packaging, household goods with single-use plastics, bottles, or even food scraps. Landfills are also a concern. Many landfills lack adequate management of on-site waste, thus leading to additional environmental risks. Landfills leak and pollute groundwater and other nearby natural habitats in the long term, making waste management very difficult. This observation will help to develop the product with more efficiency and harm to the environment.

2.0 NEW PRODUCT DEVELOPMENT

New product development is a series of steps that includes the conceptualization, design, development, and marketing of newly created or newly rebranded goods or services. The objective of product development is to cultivate, maintain and increase a company's market share by satisfying consumer demand. The process of developing a new product can be carried out by creating an item to compete with a specific product or by improvising an existing product. There are five steps in the NPD process before full-scale commercialization takes place. The process of developing a new product is as shown in the figure below:

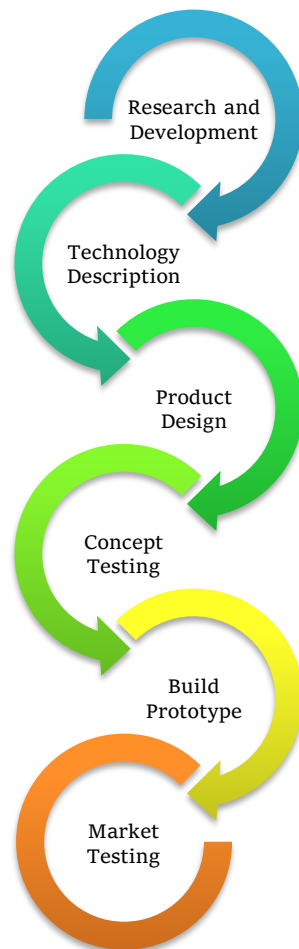


Figure 1: Process of New Product Development

2.1 Classification of New Product Development (NPD)

The classification of new product development can be divided into two main categories, which is:

i. Completely New Product

A completely new product is a product that has never been produced or launched on the market before. They are entirely creative and not derivative of older goods. In other words, a brand that the first of its kind and generates a whole new market. Technical and scientific development is usually a product of this category.

ii. Improvement on Existing Product

There are four types in improving the existing product, which are additions to existing product lines, improvement, and revisions to existing products, repositioning, and cost reductions. The first type is the additions to existing product lines are subsets to the new line product, for example, the new product is targeted to different market segments. Second, for improvement and revisions to existing products are to replace the existing product with a new product which is functional enhancements. The cost reduction is to offer no benefits to the customer other than possibly reduced price. This will provide enormous added-value to the firm. Lastly, the repositioning is the new applications to existing products, which is more to do with customer perception rather than technical development.

Homecinerator is more an existing product. An incinerator was usually used in big industries and factories. For instance, waste factory, medical waste industry, and plantation industry. Based on our research, the miniature garbage waste has two connectors which are electricity and water. From another research, the mini incinerator is using fuel. HAIRIA ECO SDN BHD presents a Homecinerator that is

available for every household with a modification and improvement from an existing product.

2.2 Research and Development (R&D)

Research and development (R&D) is the process where how a company obtains new knowledge that use to create new technology, products, services, or systems that will either use or sell. According to Will Kentonr (2020), research and development (R&D) include activities that companies undertake to innovate and introduce new products and services. It is often the first stage in the development process. The goal is typically to take new products and services to market.

i. Product

The idea of developing an incinerator is based on our own experience. In some of the households wherein the urban area, their garbage is collected by the waste management association near their place. In the village areas, garbage in households is burned as a way to dispose of the garbage. When we burn the garbage it will cause pollution to the environment. So, based on this experience, we decided to develop a new product that will help to ease waste management while saving the ecosystem.

A lot of incinerators now release toxic gas after burning garbage and it causes serious damage to our nature. It is because the gas is not filtered first when it is released into the air. With this opportunity to make a profit, our company introduced new build in filter incinerator, Homecinerator. This product can help to solve problems with waste management and pollution. Also, this product can improve our waste management and it is eco-friendly. Based on a study conducted on the existing incinerator, more idea is used to improve our product to satisfy the customer.

The R&D for this product is creative and relevant that had been applied to this product by using electrical induction to burn the garbage. The current incinerator

burns things with fire by the light the fire manually. This incinerator also has two filters to where the gas release from the burning is filtered through these two filters. The gas then is used in the combustion process to save energy. Besides, this product also has LED touch screen features so that users can choose the mode temperature and speed of the fan easily. The material will have good heat resistance so that it can support the LED touch screen function.

Next, this product is simple to use as it has an automatic function where the incinerator will choose the best temperature to burn the garbage based on the weight of the garbage. When we load the garbage into the incinerator we can just press the auto button and the incinerator will scan the weight of the garbage and pick the temperature to burn it. In the burning parts, there will be a separate container that has a high resistance to make sure it safe to burn.

ii. Market Feasibility

Customer

A customer is an individual or company that receives, consumes, or buys a product or service and can choose between different goods and suppliers. Customers are important because they derive revenues, without the customer, businesses have nothing to offer. Market segmentation is research that decides whether the company divides its clients or cohorts into smaller groups based on characteristics such as age, income, personality traits, or behaviour.

Based on surveys that had been conducted, we would like to satisfy the customer expectations for the product. The customer's first expectations are the product's durability for using it for a long time. Since there is a separates container to burn the garbage, only that container has high heat resistance. The incinerator itself also has good heat resistance to make sure the LED touch screen will not malfunction.

Next, the customer expectations are the product to be less costly. Since the incinerator is using high heat the material for it must be expensive so that it can function properly. The material for the filter also will be costly as the incinerator needs to not cause any pollution to the environment. All the technology like LED and touch screen will add the cost for produce the incinerator.

Customer segment performs research focused on geographical, demographical, behavioural, and psychological segmentation. As for geographical segmentation, we target the urban area where the waste management is not properly done. We also target the countryside where there is no waste management company and they always just burn their garbage. Next, for behavioural segmentation, the customer is a group that follows the benefits and status of the user. Our target market is the customers who are looking for a product that is eco-friendly, convenient, and makes it easier to dispose of garbage.

Demographical segmentation consists of age, gender, income, and life-cycle stage. My company's target customers are 13 years and above as this product is an electronic device that is dangerous if the children use it without an adult around. Psychographic segmentation consists of social classes and lifestyles. This product is easy to use since there is an automatic function where households that have family especially can be our potential customers as it can make our waste management easier is simple to do.

iii. Market Survey

The market survey is an analysis of the buying power and expenditure characteristics of consumers who fall within the reach of the target customers of the company. This is the process in which consumer feedback on a new product is collected. The market survey aims to provide managers with insights into their target consumers. The market survey for this adjustable spectacle will be in the form of a Google Form survey which asks for their opinions and recommendations on this spectacle. 117 respondents answered the following

questionnaires. The findings or answers that have been collected from the survey are discussed below.

