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*Faculty of Economics and Management*

*Business Administration (MBA)*

Master's Dissertation



Develop a Marketing Plan for Nedeco Electronics Ltd - Cockpit a Smart Home Solution

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Master Thesis

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## Summary

The thesis scope is to develop a marketing plan for Cockpit wireless home automation that intends to enter the Cyprus market. Home automation system allow users to control their home electrical appliances remotely with the use of a software application. Smart home software application features are still growing by using the internet of things technology.

The company is providing telecommunication services within Cyprus market using the latest technology achievements. Nedeco Electronics Ltd used to work with B2B customers and marketing plan does not really exist for B2C. Social media and digital marketing, changes the way companies are selling their products.

Quantitative data were used for this thesis analysing consumers needs and the Cypriot market. Furthermore, survey questionnaires from 44 responders were used in order to collect quantitative data. Based on these findings a marketing plan was created. The marketing plan provided will help the company to increase its awareness regarding the consumer market. Increasing company visibility will also help for promoting and reaching the targeted audience.

The thesis consists of the theoretical part which gives an overview of the existing market wireless home automation technology solutions. Also, a comparison of ZigBee, Wi-Fi, Bluetooth, Z-Wave and EnOcean smart home communication technologies is presented, taking into consideration that low power consumption and energy saving is a mandatory feature for smart home systems.

Further to the theoretical part, an analysis of the Cypriot market is shown. An overview of the company is presented in marketing mix, 4P, PESTEL and SWOT analysis. Cypriot market is not educated enough about the benefits of smart home solution. A marketing plan for Nedeco Electronics Ltd about Cockpit wireless home automation system is proposed for one year which is based on the findings of this research. The data collected from survey questionnaires as well as from the literature review showed that wireless home automation solution is a promising product and service solution that can increase sales and company profits.

Nedeco Electronics Ltd must be very careful in its current marketing actions in order to efficiently optimise the necessary businesses operation activities.

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# Chapter 1

## Introduction

This research seeks to prepare a marketing plan for Cockpit wireless home automation system. A structured analysis of both internal and external environment will be performed which will lead to SWOT analysis in order to set the ideal objectives, which will then be implemented using the appropriate strategies and tactics.

Home automation systems are used in residential and commercial buildings in order to automate day to day human activities and processes. Automation systems can be controlled manually or automatically through a software system. Software systems can be scheduled and/or preprogrammed in order to perform various actions. Some of them are for example automatically turning on the air conditioning, dimming lights, switch off or on the lights, control the water-heater temperature, managing the building/house entrance doors, cameras, gates and any other smart appliances which may exist in a house or building. All this actions and much more can be also be conducted by the owner remotely via his mobile phone, tablet and/or computer.

There are various popular home automation technologies in the market. The history of home automation goes back in 1966<sup>1</sup> when Jim Sutherland invented electronic computing home operator (ECHO). ECHO allowed users to control their home's temperature and power appliances. In late 1970 X10<sup>2</sup> was developed by Pico Electronics allowing users to control lights and small appliances. In early<sup>3</sup>1980's National Research Centre of the National Association of Home Builders (NAHB) developed sensors controlling various mechanisms like thermostats, ventilation, lighting, and other services. The first device which connected to the network was invented in 1990 by John Romkley<sup>4</sup>. He created a toaster that featured network (internet) connectivity and could be automatically turned off and on.

The Internet of Things (IoT) is a technology that allows a sensor/device to connect interact and exchange data over the internet. These days, technology achievements and innovation led to more sophisticated home automation systems. In the past, home automation systems were mostly installed in luxury houses and buildings mainly due to the high cost of materials, installation and maintenance.

Nowadays, home automation technology is becoming cheaper and easier to install. Due to the automation technology home devices and appliances are integrated increasing in that way the owner's everyday life comfort and convenience. A competitive advantage of the new home automation systems, compared to the older ones, is the ability to be personalised by the user. People can now connect to their smart homes at any time, any place using their mobile phones, or tablets and controlling their houses, saving time and enjoying higher quality of life.

