## Microgreens - Magigreens

Small Plants

Big Plans



### **Business Report**





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President of Athens Chamber of Commerce&

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Distribution Business Manager at HP

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School year 2021-22

Greece

### **Executive Summary**



#### **Problem-Solution**

With the countless liabilities, the fast pace of life and the overconsumption of fast food, the <u>problem</u> of <u>unhealthy eating</u> has taken on enormous proportions and <u>our answer</u> to this issue is <u>plants in small size</u>.

With up to 40 times more nutrients than fully grown vegetables, microgreens are seen as **health bombs**.

Our company has managed to make these cropsensitive and unaffordable superfoods easily accessible to the average consumer by creating **Microwonders**, a fully-automated growing climate chamber for their domestic cultivation.

Until now, microgreens were only sold to high end chefs, showing up to add dazzling color and a punch of bright flavor to dishes. However, now, the general public is moving towards a healthier lifestyle making the nutritional aspect of microgreens popular among consumers.

We are here to bring microgreens to people who are health conscious, strongly involved in natural and organic stuff, demanding great taste and want to cultivate a green thumb. We are here for those who need natural health supplements and for those who want to become a top chef in their own kitchen as Microgreens- Magicgreens helps you "grow the magic in your kitchen" and create...microwonders!

#### **Product**



Our product is a fully automated climate chamber for easy and quick production of microgreens. Microwonders combines high quality, reliability, affordability and great social and environmental value.

For its construction, old PC towers to be withdrawn were used, promoting upcycling and the circular economy principles.

### What makes Microwonders unbeatable?

- The ability to cultivate **all sorts of of microgreenery** which is the latest trend in contemporary gastronomy.
- The ideal conditions of cultivation which are achieved through an automated system controlled in the Cloud via Internet of Things. This condition allows the user to have direct access to data 24/7.
- The innovative use of the VPD index prevents the growth of mold which is the biggest enemy of microgreens.
- The faster crop harvest, ideal for professional chefs, proven by a joint experiment with the Aristotle Univ. of Thessaloniki, comparing harvest time, leaf area and other quality elements of microgreens, grown in conventional greenhouse conditions, and in the prototype "Microwonders" chamber.

### Vision

The company's <u>vision</u> is to fill the gap that exists between traditional agriculture and Digital Farming.

At the same time, we envision being part of the solution to global problems:

Reduction of by adopting and applying the principles of the circular economy

Reduction of the food crisis by increasing urban farming (domestic cultivation)

Improving the by consuming fresh and tasty well-being by microgreens

### **Prospects**

Microgreens- Magicgreens is currently a virtual company that has the potentials and dynamics to transform an original idea into a successful business in a reasonable period of time.

The gradually increasing promotion of Microwonders along with our satisfied customers has lead to **the 6 sales** of our innovative product to households and professionals at the price of **280€** and to another **13 orders** (from Greece, Germany and the UK) upon which we are working at the moment. This means that we are already above the sales forecasts (6<sup>th</sup> month of the 1<sup>st</sup> FY).

Our business establishment in the International Market will be greatly enhanced by our participation in the **International Cooking Competition of Southern Europe** with the support of World Assoc. of Chefs Societies (WACS) (already approved).

### **Business Environment**

microwonders

Support to UN sustainable development goals









#### **Unhealthy eating and COVID-19**

Early studies from a number of countries in the World Health Organization (WHO) European Region indicate that the prevalence of overweight and obesity and/or high body mass index has increased in children and adolescents during the COVID-19 pandemic, a major risk factor for noncommunicable diseases in addition to the pandemic of COVID-19 itself which is highly contagious.

### Healthy dieting

Microgreens may not have direct effect on curbing the COVID-19 virus but these could help indirectly by protecting the major organs due to their antioxidant potential and strengthen one's immune system and develop a first line defence system against the virus.

Microgreens can help boost immunity as they contain up to **40 times more nutrients** than their mature counterparts. They can provide very high nutrients in very small quantity.

The vitality of microgreens can also be proven by the fact that **NASA suggests microgreens** as an ideal food for the long journeys of astronauts.