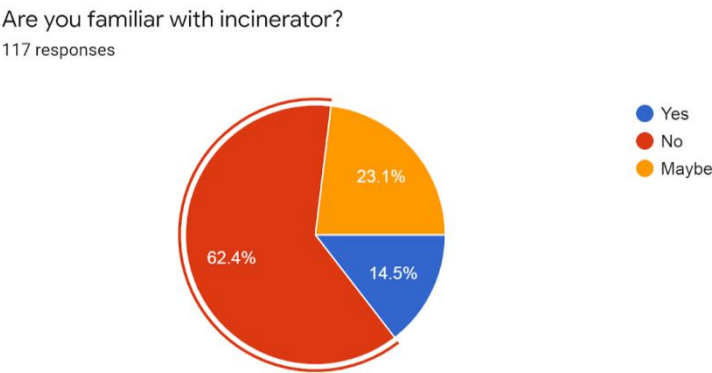


Figure 2: Familiarity of Incinerator

Based on the figure above only 14.5% of the respondents are familiar with the incinerator while 23.1% of the respondents are not fully familiar with the incinerator while the rest did not know about the incinerator.

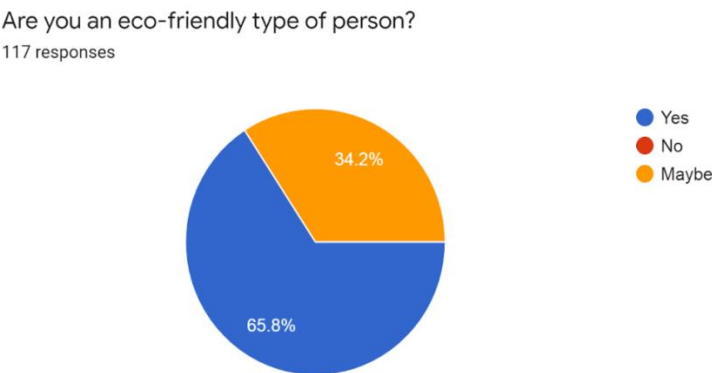


Figure 3: Eco-friendly Type of Person

Based on the figure above, 65.8% of the respondents are an eco-friendly person while the rest is not fully eco-friendly and there 0%, not an eco-friendly user.

How do you dispose your wastage?
117 responses

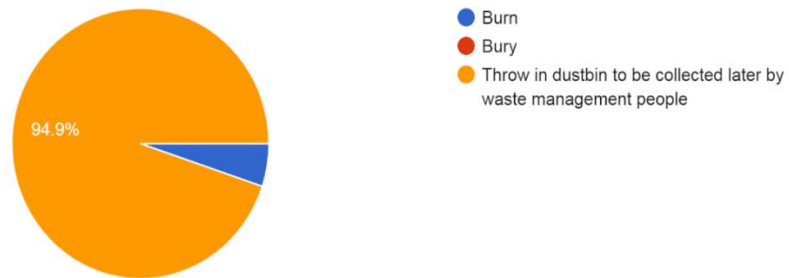


Figure 4: Ways of Disposing of the Wastage

The figure above shows how the respondent's dispose of their waste where there is 94.9% of the have their garbage collected by the waste management company and about 5% of them burn it.

If your waste product can be categorized, what type of waste product that you always burn? (You can choose more than one)
117 responses

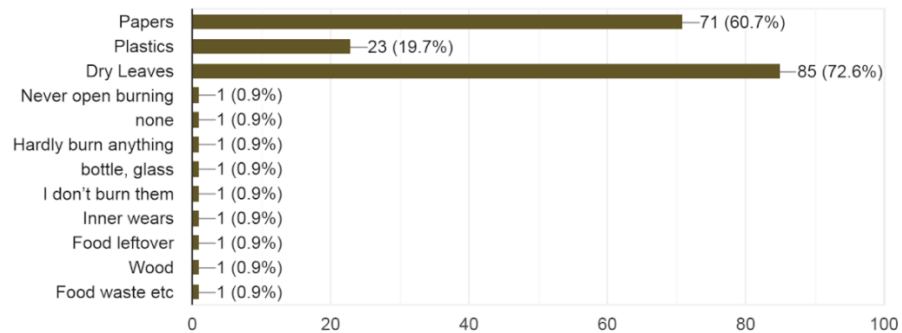


Figure 5: Type of Waste Product

The figure 5 shows the type of the things that they burn and most of them are dry leaf, papers, and plastic with 72.6%, 60.7%, and 19.7% respectively.

8. How often u burn your waste?
117 responses

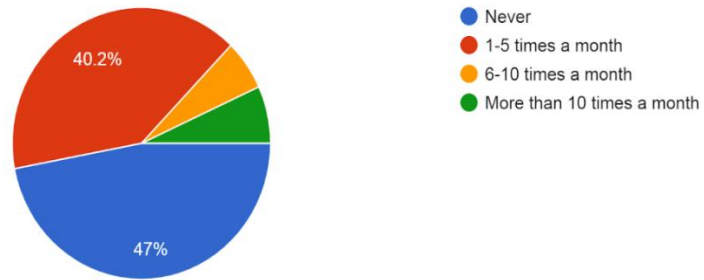


Figure 6: Frequency of Burning Waste

Based on the figure above, there is 47% of the respondents that have never burn their garbage while 40.2% of the respondents burn their waste 1-5 times per month while 6% of the respondent burn their waste 6-10 times per month and 6.8% of them burn more than 10 times per month.

2.2.1 Technology Description

Homecinerator is designed to help in reducing the garbage pile problems throughout the whole world. The size of the product is built small since our target market is households. There are a lot of technological functions built into our product, Homecinerator, such as touch screen function, filter function, induction plate, and heat rod functions, piston function, and energy saver function.

Since we live in the modern era, we decided to use the touch screen function for the easy usage of the user. The touch screen function is built-in for the user to choose the input. The user can set the level of temperature and the speed of the fan built in the filter function manually or they can just automatically choose the mode set by the product. The mode of the system will suggest a suitable level of temperature and the speed of the fan according to the garbage weight.

The garbage weight can be determined by the weighing scale system which is built underneath the induction plate of the product. We decided to put the weighing scale to measure the garbage weightage so that the product can give a suitable level of the temperature to be burned and the speed of the fan to be used.

The induction plate and the heating rod that is built at the lower parts of the product will be the burning function of the garbage. To make it an eco-friendly product we use the concept of heating the rod to burn the garbage instead of fire to reduce the smoke and ashes after the burning of the garbage. The induction plate will receive the heat transfer by the heating rod and afterward the garbage will be burned by the heat.

There are two filter functions used in the product where one is at the top cover of the product and the second is at the lower part of the product. Both of the filter function is built along with the fan to filter out the smoke and ashes of the burning garbage. The main reason why we choose to

build two filter functions is to reduce the pollutants caused by the burning of the garbage. The first filter will filter out the ashes and the second will filter out the smoke.

As the product is eco-friendly, the energy saver is a must for the product. The energy saver is built inside the plug to minimize electricity usage. The energy saver has a lot of benefits such as increased efficiency can lower greenhouse gas (GHG) emissions and other pollutants. Besides, energy saver helps on improving energy efficiency can lower individual utility bills, create jobs, and help stabilize electricity prices and volatility.

2.2.2 Consumer Trend Canvas (CTC)

CONSUMER

TREND CANVAS

Home Incinerator

TREND: Environmental Friendly

1. ANALYZE

Basic Needs

Which deep consumer needs & desires does this trend address?

Relevant

- It is a good to cultivate recycling attitude/behavior in our society.

Nature

- To maintain our environment in a good condition.

Fairness

- Helps to prevent natural disasters and at the same time for our long term health.

Self-improvement

- A being better consumer.

Simplicity

- The product has automatic mode to make it easy to use.