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<sup>1</sup> <https://computerhistory.org/blog/the-echo-iv-home-computer-50-years-later>

<sup>2</sup> <https://www.x10.com/about-us/>

<sup>3</sup> <https://depts.washington.edu/dmgftp/publications/html/smarthouse98-mdg.html>

<sup>4</sup> <https://medium.com/mqtt-buddy/brief-history-of-the-internet-of-things-f00043ae17b5>



## Chapter 2

### Literature Review

The home automation concept goes back to the late 1970s as already stated above. The IoT technology enhancement increases people expectations about converting their traditional house into a smart home. End users are looking to manage their houses remotely in a convenient and safe way. Moreover, the world population is growing as the average life expectancy is increasing and the energy demands are also increasing. Energy generation requires fuel/oil. Generated emissions during the process are harmful to the environment.

Electrical energy generation and consumption can be more efficient by using information and communication technologies, Iyer and Agrawal (2010). Residential sector consumes about 25% of global energy which is responsible for the 17% of global CO<sub>2</sub> emissions<sup>5</sup> Pablo-Romero et al (2017). The target is to reduce electrical energy demand at peak periods and increase the electrical energy demand during off peak hours. Achieving equivalent energy consumption during the day and night will reduce the cost of energy generation and consequently residential monthly electricity bills. In that way the environment, pollution will considerably decrease.

Technology can help in that part by switching on electrical appliances in a smart house at a predefined day and hour instead of leaving the electrical appliances switched on during the whole day. Smart homeowners can now schedule the electrical energy consumption activities like swimming pool water pump, washing machines, gardening, central heating, air-cooling and lighting. Even though some researchers indicated that, there is a little evidence that smart home technology can save energy Hargreaves et al (2013)<sup>6</sup>. Users may consume more energy as they have the option to switch on the heater or air-conditioning before arriving at their houses.

Combination of software application integrated with smart devices, smart sensors, and data collection by using wireless communication create huge potentials for new software features and applications. This is known as the IoT – Internet of Things Technology. According to Gubbi et al. (2013)<sup>7</sup>, “Internet of Things (IoT) is the interconnection of sensing and actuating devices providing the ability to share information across platforms through a unified framework, developing a common operating picture for enabling innovative applications”. Various wireless smart devices and sensors can send their data/status/information to the cloud through a gateway or smart hub.

There are existing well established traditional home automation systems that are based on wire connection/communication. Traditional smart home automation systems require wires and advance electrical design during the building development. Traditional home automation systems cannot be installed in existing houses. Nevertheless, wireless systems have a lower cost compared to the traditional home automation. Customers have a lot of different choices regarding smart home wireless automation system.

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<sup>5</sup> Pablo-Romero, M. del P, Pozo-Barajas, R., Yniguez, R., (2017), Global changes in residential energy consumption. Energy Policy, Volume 101, page 342-352

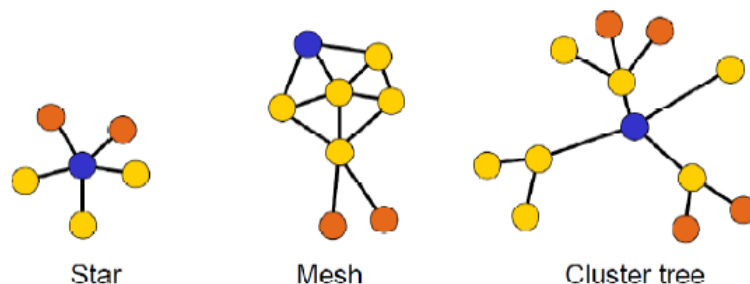
<sup>6</sup> Hargreaves, T., Nye, M., Burgess, J., (2013), Keeping energy visible? Exploring how householders interact with feedback from smart energy monitors in the longer term, Energy Policy, Volume 52, page126-134

<sup>7</sup> Gubbi, J., Marusic, S., Rao, S. A., Law, W. Y., and Palaniswami, M., (2013), A pilot study of urban noise monitoring architecture using wireless sensor networks, International Conference on Advances in Computing, Communications and Informatics

Some of the popular existing wireless technologies in the market for wireless home automation systems, are ZigBee<sup>8</sup>, Z-Wave<sup>9</sup>, Insteon<sup>10</sup>, EnOcean<sup>11</sup> and Wi-Fi.

Wireless smart home automation systems are using a gateway/hub/controller. The term hub or gateway and or controller can mean anything from ZigBee, Z-Wave to Wi-Fi etc. The gateway is the brain of the smart home system. Smart devices are connected/registered with the controller. The controller/hub can perform preprogrammed scheduled actions that are saved in the hardware and/or the cloud. Users can interfere through the gateway software/mobile application in order to control electrical devices in their homes.