Our business will make healthy eating more attractive and interesting by growing microgreens. As the COVID-19 pandemic has changed people's attitudes about their food shopping habits, we suggest do-it-yourself microgreens as the most appropriate, sustainable alternative.

### Global urban population boom

By 2050 the world population is predicted to have reached 9.8 billion people, thus, there is a huge and growing demand for a more sustainable, accessible, and nutritious food supply. At the same time, the production of agricultural products aimed to feed this population is being challenged as it is expected to be insufficient due to:

- 1. Climate change
- 2. The reduction of available water resources
- 3. The increasing loss of agricultural land and
- 4. Migration from rural to urban areas
- 5. War in Ukraine —a major "breadbasket" for the world-

#### **Domestic Cultivation**

The solution to increased production is to increase the crop yields and the agricultural area without further reducing the existing agricultural land, ie **cultivation in an urban environment**.

"Microwonders" comply with these requirements, as indoor cultivation is carried out and complete control of production is achieved without harvest losses.

Furthuremore, starting a miniature indoor garden is an excellent way to develop and **cultivate a green thumb!** 

### Unrecycled e-waste

E-waste is the fastest growing waste stream within the European Union borders. Less than 40% of it, is being recycled, while in our country the data show even lower rates of about 33%.

The consequences of improper ewaste disposal pose serious threats to current public health and can pollute ecosystems for generations to come, as toxic chemicals are released, impacting the earth's air, soil, water and ultimately, human health.



# make unner

### Circular Economy

In February 2010, the European Parliament approved the action plan for the **circular economy**, calling for additional measures to achieve a carbon-neutral, environmentally sustainable, non-toxic circular economy by 2050.

Our company **implements circular economy** principles for the production of our chambers that come from **old computer towers to be withdrawn**. These PC towers are reused along with some of their remaining parts i.e. the power supply, coolers etc. after having been evaluated.

### Product

a fully automated climate chamber for cultivating and growing microgreens

Health-conscious individuals have been including microgreens in their diet because of its potential to fill in the nutrition gap, and its risk-reduction disease ability. Now, because of the ongoing pandemic, the rest of the world is also opening up to these little nature miracles.

Microgreens have been a staple of the culinary world for the last decade, showing up to add dazzling color and a punch of bright flavor to dishes.

"Every chef feels confident when he/she has fresh and high quality raw materials grown in his/her own kitchen"

Ef. Vamvakidou-Chef & owner of the "Tratamento" restaurant



"Producing your own superfood means tracing it from production to consumption, thus maintaining **food safety** at all stages food passes through"

G. Floros-Agronomist AUTH university Prof.

"I know what I put on my plate!" Oly (Vegan, teacher)

Affordable price and fast depreciation for the average consumer the compared to expensive food that it produces.

"I chose Microwonders because as a chef at the end of the day I need a a total revenue with a positive sign!"

Th. Kliropoulos- Chef at STOA restaurant

"We create memories! Even a child can cultivate its own superfood and love the process!"

Maria (mother of 13 kids)

Even if you've never tried growing vegetables before, can succeed with you Microwonders. Easy to install and operate without requiring specialized knowledge from the user, with small volume, adjustable to the consumer needs.

Ideal for Eco- conscious consumers.

A product with low ecological footprint which coincides with the principles of the circular by economy using computer units to be withdrawn. In addition, it reduces water use. The fully automated system irrigates when and if needed, thus reducing water consumption by up to 80%.

#### **SUPERFOOD**

"You produce your own super food. Ideal for athletes who need nutritional natural supplements and for caring those children or people with sensitive health "



V. Tsakalian- dietitian nutritionist

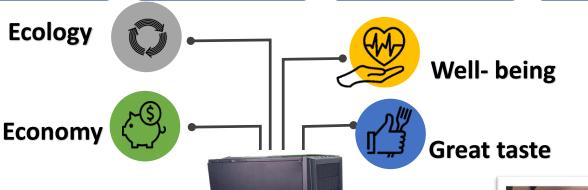
### **GOURMET CUISINE**

**TRACEABILITY** 

**AFFORDABILITY** 

VERY EASY TO USE

**ECO- FRIENDLY** 



cooking extended horizons at home! " Panos (Cooking enthusiast)



### Production

The chambers are designed with excellent know-how. The ultimate goal of the production department is to transform an "electronic garbage" into a hi-tech fully automated microgreens growing climate chamber, accessible to any user who respects the environment, contributing to food choices that excel in terms of nutritional value and taste.