Convenience

- Easy to burn garbage.

Emerging Consumer Expectations

What new consumer needs, wants and expectations are created by the changes identified above? Where and how does this trend satisfy them?

The product should be able to easily operate and maintain with simple instruction to use it.

- This will provide a good user experience.

The product should not affect the environment when use it.

- Air pollution can be avoided while using the product.

Drivers of Change

Why is this trend emerging now? What's changing?

Shifts: Long-term, widespread macro changes

Climate change

- Global warming that caused open burning.

Incineration technology development.

Increasing number of garbage/waste in the house.

Inspiration

How are other businesses applying this trend?

Industrial incinerator.

Incinerator manufacture company.

Incinerator that use fuel.

Campaign from government, Friends of Environment,

2. APPLY

Innovation Potential

How and where could you apply this trend to your business?

Vision

- To become the world's leading provider of sustainable green solutions for household electronic appliances.

Business Model

- Droppshipping, digital marketing and home appliances retailer


Who

Which (new) customer groups could you apply this trend to? What would you have to change?

Our main target household and office.

YOUR INNOVATION(S)

Homecinerator



The information they get about their customers and other potential buyers is precious for companies. Nowadays, most customers follow patterns and generally let themselves be guided by them. These consumer trends provide crucial information that allows businesses to gain a grip on the possibilities of opportunities for innovation and transform it into an opportunity. It is then possible to convert this information into innovative and business opportunities. It is then possible to convert this information into innovative and business opportunities.

a) Basic Needs

Homecinerator is relevant nowadays because it is good to cultivate recycling attitude/behaviour in our society. Nature and fairness is an important aspect of basic needs in today's trend, to maintain our environment in a good condition. Helps to prevent natural disasters and at the same time helps for our long term health. As marketers know, self-improvement is a key driver of consumers' decision to improve themselves to become a better consumer. In modern day doesn't mean everything needs to be complex. Concept of simplicity actually can be a huge strategic advantage for business opportunities because consumers get busy with the day to day task so a simple product to use can help improve consumer daily life. This product is convenient to burn garbage during rainy days because this product is placed inside the house.

b) Drivers of Change

Climate change might also affect human health by making our air less healthy to breathe. Global warming that caused open burning can lead to an increase in allergies and harmful air pollutants. Higher temperatures associated with climate change can also lead to an increase in ozone, a harmful air pollutant. These are the drivers of change that influence our business to bring a new product of innovation to the market with more additional facilities that can help improve the environment. From day to day, new technology is emerging. In order to be competitive in the market, all businesses in this industry are enhancing their processes and facilities. For quite some time now

the waste generated by humans has been damaging to our environment. Humans produce too much garbage and are unable to deal with it in a sustainable way. Our oceans and landfills are filled with waste that is not compostable and cannot be properly recycled. In addition, this new innovation product is being introduced on the market with the aim of following the latest trends and preventing our company from falling behind other companies.

c) Emerging Consumer Expectations

One of the main emerging trends is the product should be able to easily operate and maintain with simple instruction to use it. This will provide a good user experience because our company product is easy and simple to use. Then, the product that our company produces should not affect the environment when used. Air pollution can be avoided while using the product because our product has a double filter system.

d) Inspirations

The inspiration for innovating the garbage incinerator comes from the observation of current industrial incinerator technology. Our company decided to innovate to solve the problem and include additional features. In order to satisfy the consumer's satisfaction with our product. Other than that, through observing the successful incinerator manufacturing company, we got the idea to make our innovation more advanced than other companies. This product was also produced because of a campaign from the government, Friends of Environment.

e) Innovation Potential

There are many types of garbage incinerator in the current market. However, there is no current technology of garbage incinerators that have a double filter system, led display and energy efficiency that are available in the market. This opportunity is taken by our company to produce, Homecinerator.

Homecinerator is environmentally friendly because this product does not release chemical gas after incinerating the garbage.

The vision of our company to become the world's leading provider of sustainable green solutions for household electronic appliances. Therefore, this product will be able to help to improve our environment. For marketing, our company will be using digital marketing such as Shoppe, Lazada and other online platforms that are suitable for our product. Besides that, our company will use home appliances retailers and dropship agents to promote and sell our product.

f) Who

The main target for our product is household and office. For households we are targeting customers that want to be a better consumer towards the environment and health because our product can help to improve the environment. For office, we are focusing on promoting our products to the office, focusing on improving the environment and nature by burning the garbage instead of throwing the garbage. Our company mainly targets these two groups because they are the main potential users of this product because they are most likely to purchase this product.

2.3 Product Design / Features

Details on the characteristics of the product and the features of the, Homecinerator will be addressed in this section. This definition is structured to meet the needs of the customer. Definition of the design in the table below:

No.	Name	Material	Function
1	Cover	Molybdenum:	Enhances strength, toughness temperature strength, and corrosion resistance.
2	Body housing	A silver-white metal that is ductile and highly resistant to corrosion.	
3	Screen Display	LCD glass: Liquid Crystal Display (LCD) glass which is display colour, series of wire where the device can be touch, and protective glass cover.	As a control panel, for on/off the system, fan controlling, heating temperature, heating control.
4	Heating element	Nichrome metal: Most resistance wire heating elements (80% nickel and 20% chromium).	For able to burn any material such as paper, food waste and others.
5	Motor Fan	Axial-flow: Axial flow fans have blades that force air to move parallel to the shaft about which blade rotates.	For heating and cooling engine. This prevents the engine from overheating by blowing the air through the hose for the second motor fan and filter.
6	Fabric Filter	<ul style="list-style-type: none">• Polyacrylonitrile (Dralon-T)• Aromatic Polyamide (Nomex)• Polytetrafluoroethylene (PTFE)	The air polluted with dust will pass through the fabric filter and rid the dust particles. So that it will flow out the non-toxic air to the environment.

		<ul style="list-style-type: none"> • Glass fibre • T\Ryton (polyphenyl and dichlorobenzene) 	
7	Hose	Flex Hose 46"	To flow the polluted air for the second filtration.
8	Vent	Galvanized steel	To flow the clean air after filtration.
9	Hose Box	Stainless steel	Contain the air hose, second fabric filter, second motor fan
10	3-pin Plug		Fit for every household for an access electricity supply

Table 1:Table of Technology Used in Homecinerator

Capacity	10 Kg
Power Watt	2950 W
Power Saver	30% from Power Watt
Height	50 cm
Width	40 cm