ZigBee is a product of ZigBee alliance. Alliance is an association of companies working together on this open global standard. ZigBee is a wireless networking technology that is built on top of the IEEE 802.15.4 low data rate wireless standard by providing a simple networking layer. The operating frequency is 868 MHz with data rate of 20kb/s. The ZigBee solution uses a central controller that communicates with the smart devices. Sensors batteries can last up to years. Network topologies below supported by the IEEE 802.15.4 and ZigBee specifications. The physical network topology is a geometrical shape resulting from the physical wireless routes to gateway/controller. ZigBee devices can receive and retransmit data up to thirty hops in mesh topology.



**Figure 1: Possible Network Topology**

Z-Wave is the most widely used technology for home automation systems. Z-Wave is a wireless protocol developed by Zensys<sup>12</sup> and is promoted by a group of growing companies Z-Wave Alliance. The operating frequency is 868 MHz in Europe with data rate of 40kb/s and the signal range is about 30 meters. The Z-Wave solution defines two types of devices controllers and slaves. The Z-Wave technology uses a central controller that communicates with the smart devices. Z-Wave smart modules can receive, transmit and act as a repeater up to four different hops/devices. Controllers send and receive commands through controllers and slave devices. Smart devices build a mesh network topology automatically between them. Furthermore Z-Wave smart lighting control modules operates with existing lighting fittings i.e. switches and lights. There is no need to replace lighting switches.

Insteon technology can communicate with SmartLabs powerline modem and with wireless bridge (Wi-Fi) P. Darbee, (2005)<sup>13</sup>. Insteon technology solution was developed by SmartLabs and is promoted by a group of growing companies Insteon Alliance.<sup>14</sup> Communication is achieved through a mesh network topology and consists of powerlines and wireless frequency links. The operating frequency is 904 MHz with data rate 38.4 kb/s and the signal range is about 45 meters. Insteon devices can receive, transmit and

<sup>8</sup> <https://zigbeealliance.org/solution/zigbee/>

<sup>9</sup> [https://z-wavealliance.org/about\\_z-wave\\_technology/](https://z-wavealliance.org/about_z-wave_technology/)

<sup>10</sup> <https://www.insteon.com/technology#ourtechnology>

<sup>11</sup> <https://www.enocean-alliance.org/about-us/>

<sup>12</sup> [https://z-wavealliance.org/z-wave\\_alliance\\_history/](https://z-wavealliance.org/z-wave_alliance_history/)

<sup>13</sup> Darbee, P., (2007), INSTEON Developer's Guide, 2<sup>nd</sup> edition

<sup>14</sup> <https://www.insteon.com/technology>

act as a repeater up to four different hops/devices. Insteon hub/controller is necessary for Insteon smart home automation systems.

EnOcean Alliance is one of the latest home automation technologies. EnOcean technology claims that wireless sensors and switches using EnOcean wireless standard, do not consume any energy and works without batteries. Its' sensors communicate wireless at 315 MHz and powered by kinetic energy, light or temperature differential. Communication is achieved directly between the sensors and they can be controlled through a room controller/gateway.

Wi-Fi technology operating frequency is 2.4GHz. Smart home solution can use Wi-Fi communication technology as well. There are a lot of smart Wi-Fi devices in the market. The Wi-Fi solution is not very famous as by adding too many devices on the same network creates network problems and slows down the whole network. In addition, the Wi-Fi technology usually consumes more energy<sup>15</sup> compared to other wireless technologies. The Wi-Fi wireless range can go up to 70 meters. The smart Wi-Fi devices can be used for controlling specific electrical appliances in a house i.e. water boiler and gardening, without a gateway/controller. Furthermore, Wi-Fi smart devices do not offer a complete smart home solution but smart home software solutions may include smart Wi-Fi device integration in their applications for competition purposes.

Bluetooth was not a popular wireless solution for smart home devices until recently as the mesh network topology was not supported. Bluetooth introduced mesh networking around 2017<sup>16</sup>. Bluetooth is a wireless technology standard that operates at 2.4 GHz. The Bluetooth name was taken by King Harald "Bluetooth"<sup>17</sup>. King Harald had a dead dark blue tooth and earned him the Bluetooth nickname.