Installation of internal lining for thermal insulation and reflection of grow lights



3D Printing and placement of necessary components



Final Finishing



3

Installation of grow lights/ sensors/ actuators/ microprocessor



Wiring and
Operation Control
Data Visualization

Wifi

ACTIVATORS

Below
Led
Fan Grow Light Water Projector Tump Maker (90ml/h)

Decision Control

SENSORS

Data

Product
USER

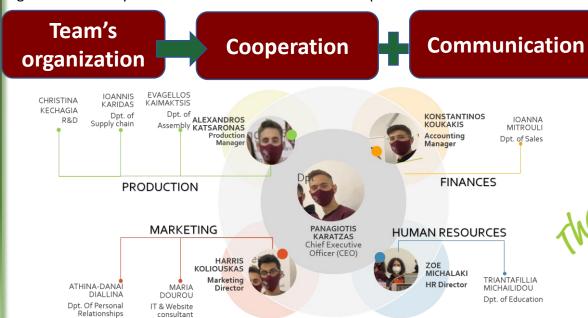
### Management

HIRING→ 12 students of the Microgreens-Magicgreens group of the 2<sup>nd</sup> Experimental High School of Kilkis, joined their forces and created the "Microwonders" climate chamber. The selection of the company employees was done after conducting **interviews** and **follow-up evaluation** of candidates while the directors of the departments and general manager were appointed **by voting**. The initial organizational chart that has been prepared, foresees the employment of 12 employees. In addition, one external Program Developer was employed so as to develop a program for the microprocessor.

**DEPARTMENTS** For the optimal operation of the team, the company was divided **into four divisions.** 

**PAYROLL**→ All employees are being paid on **the basic salary** (in Greece) until the company becomes viable.

**DECISION-** MAKING The decision-making process of the company is a matter of a general assembly with these 13 members to have complete control.



### The minds behind the **idea** and the soul behind the **vision**.



For the **development** and **improvement** of the members of the company we attended the webinars and seminars of JA. Our team members also attended the European project Girls Go Circular, which aims to equip people with digital and business skills for the circular economy.

At the same time, we were consulted and trained by **experts**. Some of them are:



Dr G. Floros,
Agronomist AUTH
Univ., for the VPD
index and
evaluation of the
quality
characteristics of

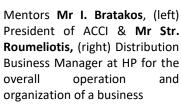
our crop



Mrs V. Tsakalian, dietitian nutritionist for the information on the nutritional value of microgreens



Mr N. Stathopoulos, owner of "Mikros Kalliergitis" for the instructions for growing microgreens.



ACCI: Athens Chamber of Commerce& Industry



**Dr P. Chatzimisios**, Prof. at the Dpt of Computer and Electronic Systems Engineering of the International University of Greece for the information on the use of the Internet of Things



### **Promotion**











### i. Direct Contact (e-mail, tel, on-site sampling)





We promote our product via **e-mails** and **phone calls** in order to make appointments for **on-site free sampling** in restaurants such as Tratamento and Trypokarydos in Kilkis and hotels as Electra Palace and **adults' schools**.We also introduced the Metropolitan Bishop of Kilkis Mr. Bartholomeos to our chamber. Technology in our team's laboratory. Our **augmented reality brochure** material is also distributed to potential customers. The brochure "comes to life" and displays the instructions of use of the chamber as well as recipes for microgreens. Furthermore, promotional actions took place **at school** on Valentine's Day (14/2/22).

### iii. Strong Digital Presence (web site, social media, digital marketing, content marketing)

The **website** (microwonderskilkis.weeblysite.com/) was created exclusively by the executives of our company. The **web marketing** techniques aim to awake the visitor's interest in our products, to show the ease of information retrieval and to present our competitive advantages. In our website, one can find recipes using microgreens.