Table 2: Features of Homecinerator



Figure 7: Front Design of Homecinerator



Figure 8: Back Design of Homecinerator

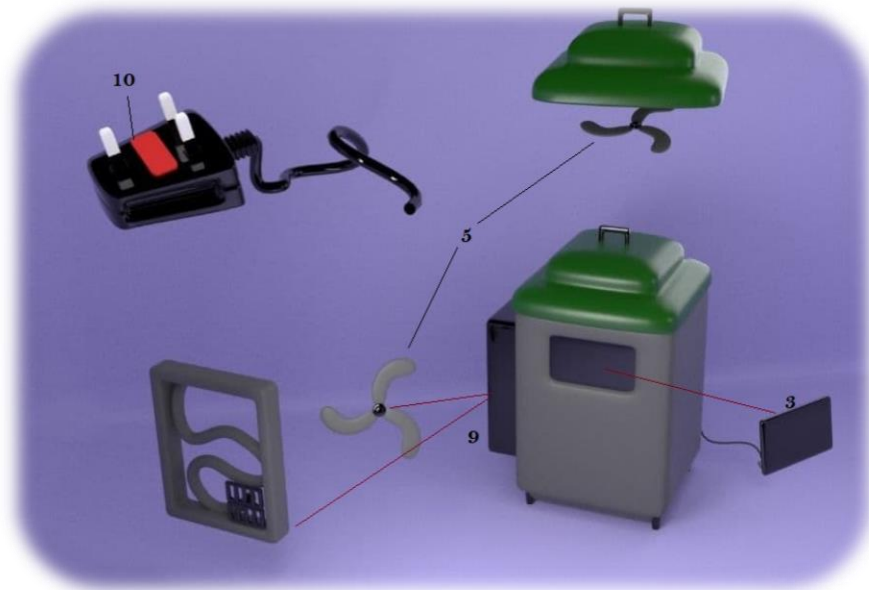


Figure 9:Detail Features of Homecinerator

2.4 Concept Testing

Concept testing is the method used before introducing the product to the market to analyse customer acceptance of the new product concept. Concept testing is an important process that may be used at the later stage of research into product development. Then, concept testing is a beneficial step in defining the perception, wants, and needs of a product. The purpose of concept testing is to better evaluate ideas. For the product idea, this is done to determine the buying attitude and intentions of the customer. This is also for the company to decide whether or not to invest before investing in research.

The garbage incinerator from our company is more advanced than others that have already existed in the current market, which is why our product has an eco-friendly filtration that can help to reduce air pollution. Homecinerator has energy-efficient appliances that are a great way for households to save money and energy. So, our company uses this opportunity to introduce this product while this type of technology has not yet been implanted by the other company.

Using online surveys, we would like to observe the respondents. This concept test will aim to make random people my respondents.

Gender

117 responses

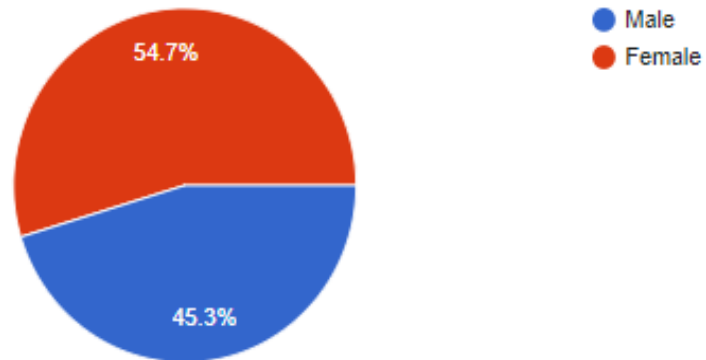


Figure 10: Gender

Our questionnaire respondent consists of 117 people. More than half of the respondent to our questionnaire is female.

What is your current marital status?

117 responses

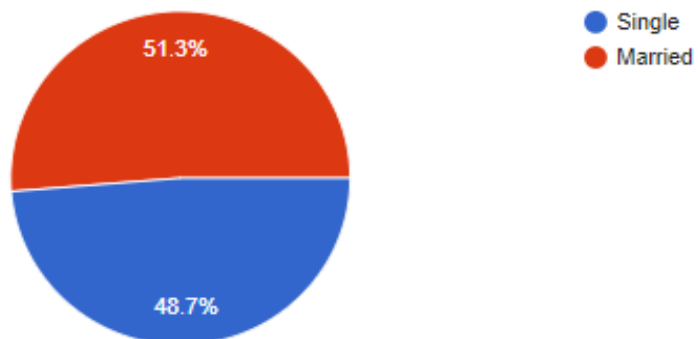


Figure 11: Marital Status

Based on the response concluded for marital status, we can conclude that many have agreed that married people are more interested in using this technology. This may be because married people are more interested in this type of appliance.

Please choose your current employment status.

117 responses

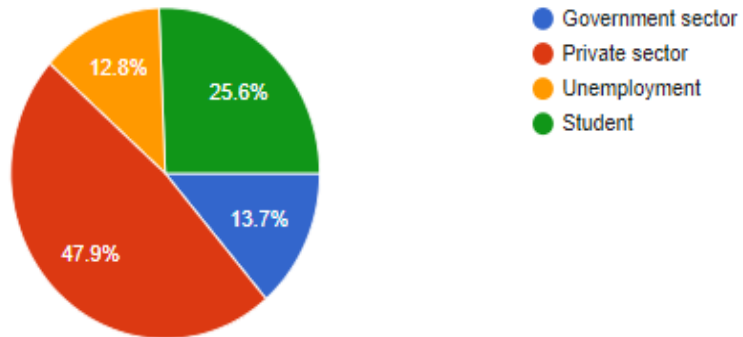


Figure 12: Employment Status

Based on current employment status, we can see that most of the private sector employees will be using, Homecinerator. This is because private sector employees seem more interested in buying our product. Government sector employees usually have a lot of time to clean their house and throw garbage. Some students and unemployed cannot afford to buy this type of electronic appliance because the range of the appliances prices is quite pricey.

Kindly state your monthly income

117 responses

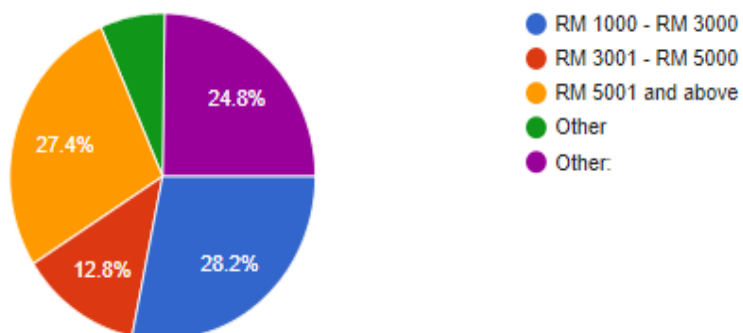


Figure 13: Monthly Income

The range of monthly income for most of the respondents is below RM3000 and above RM1000. However, 12.8% of the respondents gain monthly income above RM3001 and below RM5000. The respondents that gain monthly incomes more than RM5001 are stated only 27.4%. Based on the data collected, it displays that more than 50% of the respondents have a monthly income more than RM1000. This shows that more than half of respondents can affordable to buy our company's product

Would you like to buy any household appliances that can help you in you in burning your waste?

117 responses

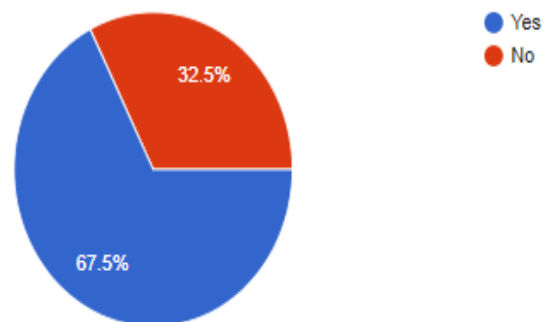


Figure 14: Attraction of Household Appliance That Can Burn Waste

Based on the 117 responses received, more than 50% would like to buy household appliances that can help in burning waste.

If our product is available on the market, what is your expectation on the range of the price for the Homecinerator would be?