	Z-Wave	ZigBee	Insteon	EnOcean	Bluetooth
<b>Release Year</b>	2001	2004	2005	2008	2017
<b>Protocol</b>	Proprietary	IEEE 82.15.4	Proprietary	Proprietary	Bluetooth
<b>Communication</b>	RF	RF	RF, Power Line	RF	UHF
<b>Encryption</b>	Yes (128 bit)	Yes (128 bit)	Yes	Yes	Yes (128 bit)
<b>Two Way Communication</b>	Yes	Yes	Yes	Yes	Yes
<b>Ease of Installation</b>	Easy	Medium	Easy	Medium	Easy
<b>Range (m) in Ideal Conditions</b>	30	10	45	30	10
<b>Power Consumption</b>	Low	Low	High	-	Low
<b>Hop Limit</b>	4	30	4	N/A	N/A more than 30

**Table 1: Summary of Main Features**

The information provided in the table above are for general information purposes. Suppliers hardware technical specifications are continuously improving/changing.

A smart home solution dependent both on hardware and on software development. In theory, a gateway/controller can control more than 200 smart devices. This is not quite true as the software performance relies in hardware processing power and the simultaneous number of application features. Software development is an important buying factor for end users. The software development should be continuously updated integrating with new smart devices arising. The user graphic interface should be user

<sup>15</sup> <https://www.bluetooth.com/blog/wireless-connectivity-options-for-iot-applications-technology-comparison/>

<sup>16</sup> [https://www.bluetooth.com/blog/mesh-in-large-scale-networks/?utm\\_campaign=mesh&utm\\_source=internal&utm\\_medium=blog&\\_content=introducing-bluetooth-mesh-networking](https://www.bluetooth.com/blog/mesh-in-large-scale-networks/?utm_campaign=mesh&utm_source=internal&utm_medium=blog&_content=introducing-bluetooth-mesh-networking)

<sup>17</sup> <https://www.bluetooth.com/about-us/bluetooth-origin/>

friendly and attractive to the customers. Users will choose to pay nothing or a minimum yearly fee about receiving these updates.

Wi-Fi is not a popular choice for battery-operated sensors (i.e. motion sensors, temperature sensors, light sensors) due to their high-power consumption. One can find battery operated wi-fi sensors in the market. The periodic battery cost and replacement is a disadvantage compared to RF wireless technologies described above. As mentioned above the main purpose for using a smart home solution is to save energy, money and help reducing the environment pollution. Therefore, the Wi-Fi solution does not fulfil those parameters.

The power consumption of smart devices is low, and it is continuously decreasing due to the technology's advancement. What is more, the microchips are also improving for example computer processors are offering higher performance, higher encryption and lower power consumption. Cloud software management platforms security and personal data protection are continuously improving according to the EU regulations about smart homes.

The gateway or a hub is a mandatory component for any wireless smart home automation. The selling prices for gateways varies but are not considered expensive for the average buyer. The reliability and the competitive advantage of the gateway/hub is dependent to the software application. End user management software/application operates in the cloud and uses the internet in order to communicate with the end user home gateway or hub. The competition is tough between the various gateway's brands. Software manufacturers are trying to create a user-friendly and easy to use application/software for their customers offering them as many features as possible. Some gateways may support more than one wireless communication technologies. Yet, monthly or yearly subscription is required in order for the software developer company to keep maintaining and improving its software solution. Cockpit software platform as well as software updates is provided free of charge for an unlimited period of time. This is one of the main competitive advantage about Cockpit gateway. Cockpit supports only Z-Wave communication protocol at the moment.

The voice command control is becoming a mandatory feature for every wireless smart home system in our days. Many gateways are currently supporting Alexa and Google Home voice control. The market trend forced Cockpit manufacturer to proceed and develop a software integration between Cockpit gateway and Alexa and/or Google Home voice control. Cockpit users will receive that feature integration for free in the near future.

The Z-Wave technology is a popular smart home solution in the market at the moment. It can offer a complete smart home control with ease of installation. The communication data rate is higher than ZigBee at the time being. Smart home systems with IoT smart devices are considered to be the future. A lot of development and improvements will follow. The advantage of the low cost and the ability to install it and control your existing or new house remotely, seems to be a promising future technology in the market. This is not the case for the traditional wired smart home solutions due its high cost. We may also see Bluetooth technology entering the smart home solution systems in the future, not only by manufacturing smart devices but by offering a complete smart solution gateway hub with management software as well.

The drawback of the smart home wireless solutions are the specifications that are not standardised and usually vary. Traditional wired solutions do remain a reliable solution for energy management in large buildings. Wireless technology needs improvements in order to handle large building energy consumption.