Taking advantage of the technology and its capabilities, we used **digital marketing tools** to convey our values and aspirations to the public and to reach customers at zero cost. Specifically, we have created **Facebook** and **Instagram** accounts and we make sure they are constantly updated with information about our actions, to promote our brand and to promote the content of our website.

Furthermore, we used **Content Marketing**, mainly through our business video which proved to be very effective as it ensured us the first place in the competition for the best promo video of a student virtual business with over 1000 votes. Finally, in December '21 we created and released a Christmas greeting video to attract our audience's attention.

### ii. Presentations (TV, radio stations, newspapers, magazines)

As a team, in order to further inform the public, we gave **interviews to TV channels** (ERT3 - Perimeter and O3 shows-, **news bulletin** of the EMU channel, TV100- 100% Breakfast show) as well as to **radio station programs** (Ok web radio). In addition, **many articles** were written about our virtual business in **newspapers** (Ypaithros Chora (18/3/2022), in the **magazine "Anaptixi"** (distributred to more than 100.000 businesses in Greece, February 2022) and on **news websites** (such as APE BPE) that were republished on dozens of other sites in Greece and abroad. Most importantly, on 3<sup>rd</sup> of April, 2022, we approached our potential costumers by displaying our products at the Region of Central Macedonia kiosk **at the Detrop Boutique, Food and Beverage exhibition 2022.** 

News Policy Economy Helias World Style Focus Journey Sport Tech Cars 2022 Video Newspapers

#### environment

Students from Kilkis win an award by growing small vegetables in computer boxes



The student virtual company "Microgreens - Magicgreens" from the 2nd Experimental High School of Kilkis emerged victorious, getting the "golden" ticket and the direct qualification to this year's pan-Hellenic final of the program, which will take place on May 8









### Marketing

### Target groups

As the **culinary industry** continues to adapt its menus to more intricate flavors and complex plate designs, the demand for products like microgreens increases, for garnishing and enhancing the presentation of the dishes.

Along with restaurants, the general public is moving towards a healthier lifestyle making the nutritional aspect of microgreens popular among consumers.

#### **Businesses**

- Fine dining restaurants (e.g. Golden Hats or Michelin stars)
- Hotel Businesses with restaurants
- Private Health Clinics
- Nursing Homes for the Elderly
- Gyms with healthy snacks

#### Sales channels

Customers will be able to order their chambers from our e-shop which will be ready 2 years after the start of our business. Until that time, we accept orders by telephone or e-mail or after visiting our lab. At the moment, our products are being procured from our lab. However, due to the orders placed from distant places or abroad, are working towards building a competitive logistics system.

#### Consumers

- Households with young children/ teenagers elderly/Pregnant women/ people suffering from health problems
- Vegetarian/ Vegan / Omophagy followers
- **Athletes**

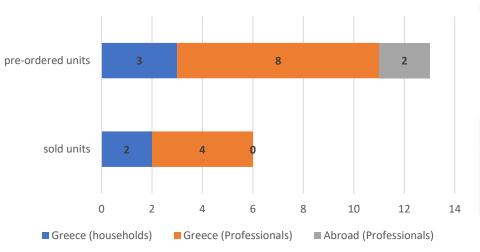
# STOA







#### Microwonders sales until June '22



### Sales

#### **Domestic Market**

Up till now we have sold 6 Microwonders chambers in Greece (2 chambers to households and 4 to Professionals- 3 restaurants and 1 gym) and we have another 11 orders for domestic market.

### International Market



We are already working on our 2 orders from abroad (Tuebingen, Germany & London, UK). Our presence in the International Market will be greatly enhanced by our already approved participation in the International Cooking Competition of Southern Europe, which will take place at the International Exhibition Center of Thessaloniki, Greece, with the support of **WACS**.