114 responses

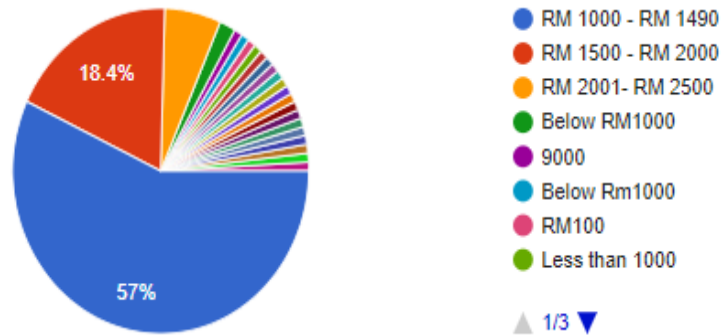
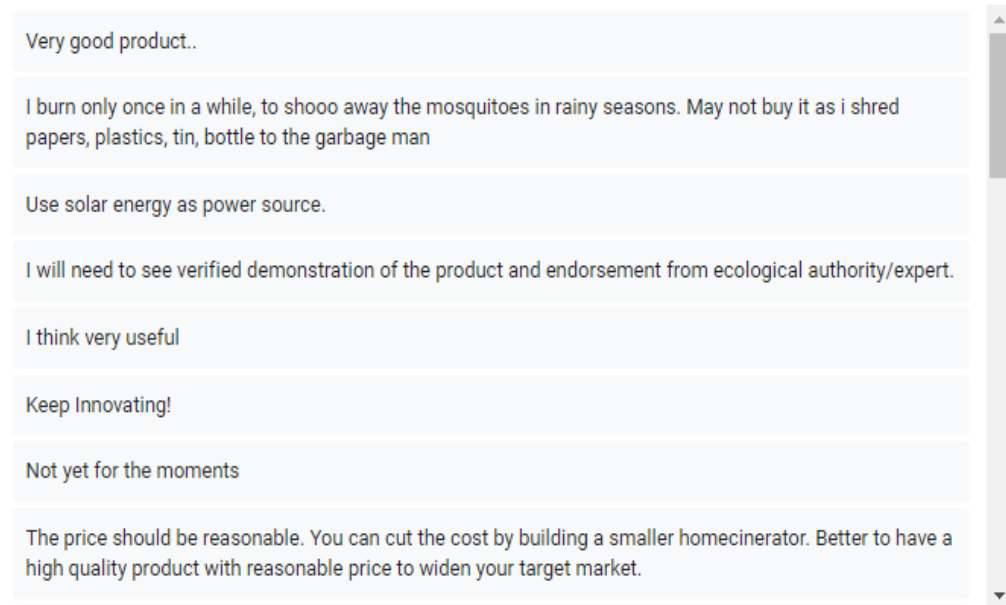


Figure 15: Range of Price

57% of our respondents expect our product will be RM1000 – RM1490. However, 18.4% of the respondents expect our product will be RM1500 – RM2000. The other respondents expected our product to be above RM2001 or below RM1000.

For future references, we are open to any enhancements and improvements for our product. (if you have any)

33 responses



A screenshot of a feedback form interface. It features a vertical list of eight response boxes, each with a light gray background and a thin border. The responses are as follows:

- Very good product..
- I burn only once in a while, to shooo away the mosquitoes in rainy seasons. May not buy it as i shred papers, plastics, tin, bottle to the garbage man
- Use solar energy as power source.
- I will need to see verified demonstration of the product and endorsement from ecological authority/expert.
- I think very useful
- Keep Innovating!
- Not yet for the moments
- The price should be reasonable. You can cut the cost by building a smaller homecinerator. Better to have a high quality product with reasonable price to widen your target market.

On the right side of the form, there is a vertical scrollbar with a gray track and a white slider, indicating that there are more responses than are currently visible.

Figure 16: Respondent Feedbacks

For our product references, we can conclude that the respondent would like our product to be user friendly in terms of energy consumption, low price and the size of the product is suitable for daily uses.

2.5 Build Prototype (3D)

A prototype is a depiction of an idea generated before the final solution exists. It allows us to understand the product, and probably our potential clients too. For photoshoots, trade shows and exhibits, user feedback, and design testing purposes, prototype models are often used. Prototyping is important for concept evaluation and testing, clarification of product costs and challenges, marketing products to others, and patents. Enabling usability testing is one of the aims of creating a prototype. Usability is a measure of the experience of the user interacting with the object.

You need to highlight the maintenance cost as well and how long it's life span
This may be not viable products for a household as it may raise the electricity super high. Maybe if it is in a public space maybe it can be reasonable
The homecinerator should have life longer and someone that have skills to repair it
Longlife of the product is more important money value.
The price should be reasonable. You can cut the cost by building a smaller homecinerator. Better to have a high quality product with reasonable price to widen your target market.
Not yet for the moments
How eco-friendly was this product for sustainability
Very satisfied to your product. Keep it up to make it real.

Didnt mention any measurement or size of the product. would be better to mentioned it cause if it is too big i wont consider buying :)
Nothing so far but good luck!
Durable and portable
always do a good product in future
I hope the end product can be turned into compost
.
Incinerator for office use with larger capacity versus home incinerator.
Beside only disposal rubbish, it would be good that it can generate energy in return.
Keep Innovating!

Figure 17: Recommendation and Suggestion from Respondents

There is a variety of respondent feedback, according to the survey, that they would like to see the real size for this product and they also want this product to make it easy to install and long-lasting. They also suggest we create a team of advisors or promoters to promote and explain this product from house to house. Lastly, they want to see a verified demonstration of the product and endorsement from ecological experts as this product's main goal is eco-friendly. This product has multiple different filters to filter the harmful gas and flow out the oxygenated gas to the outside, for safe environmental purpose. Many factors determine the usability of this product such as durability, portability, credibility, quality of use, simple learning, sustainability, and satisfaction.



Figure 18: Prototype in 3-Dimension Image

i. Durability

Homecinerator is a sturdy product. This product is created using high-quality metals and materials as this product body is high heat and pressure-resistant. This product can endure the heat for a long time and ensures a long-lasting life span.

ii. Portability

This product is easy to place as the sizes of the product are smaller and lighter comparing regular incinerators that are being used by a big factory or large corporation.

iii. Credibility

As the main goal of this product is eco-friendly, Homecinerator will have verified demonstration of the product and endorsement from ecological authority or experts to gain trust from future clients for this product's credibility.

iv. Quality of use

The utility of Homecinerator is that future clients can incinerate their waste products such as plastic, paper and other dry waste products with ease. This product will burn all the waste and flow out harmless gas to prevent air pollution

to the surrounding environment. This product also equipped a touch screen for the clients to select the type of waste product, timer, and others.



Figure 19: Screen Display

v. Simple learning

The client can quickly memorize the procedure of the product as the instructions are easy to follow and a manual book comes with it product. The product also has an easy plug-in for electricity use.