## Chapter 3

### Cockpit Smart Home Automation

Smart home solutions were not so famous in the past, due to the lack of technology and the complexity of technical skills required in order to setup a complete system solution. The evolution of touch smart phones and human machine interface, in combination with the cost reduction, (due to the technology advancement) made the smart home solution available to the average buyer. However, the smart homes solutions available in the market today, can still be improved in various ways.

Smart home automation involves a gateway (controller), light control modules, sensors and switches. All the devices are connected to the controller where the users can interact with a software or application installed in a mobile phone, tablet, computer or any web interface.



Cockpit smart home solution automatically performs preprogrammed actions, offering in that way security, electricity energy saving and higher quality of life.<sup>18</sup> Cockpit smart home solution is based in z-wave plus wireless technology. The z-wave wireless technology reduces the smart home solution cost and makes it possible to install it in new or existing houses, apartments and villas. Furthermore, integration with new smart products is easier. The interactive user software is flexible to be controlled via the web site, voice commands, email or other systems.<sup>19</sup>

Cockpit smart home automation solution combines software and hardware which allows cost-effective and efficient management to all household appliances. Moreover, the sophisticated software in the controller can perform actions automatically. A scheduler that incorporates date and time can perform preprogrammed

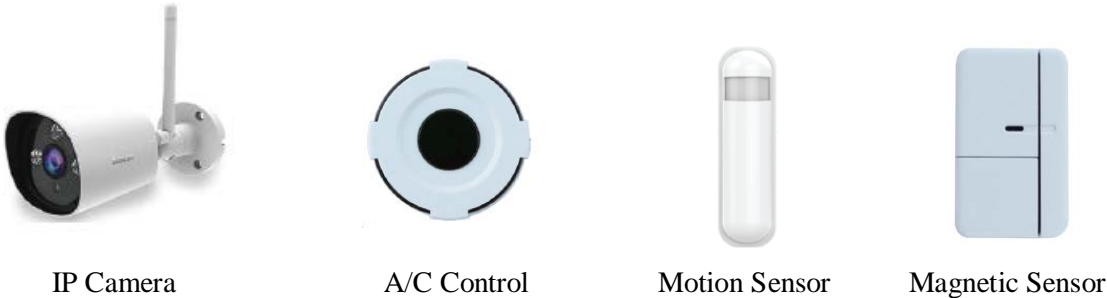


<sup>18</sup> [https://yourcockpit.biz/wp-content/uploads/2018/04/CK\\_PPT-Smart-Home-and-Z-Wave.pdf](https://yourcockpit.biz/wp-content/uploads/2018/04/CK_PPT-Smart-Home-and-Z-Wave.pdf)

<sup>19</sup> [https://yourcockpit.biz/?page\\_id=436&lang=en](https://yourcockpit.biz/?page_id=436&lang=en)

actions. The gateway receives information about weather, sun, night, time or sunrise through the internet. The external lights can be switched off and on automatically according to sunset and sunrise. There are endless functionalities the cockpit gateway can perform.

Smart modules installed inside the electrical boxes of the light switch, garage doors, water-heater switch-incorporating thermostat, shutters and LED strips. Cameras, sirens, smart plug, smart meter magnetic and motion sensors communicate wirelessly with the controller through the Z-Wave wireless technology. Z-Wave smart lighting control modules operates with the existing lighting fittings i.e. switches and lights. There is no need to replace lighting switches.



**Figure 2: Cockpit Smart Devices**

New Z-Wave smart control devices integrated with Cockpit software continuously in order to provide a complete an up to date smart home solution.

As soon as the user adds a smart device in the system (controller) it has the option to create multiple house zones, (floors). Any description or name can be inserted for the smart device according to the user’s preferences. Cockpit smart modules also provides individual energy consumption. The users can switch on and off their devices manually or automatically in order to reduce the energy bill.



**Figure 3: Example of a smart home**

# Chapter 4

## Marketing Research

According to McDaniel's and Gates (2012)<sup>20</sup>, Marketing Research is the function/activity that links the consumer, customer and public to the marketer through information – information used to identify and define marketing opportunities and problems; to generate, refine and evaluate marketing actions; to monitor marketing performance; and to improve the understanding of the marketing process.

The basic steps used to conduct Marketing Research are shown in Figure 1 “Marketing Research Process”.