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Table	Table 1					
	Sales Forecast P& L Statement	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Α	UNITS	50	100	160	240	360
В	Gross Sales (B= A* a)	14.000	28.000	44.800	67.200	100.800
С	Gross Sales Reduction (C=-0.10*B)	0	-280	-448	-672	-1008
D	Net Sales (D= B-C)	14.000	27.720	44.352	66.528	99.792
Ε	Cost of Production E=-(A*b)	-9.000	-18.000	-28.800	-43.200	-64.800
G	Gross Profit (G=D-E)	5.000	9.720	15.552	23.328	34.992
	OPERATING EXPENSES					
h1	Payroll	-124.800	-124.800	-124.800	-124.800	-124.800
h2	Utility bills	-5.360	-5.360	-5.360	-5.360	-5.360
h3	Promotion- Marketing <sup>3</sup>	-3.200	-6.400	-6.720	-10.080	-15.120
h4	Software - R&D <sup>4</sup>	-5.000	-1.000	-1.000	-1.000	-1.000
-	TOTAL Expenses (I=h1+h2+h3+h4)	-138.360	-137.560	-137.880	-141.240	-146.280
	OTHER SUNDRY INCOME					
H1	Employees Sponsorships <sup>1</sup>	124.800	124.800	124.800	124.800	124.800
H2	School Sponsorships <sup>2</sup>	5.360	5.360			
Н3	Donations	3.000				
H4	Share Capital	200				
Н	Total Gross Profit					
	(H=H1+H2+H3+H4+G)	138.360	139.880	140.352	148.128	159.792
J	EBT (J=H-I)	0	2.320	7.832	12.248	18.872
K	PROFIT MARGIN (K=J/D)	0,0%	8,4%	17,7%	18,4%	18,9%

1. Theoretical calculation of payroll - voluntary work (resignation)-
13 employees*number of months*800€/month

- 2. Theoretical calculation of fixed costs—covered by the 2nd Experimental High School (full coverage)

  Utility Bills (electricity, heating & water supply): 5,000 €/year, Internet: 30 €/month
- 3. 1st year: equivalent to the Donation-sale of shares/ 2nd year: doubled to meet double demand/ 3rd year on: 15% of sales
- 4. 1st year: Creation of software and cloud/ 2nd year: maintenance / upgrade.

Table 2 Table 3			
	Profit Loss Account	3/6/2022	Balance
Α	UNITS	19	
В	Gross Sales (B= A* a)	5.320	Stock
С	Gross Sales Reduction (C=-0.10*B)	0	Debtors
D	Net Sales (D= B-C)	5.320	Cash at I
E	Cost of Production E=-(A*b)	-3420	Cash in h
G	Gross Profit (G=D-E)	1.900	TOTAL C
	OPERATING EXPENSES		
h1	Payroll	-62.400	Bank ov
h2	Utility bills	-2.680	Loans
h3	Promotion- Marketing <sup>3</sup>	-1.600	Creditor
h4	Software - R&D <sup>4</sup>	-5.000	Corpora
1	TOTAL Expenses I=h1+h2+h3+h4	-71.680	VAT due
	OTHER SUNDRY INCO		TOTAL C
Н1	Employees Sponsorships <sup>1</sup>	62.400	(
H2	School Sponsorships <sup>2</sup>	2.680	Issued s
Н3	Donations	3.000	Donatio
Н4	Share Capital	200	Balanc
H5	Prize Money	1500	
Н	Total Gross Profit		
	(H=H1+H2+H3+H4+H5+G)	71.680	

Balance Sheet	3/6/2022	
(A) assets		
Stock	1.400	
Debtors	0	
Cash at Bank	0	
Cash in hand	1.800	
TOTAL CURRENT ASSETS	3.200	
(B) Liabilities		
Bank overdraft	0	
Loans	0	
Creditors	0	
Corporation tax payable	0	
VAT due	0	
TOTAL CURRENT LIABILITIES	0	
(C) Share holders Equity		
Issued share capital:	200	
Donations (P&L impact)	3.000	
Balance (A-B-C)	0	

J	EBT(J=H-I)	0
K	Tax	0
	Profit/Loss after tax	0

а	Price/unit	280€
b	Production cost/unit	180€

### **Finances**

### Competition

The main advantage of our business is that we enter a market without direct competition. There is no similar product in Greece. Our competitors are foreign companies with grow boxes, which, however, have only some of the characteristics of our chamber, but not a combination of them all while none of them contributes to the protection of the environment by using the circular economy principles as is the case with the "Microwonders" chamber.