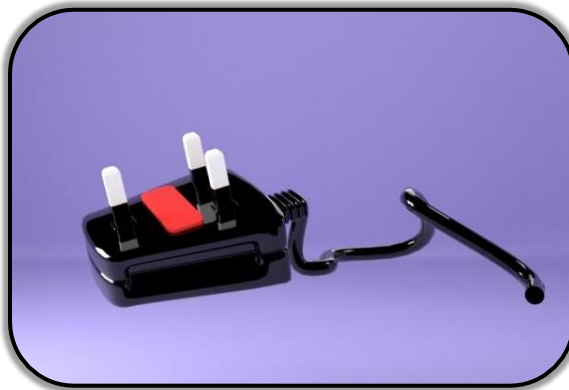


Figure 20: 3-pin Plug

vi. Sustainability

As for the normal incinerator, it is not sustainable because incinerator involves combustion to burn the waste and harmful gas will be produce but for Homecinerator, it does not involve combustion as it does not use fuel to incinerate and the gas will flow through multiple filters to produce oxygenated gas. So, the

product can sustain a better air for surrounding even if the product is use for a long time.

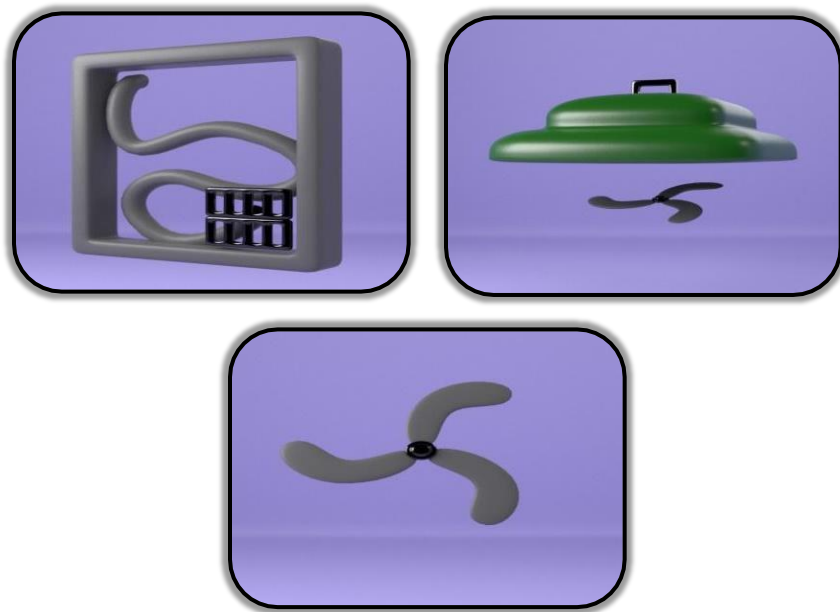


Figure 21: Hose, Fan, and Cover of Homecinerator

vii. Satisfaction

From the regular incinerator, most of the client's requirements have been met by the product. Customer needs will be met with the latest technology framework.



Figure 22: Words from Respondent

2.6 Test Marketing

Test marketing is a marketing strategy that seeks to investigate the reaction of the consumer to a product or marketing plan by making it available on a limited basis until it is distributed more broadly. Before starting commercial development of any large-scale product, test marketing is crucial. Test marketing allows the company to check the product and the plan as a whole, such as targeting and positioning strategy, advertising, packaging, and delivery. There are three forms of test marketing, such as regular marketing, where they are expensive and extensive. Next is the controlled test market, which is tested between the controlled panels of shoppers. Finally, the virtual test market where researchers measure customer reactions to the product. As for the product Homecinerator, our company is conducting research by using the simulated test market. A survey was conducted on the target consumer category.

The survey is a questionnaire that is administered through an online platform. After collecting the survey answers, it can be inferred that the main target customer for Homecinerator is the household. The survey also lets our company see how interested they are in having my company in the future. Besides, our company has always taken care of the feedback of the respondents to other people on this product.

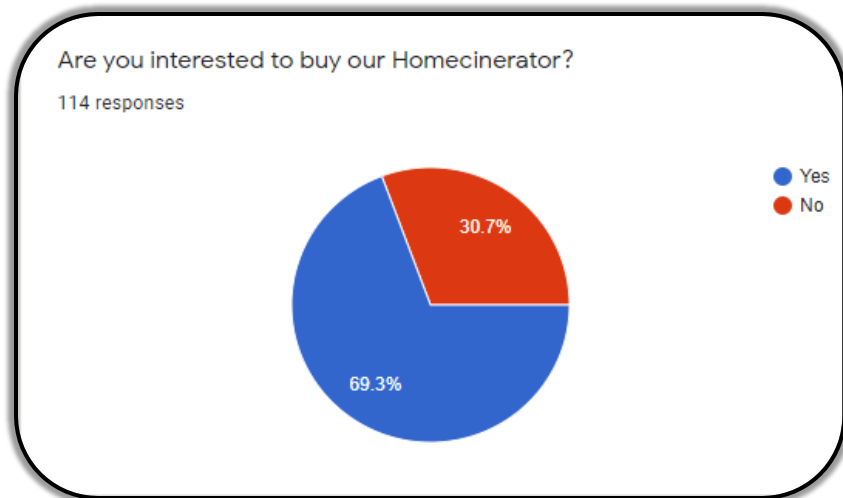


Figure 23: Interest in Homecinerator

Figure 24 shows 114 responses received by the survey, most all of our respondents, 59.3% of the respondents, were interested in this product. Another 30.7% were not interested in the incinerator concept.

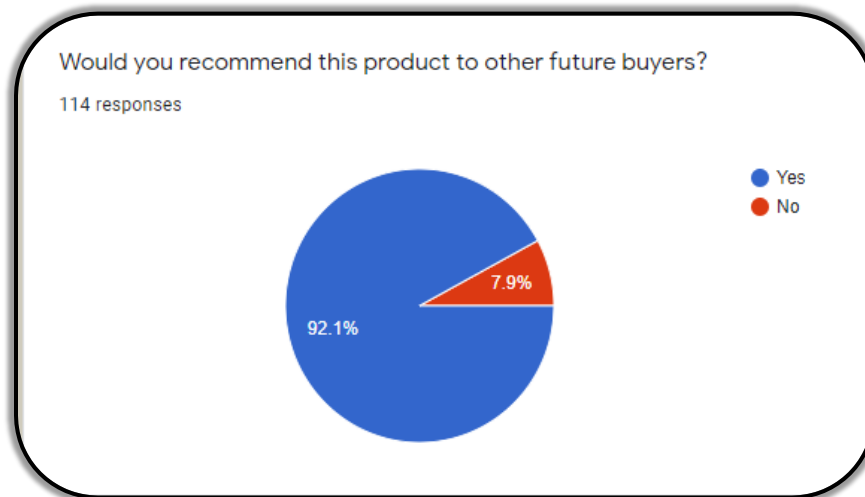


Figure 24: Promotion from Respondents

Figure 24 indicates that nearly most of respondents would like to suggest this product. However, others 7.9% would not recommend this product.

The target market is one of the marketing strategies designed for test marketing. It consists of determining the attractiveness of each market segment and identifying one or more market segments to join. The target market is the most likely group to buy the goods or services of a business. The target market strategy needs to be develop to decide on how to promote through social media to reach out the targeted customers. Plus, our target is the household who often does open burning.

Also, advertising is any form of communication, presentation, and promotion of ideas, goods, or services paid for by an identified sponsor. The advertising purpose is a descriptive, compelling, comparison, and reminder. There are three advertising strategies for social media advertising. The first method of advertising is through social media ads. In this innovative product, our company chooses and prefers to use advertising media. This is because we are living in the era of modern technology, where most of the commercials are in media types. Next, Homecinerator is also advertising through outdoor advertising, radio, and podcast. Outdoor advertising reaches the customer when driving or doing outdoor activities. In the meantime, radio or podcast ads will reach the consumer by listening to the radio while driving. This can help to encourage the customer to purchase our product and help direct the customer through the use of an incinerator.