Figure 4: Marketing Research Process

### 4.1 Define the problem and research objectives

Defining the problem is the single most important step in the research process, because only when a problem has been clearly and accurately identified a research project can be conducted properly. Cyprus market should get educated about smart home solution technology benefits. Smart devices by themselves cannot resolve any problems, i.e by controlling them remotely. Every smart device can serve a single purpose at a time. The purpose of smart home system is to perform actions automatically by controlling smart devices integrated. A smart home system should be programmed according to the user's preferences.

Basic functions of the home automation can resolve many problems like controlling entrance doors, garage doors, entrance gates, turn off clothes iron, hair iron any electrical appliances, lights you may forget to switch off when leaving the house. Energy saving is possible by controlling automatically the temperature of the house heat/cool, switching off the lights and any unnecessary operating electrical appliances. Smart home have unlimited potential applications. Users can use their creative thinking in order to resolve every day routine problems.

In order for Nedeco Electronics Ltd to educate the market in Cyprus is mandatory to increase its awareness level. The company is mainly dealing with large local organisations. Individual consumers are not aware about the company's scope and professionalism. The marketing communication process involves planning, implementation and control of all marketing tools. The marketing communication target is to inform and build awareness in the consumers mind about Cockpit smart home solution.

<sup>20</sup> McDaniel, C., Gates, R., (2012), Marketing Research Essentials, 9th ed., John Wiley & Sons, Inc.

Next, the demographic groups should be identified as these groups are the potential company customers. Marketing communication strategies should highlight competitive advantages of the company. It is important to identify for which reasons customers should buy products and services from Nedeco Electronics Ltd instead from its competitors.

The objective of our research is to identify through a situation analysis if the Cypriot market is ready for individual customers to accept smart home automation system in their every day life. If yes how to market a new product more effectively?.

Marketing strategy objectives is to enable Cockpit home automation system enter the Cypriot market. To create company positive image for existing and new customers. Increase of a company's awareness is a necessity in order to push any product in the market.

#### 4.1.1 Develop a research plan

Once the research problem and objectives have been defined, it is important to determine the exact information that are needed, and develop a plan to gather the information efficiently. For the purpose of the study both a quantitative and a qualitative research approach were used. The quantitative approach utilizes statistical sampling and techniques such as survey questionnaires which can be analyzed statistically and provide numerical findings.

The qualitative approach does not involve the manipulation of any mathematical variables but attempts to get a much deeper understanding about the subject of research through interviews or focus group discussions.

The quantitative approach was selected because of the significant advantages that it offers. First of all, it allows a cost and time-efficient data analysis due to its structured format. The close-ended questions that are used in the survey questionnaires are clear and specific and thus, can lead to precise conclusions. What is more, the particular approach gives the possibility to compute and interpret statistics which are considered to be necessary for the fulfilment of the purpose of the study.

However, the quantitative approach falls short in identifying the reasons behind the answers of the respondents or to provide any information about the environment being studied. In order to resolve this issue, the qualitative approach was also used. This helped us gain a more in depth and holistic view of the situation.

#### 4.1.2 Study tools

A survey questionnaire was used in order to collect quantitative data. The aim of the survey was to measure three different sections. Firstly, the market awareness about smart home automation system solution features and benefits. Secondly, identifying which are the main reasons consumers are willing to buy a home automation system.

And last but not least, the demographic information of the respondents, so as to achieve a better statistical analysis and awareness. Therefore, questions about competition were included such as which companies are currently well known in the market offering smart home solutions.

#### 4.1.3 Sampling Method

The responders were 44 living in various locations all over Cyprus. Due to the limited time available for the study, only a small sample of the population was selected for personal interviews. More precisely, employees' information that was given by Nedeco Electronics Ltd and a few developers. The



intuition behind this sample selection was to identify any possible differences in their perception. The data collected from the interviews were subsequently processed qualitatively.

#### 4.1.4 Method of data analysis

The survey questionnaires were analysed with the use of MS Excel. The answers were converted into percentages. Based on these percentages the researchers calculated the levels of agreement for the questions. The process is comprised by five different phases including planning, sample selection, data collection, analysis and results. During the planning phase, the researchers investigated previous studies on smart home automation and other related fields in order to build the theoretical framework and be in the position to design effectively the survey questionnaire and the interview.

In the sample selection phase, the sample of the responders who would be asked to answer the surveys and the sample of the employees who would be interviewed was selected. The data collection phase involves the implementation of the qualitative and quantitative research approach.

This is followed by the analysis phase where the method of data analysis that was previously described is applied. The final phase of the research procedure is the results phase.