**Competitive Products** 



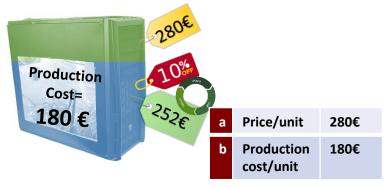
#### Calculation of Price

The price was determined after a relevant market research, conducted by the finance and marketing department of our business, on our indirect competitors and it results from the apportionment of the cost of production of the product for the whole year.

### **Profitability**

Microgreens-Magicgreens revenue derives from the 16 one-off payment received by the purchase of the Microwonders chamber. The total annual income comes from the number of units sold, at the price of 280€/unit, when the fixed Production Cost is 180€/unit (in the long run this cost is expected to decrease with larger supplies of materials).

We anticipate that by the 2<sup>nd</sup> FY, 1 in 10 of our customers will make use of the 10% discount by converting their own computer units into a Microwonders chamber, thus contributing to the protection of the environment.



Considering that most of the expenses of our company are fixed, their annual amount can be seen in the Income Statement (Table 1). We expect that the coverage of utility expenses will carry on by the school in the 2<sup>nd</sup> year of operation, therefore the 5-year sales forecast calculates a profit by the 2<sup>nd</sup> year of operation of Microgreens-Magicgreens, as long as the employee salaries continue to be covered by the voluntary work of the members.

Graph 1: First 6 months of operation



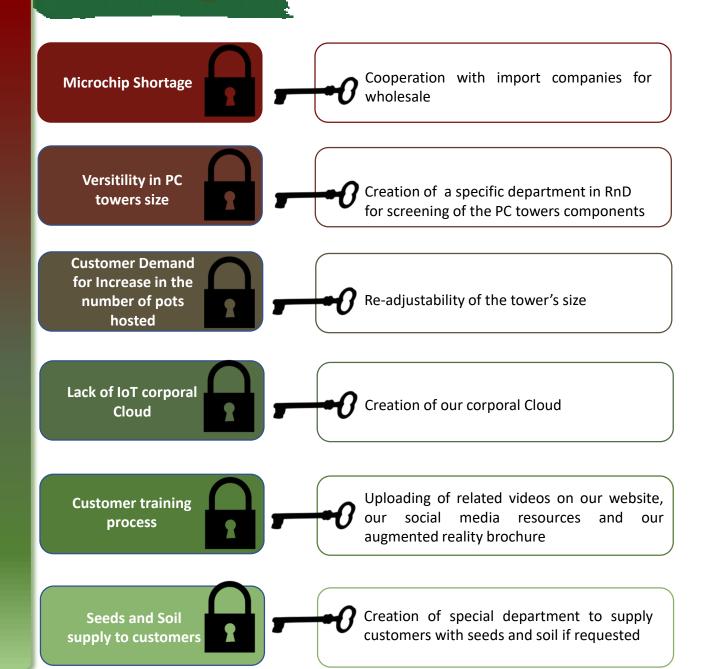
In this case, we estimated that the break even point would be achieved by the end of the 1st year of operation, with the sale of 50 units at the price of 280€. However, in practice, the break even point is reached earlier, by the 6<sup>th</sup> month of operation, as the sales overcame the predictions (19 instead of 15) and also we won the JA Greece prize of 1.500€ (Table 2).

Furthermore, after the 2<sup>nd</sup> year of operation we expect to be viable and operate as real entrepreneurs. Therefore, we intend to stop accepting donations and sponsorships since there will be no need for those (Table 1)

Our participation in the International Cooking Competition of Southern Europe, with the support of WACS and the Hellenic Ministry of Tourism which attracts between 500 and 600 delegates from all over the world, is a unique opportunity to showcase Microwonders chamber, to capture the interest of the international culinary community and successfully expand to the international market as was the case with our presence in the Detrop Boutique, Food and Beverage expedition (3/4/22)(Graph 1)

### Challenges

### <u>Future Plans</u>

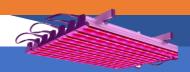




Use of the tower for **alternative types of cultivation** e.g. edible flowers

Notification of customers through applications





Make the system fully intelligent

(use of special grow light for microgreens and increase the controllability of the system by adjusting the **light** and **temperature** in the chamber)





# Microgreens – Magigreens