Distribution is the process of making a product or service available to the customer or business user who needs it. This can be achieved directly by the manufacture or service provider. There are three approaches to distribution, called mass distribution, selective distribution, and exclusive distribution. As far as incinerator is concerned, our company used selective distribution because we choose to restrict the number of outlets that handle our product. Our company only sells this incinerator at the electronic store as this form of intermediary supports the desired product positioning. Finally, as far as packaging is concerned, our company would wrap the incinerator body to protect it from scratch before the customer purchases the incinerator.

CONCLUSION

As a conclusion, referring to the problem statement, it is known that the major problem during disposing waste is that people are unaware of uncontrolled garbage pile problems in their area garbage dumpsite. Daily garbage disposal is uncontrolled which leads to garbage pile problems. Thus, an incinerator is essential to help in overcoming these situations. However, a regular incinerator will raise more problems as when the process of burning waste complete, it will produce harmful gas or smoke that will cause air pollution and affect the surrounding people. Based on various researches, a solution has been come out to solve this problem. HAIRIA ECO SDN BHD introduces an electric-based mini-incinerator called "Homecinerator" that can incinerate waste without using combustions method that will release harmful gas to the surrounding people. Thus, it can reduce air pollution and prevent health problems. Based on the result of the questionnaires, it can be concluded that the product can achieve some levels of success in the market. Most respondents are eager to await this new product to be on the market. Therefore, this will proved that Homecinerator produced by the HAIRIA ECO SDN BHD has a bright future in the market.

REFERENCES

- Agarwal, S., Jain, V., & Goswami, K. (2014). *ENergy E Efficient Mac P Rotocols F or*. 4(1), 153–160.
- April, A., & No, S. (1952). *Sept. 2, 1952 E. J. WEGGEL*.
- Balkus, J. et al. (1996). United States Patent : 5861366 United States Patent : 5861366. *New York, I*(19), 1–29.
- Baptista, A. (2020). Is burning trash a good way to dispose of it? Waste incineration in charts. *The Conversation*, 1–5.
- Batterman, S. (2004). Findings on an Assessment of Small-scale Incinerators for Health-care Waste. *World Health Organization, Protection of the Human Environment*, 77. https://www.who.int/water_sanitation_health/medicalwaste/en/smincinerators.pdf%0Ahttp://www.who.int/water_sanitation_health/medicalwaste/smallincinerators/en/
- De Marco, A., Proietti, C., Anav, A., Ciancarella, L., D'Elia, I., Fares, S., Fornasier, M. F., Fusaro, L., Gualtieri, M., Manes, F., Marchetto, A., Mircea, M., Paoletti, E., Piersanti, A., Rogora, M., Salvati, L., Salvatori, E., Screpanti, A., Vialetto, G., ... Leonardi, C. (2019). Impacts of air pollution on human and ecosystem health, and implications for the National Emission Ceilings Directive: Insights from Italy. *Environmental International*, 125(November 2018), 320–333. <https://doi.org/10.1016/j.envint.2019.01.064>
- Examiner, P., & Lazarus, I. S. (2002). (12) *United States Patent*. 1(12).
- F. Sh, C. Simon, and P. A. (1970). "Municipal solid waste management in MalaysiaPossibility of improvement?," Malaysian. *Journal of Science*, 23(January 2004).
- Hopewell, J., Dvorak, R., & Kosior, E. (2009). Plastics recycling: Challenges and opportunities. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1526), 2115–2126. <https://doi.org/10.1098/rstb.2008.0311>
- Makarichi, L., Jutidamrongphan, W., & Techato, K. anan. (2018). The evolution of waste-to-energy incineration: A review. *Renewable and Sustainable Energy Reviews*, 91(May 2017),

812–821. <https://doi.org/10.1016/j.rser.2018.04.088>

Making Medical Injections Safer. (2010). *THE INCINERATOR GUIDEBOOK A practical guide for selecting, purchasing, installing, operating, and maintaining small-scale incinerators in low-resource settings. 1*, 58.

Murdoch, G. (2008). Trash and burn: Singapore's waste problem. *Reuters*, 1–5. <http://www.reuters.com/article/us-waste-singapore-idUSSP9046620080522>

Permanently, F., & Trailered, M. (2020). *NEED A MOBILE SOLUTION ?*8, 1–4.

Purkayastha, D., & Majumder, M. (2015). Collection and recycle bin location-allocation problem in solid waste management: A review. *Pollution*, 1(2), 175–191. <https://doi.org/10.7508/pj.2015.02.006>

Razali, M. A., Madon, R. H., Ruzaimi, S., & Isa, M. (2020). *Development of Mini Incinerator for Producing Syngas from Household Waste. 2*(1), 7–10.

Rinehart, P. E. (2005). (12) *United States Patent. 1*(12).

Silva, L. J. de V. B. da, Santos, I. F. S. dos, Mensah, J. H. R., Gonçalves, A. T. T., & Barros, R. M. (2020). Incineration of municipal solid waste in Brazil: An analysis of the economically viable energy potential. *Renewable Energy*, 149, 1386–1394. <https://doi.org/10.1016/j.renene.2019.10.134>

Trinh, V. T., Van, H. T., Pham, Q. H., Trinh, M. V., & Bui, H. M. (2020). Treatment of medical solid waste using an Air Flow controlled incinerator. *Polish Journal of Chemical Technology*, 22(1), 29–34. <https://doi.org/10.2478/pjct-2020-0005>

Yang, G. C. C., Chuang, T. N., & Huang, C. W. (2017). Achieving zero waste of municipal incinerator fly ash by melting in electric arc furnaces while steelmaking. *Waste Management*, 62, 160–168. <https://doi.org/10.1016/j.wasman.2017.02.021>

APPENDICES

HOMECEINERATOR

Dear respondents,

We are students of Bachelor of Science (Hons.) Computational Mathematics from Faculty of Computer and Mathematical Science in UiTM Seremban 3 Campus. We are currently conducting a project for Technology Entrepreneurship's (ENT600) subject, where we are responsible to create a marketable technology-based product. We proposed the invention of an induction incinerator, known as a Homeceinator. Hence, this survey is made to know the opinion and acceptance of our product towards the community.

Therefore, your involvement in completing this survey is valuable to our research. The information obtained will be kept private and only be used for this research. Your answers are our priority. We greatly appreciate your time.