#### 4.15 Limitations of the research

The research conducted had several limitations such as:

- Some responders were not familiar at all with the smart home automation technology.
- The questionnaires were not answered by a number of participants.
- The number of responders is low.

#### 4.1.6 Ethics

The respondents were guaranteed that the answers provided would be anonymous, and confidential. Through the aims of the project the interviewees were informed about the aims of the project and we ensured confidentiality.

Ethical measures were also applied in the analysis of the data. The responses from the surveys and the personal interviews were not manipulated but were treated with accuracy, so as to ensure that the final results of the study would be truthful.

# Chapter 5

## Marketing Plan

### **5.1 Business Review**

Nedeco Electronics Ltd was established in 1989 by Neophytos Demetriou with the intention to provide full range of telecommunication solutions and equipment that includes data transmission, telephone systems and software. Since 1989 Nedeco Electronics Ltd is an authorized importer, reseller and installer of telecommunication solutions of Alcatel-Lucent Enterprise in the Cypriot market. The company has a solid trust with its existing B2B customers and over 30 years of telecommunication service experience.

New technology solutions entered the market over the last years offering value for money solutions in telecommunication industry. In order to succeed the competitive situation, the company has diversified its products and services portfolio solutions, thus offering a variety of additional solutions like call centre software, voice recording, data network solutions and unified communication solutions.

Moreover, Nedeco Electronics Ltd entered the IoT market by providing fleet and cooler control management solutions for vehicles and chillers or freezers. Nedeco Electronics LTD took a challenging decision to diversify its solutions and services by adding Cockpit home automation in its portfolio.

#### **5.1.1 Vision**

The vision of the company is to remain at a leading position in the telecommunication market sector, serving the larger organizations in Cyprus, by offering quality products and solutions and providing excellent support and services.

#### **Keys to Success**

##### **5.1.2 Secure**

Cockpit smart home uses high encryption technology. The technology encryption used is the same used by the visa payments systems. Cockpit solution offers privacy and safety to its customers while controlling their house's devices from anywhere they are at any time of the day or night.

##### **5.1.3 Easy to Use**

Cockpit's user-friendly environment makes it easy to use for all smartphone users. Scenes and/or routines can be configured by the users avoiding unnecessary charges for technical support. Integrating additional smart module and devices is easy and flexible for every kind of user.

##### **5.1.4 Low Cost**

As many low-cost smart home solutions exist in the market, Cockpit offers a complete smart home solution. In addition, software updates are free for life. Users can enjoy any new smart devices integrated with the software solution for free.

##### **5.1.5 Reliability**

Cockpit smart modules are manufactured in Italy with minimal hardware failures or problems. The Controller performs schedule backups automatically. Individual configuration settings for each user is securely saved in the cockpit cloud platform. Thus, in case of controller failure the user can replace the controller hardware and perform a backup restore action. The Cockpit smart home system will be up and running within a few minutes.

### 5.1.6 Customer Support

Nedeco Electronics Ltd aims to provide excellent customer support. There is a communication channel procedure with the manufacturer. Technical configuration problems are resolved within 1-2 days.

### 5.1.7 Follow the Market Trends

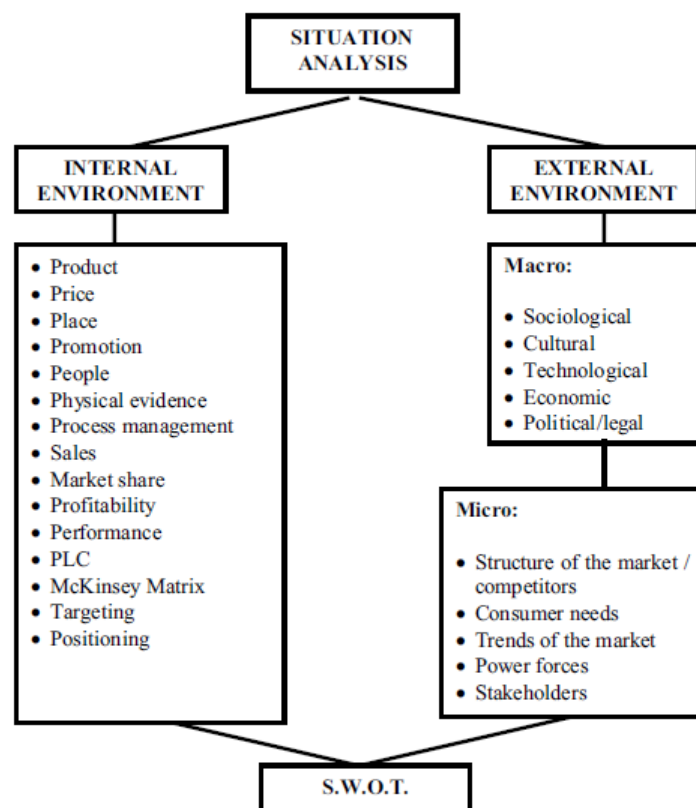
Monitoring new technology trends. If necessary, the company requests new smart devices integration and features from the manufacturer in order to remain competitive in the market.