Researchers:

Ayu Zawanis Zuraini Binti Mohd Zainun (2019720147)
Muhammad Nur Arif Bin Nekmat (2018402368)
Mohamad Izzudin Bin Mohammad Khairi (2018287478)
Mohamad Hafizat Bin Mohd Basri (2018441462)
Nuranatassia Izlyn Binti Hassan (2018207464)
Rafiqah Ezleen Binti Razali (2018440762)

For any inquiries

Email: arifnekm97@gmail.com

Phone number: 01128656969

HOME CINERATOR

* Required

Part 1: Respondent's profile

Gender *

- ☐ Male
- ☐ Female

What is your current marital status? *

- ☐ Single
- ☐ Married

Please choose your current employment status. *

Government sector

Please choose your current employment status. *

- ☐ Government sector
- ☐ Private sector
- ☐ Unemployment
- ☐ Student

Kindly state your monthly income *

- ☐ RM 1000 - RM 3000
- ☐ RM 3001 - RM 5000
- ☐ RM 5001 and above
- ☐ Other

Are you familiar with incinerator? *

- ☐ Yes

Are you familiar with incinerator? *

- ☐ Yes
- ☐ No
- ☐ Maybe

Are you an eco-friendly type of person? *

- ☐ Yes
- ☐ No
- ☐ Maybe

How do you dispose your wastage? *

- ☐ Burn
- ☐ Bury
- ☐ Throw in dustbin to be collected later by waste management people

If your waste product can be categorized, what type of waste product that you always burn? (You can choose more than one) *

☐ Papers

☐ Plastics

☐ Dry Leaves

☐ Other: _____

8. How often u burn your waste? *

☐ Never

☐ 1-5 times a month

☐ 6-10 times a month

☐ More than 10 times a month

8. How often u burn your waste? *

- ☐ Never
- ☐ 1-5 times a month
- ☐ 6-10 times a month
- ☐ More than 10 times a month

Would you like to buy any household appliances that can help you in you in burning your waste? *

- ☐ Yes
- ☐ No

Part 2: Product Description

Our product: HOMECINERATOR

Homecinerator is a household appliance that can burn waste by using induction. This product is made to control the daily garbage disposal which leads to the garbage pile problems. Our product is eco friendly to help reduce environmental pollution by separating the pollutant that has been emitted by the incinerator through the filter and the product using an energy saver device. Power saver stores the electricity inside of it using a system of capacitors and they release it more smoothly to normal without the spikes. The systems also automatically remove carbon from the circuit which also encourages a smoother electrical flow.

This is the preview of our product.



Do you think our product is useful?

☐ Yes

☐ No

Are you interested to buy our Homecinerator? *

☐ Yes

☐ No

How many stars would you rate our product? *

☐ ★

☐ ★★

☐ ★★★

☐ ★★★★

☐ ★★★★★

If our product is available on the market, what is your expectation on the range of the price for the Homecinerator would be? *

☐ RM 1000 - RM 1490

☐ RM 1500 - RM 2000

☐ RM 2001- RM 2500

☐ Other: _____

Which platform do you prefer to buy this product?(You can choose more than one) *

☐ Our website

☐ Shopping mall

☐ Electronics shop

☐ Online retailer (such as Lazada, Shopee)

☐ Other: _____

Do you think our product can help you in your daily life? *

☐ Yes

☐ No

Would you recommend this product to other future buyers? *

☐ Yes

☐ No

HOME CINERATOR

Suggestion

For future references, we are open to any enhancements and improvements for our product. (if you have any)

Any suggestion for product improvement.

Your answer

 UNIVERSITI TEKNOLOGI MARA	FACULTY OF BUSINESS AND MANAGEMENT ASSIGNMENT/ PROJECT DECLARATION FORM
--	--

Student's Name : MUHAMMAD NUR ARIF BIN NEKMAT

Student's ID : 2018402368 Student's I/C No. : 970221065877

Program Code : CS247 Part : 6 Course Code : ENT600

Course Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/ Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/ Project Title : HOMECINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:

- i. is a result of my own work;
- ii. has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- iii. does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- iv. mentions explicitly all sources of information in the reference list; and
- v. will go through similarity check (Turnitin).

I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

23.12.2020

Date



Student's Signature



FACULTY OF BUSINESS AND MANAGEMENT
ASSIGNMENT/ PROJECT DECLARATION FORM

Student's Name : MUHAMMAD IZZUDDIN BIN MOHD KHAIRI

Student's ID : 2018287478 Student's I/C No. : 970529055077

Program Code : CS247 Part : 6 Course Code : ENT600

Course Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/ Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/ Project Title : HOMECINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:


- is a result of my own work;
- has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- mentions explicitly all sources of information in the reference list; and
- will go through similarity check (Turnitin).

I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

23.12.2020

Date

Student's Signature

 UNIVERSITI TEKNOLOGI MARA	FACULTY OF BUSINESS AND MANAGEMENT ASSIGNMENT/ PROJECT DECLARATION FORM
--	--

Student's Name : MOHAMAD HAFIZAT BIN MOHD BASRI

Student's ID : 2018441462 Student's I/C No. : 971024065127

Program Code : CS247 Part : 6 Course Code : ENT600

Course Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/ Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/ Project Title : HOME CINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:

- i. is a result of my own work;
- ii. has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- iii. does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- iv. mentions explicitly all sources of information in the reference list; and
- v. will go through similarity check (Turnitin).


I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

23.12.2020

Date



Student's Signature

 <p>UNIVERSITI TEKNOLOGI MARA</p>	<p>FACULTY OF BUSINESS AND MANAGEMENT ASSIGNMENT/ PROJECT DECLARATION FORM</p>
--	--

Student's Name : RAFIQAH EZLEEN BINTI RAZALI

Student's ID : 2018440762 Student's I/C No. : 970515106312

Program Code : CS247 Part : 6 Course Code : ENT600

Course :
Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/
Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/
Project Title : HOME CINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:

- i. is a result of my own work;
- ii. has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- iii. does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- iv. mentions explicitly all sources of information in the reference list; and
- v. will go through similarity check (Turnitin).

I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

24.12.2020

Date


Student's Signature



FACULTY OF BUSINESS AND MANAGEMENT
ASSIGNMENT/ PROJECT DECLARATION FORM

Student's Name : NURANATASSIA IZLYN BINTI HASSAN

Student's ID : 2018207464 Student's I/C No. : 970216145282

Program Code : CS247 Part : 6 Course Code : ENT600

Course Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/ Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/ Project Title : HOMECINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:

- is a result of my own work;
- has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- mentions explicitly all sources of information in the reference list; and
- will go through similarity check (Turnitin).

I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

24.12.2020

Date

Student's Signature



FACULTY OF BUSINESS AND MANAGEMENT
ASSIGNMENT/ PROJECT DECLARATION FORM

Student's Name : AYU ZAWANIS ZURAINI BINTI MOHD ZAINUN

Student's ID : 2019720147 Student's I/C No. : 980627065374

Program Code : CS247 Part : 5 Course Code : ENT600

Course Name : TECHNOLOGY ENTREPRENEURSHIP

Assignment/ Project No. : NPD Due Date : 24.12.2020 Submission Date : 24.12.2020

Assignment/ Project Title : HOMECINERATOR

Lecturer's Name : MADAM NORHANIZA BT MAT AKHIR

I hereby declare that the work in this assignment/ project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This assignment/ project has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I acknowledge that I have been supplied with the Academic Rules and Regulations for Universiti Teknologi MARA's Diploma/ Bachelor Degree/ Master's Degree students, regulating the conduct of my study and exams.

I hereby declare that this assignment/ project is written by me and:

- is a result of my own work;
- has not been used for another assessment at another department/ university/ university college in Malaysia or another country;
- does not refer to/quote works of others or own previous writings without stating it both in the text and in the reference list;
- mentions explicitly all sources of information in the reference list; and
- will go through similarity check (Turnitin).

I am aware that disciplinary action (which may include the deduction of marks in the assignment/ project) **will be taken against me if I am found to be an offender.**

23.12.2020

Date

Student's Signature