### 5.1.8 Marketing Planning

Marketing planning is a process of examining and analysing environmental competitive and business factors, affecting business units and forecasting future trends in marketing areas of interest to the enterprise. Based on the marketing planning findings an organisation can formulate its marketing strategy and tactics.

## **5.2 Situation Analysis**

The situation analysis or audit Vrontis & Thrassou (2006), described as the ‘where are we now’, is the means by which a company can identify its own strengths and weaknesses as they relate to external opportunities and threats. It is thus a way of helping management to select a position in that environment based on known facts<sup>21</sup>.



**Figure 5: Situation Analysis Parameters**

In order to develop a strategy, we need to understand the present status by analysing a company’s internal, external environment, followed by market, competition and SWOT analysis. A detailed diagram

<sup>21</sup> Vrontis, D., Thrassou, A. (2006), Situation Analysis and Strategic Planning: An empirical case study in the UK Beverage Industry, Journal of Innovative Marketing, Volume 2, Issue 2 pp. 134-151

of the factors that need to be considered in the internal and external environment is presented in Figure 2 “Situation Analysis Parameters” below.

### 5.2.1 Demographics

The questionnaire was handed out to 58 possible customers and we have acquired 44 responders leading to 75.6% responds.

Regarding the demographics of the responders:

**Age:** 19 of them were between the ages 25-34 (43.2%), 1 of them was between the ages of 45-54 (2.3%) and 24 of them were between the ages of 35-44 (54.5%).

**Sex:** 30 was male (68.2%), 12 was female (27.3%), 1 prefer not to say (2.3%) and 1 was hermaphrodite (2.3%).

**Education status:** 30 Master’s degree (68.2%), 13 Bachelor’s degree (29.5%) and 1 with Doctorate degree (2.3%).

**Employment status:** 42 were employed and 2 of them were part-time employed.

**Income status:** 5 of them were over 50k (11.4%), 30 of them were between €25k-50k (68.2%), 6 of them between €10k-24k (13.6%) and 3 of them were below €10k (6.8%).

As we can see from the results mentioned above, most of the interviewers which answered the home automation research questions were at the age range of 25-44, and most of them were male. It is worth to mention that 24 of the responders (54.5%) were not aware about smart home automation when answering. The pie charts from the analysis can be found in Appendices. Demographics questions showed that possible customers interested in smart home solution technology are between the ages 25-44 with average income status. Most of them are male educated up to a Master’s degree. It seems that older people do not find smart home technology useful. Many of them may not like or follow technology advancements. Marketeers need to communicate the benefits of smart home system to people with age higher than 45. Overall, it seems that younger people are willing to invest in converting their houses into smart home for a low-cost smart home solution.

### 5.2.2 Internal Analysis

An internal environment analysis examines organization's competitive advantages, resources and competencies in order to identify its strengths and weaknesses.

### 5.2.3 Product

Cockpit home automation software solution is a service that includes hardware installation as well. Nedeco Electronics Lts is looking to offer Cockpit home automation software solution in Cyprus that will eventually create distributions and or installation channels. The company is offering a new wireless home automation system that is cost efficient converting existing and/or new home into a smart home.

The Cockpit smart home system allows users to easily control their smart home from their smart phone, tablet and/or computer. The product is taking advantage of the Z-Wave wireless technology reducing the cost as there is no need of additional of electrical wiring. Through Cockpit system, users communicate with the gateway controlling any smart device installed in their home.

The Cockpit software allows users to divide their home into custom zones like ground floor, first floor, kitchen etc. By dividing the house into several zones, the users can control any room temperature, lights, sockets, surveillance cameras and any smart electrical appliances that can be translated into energy efficiency and running costs reduction.

This is simply done by registering the smart modules or devices with the gateway. The system includes electricity smart meters as well. The smart meters can provide dashboards and reports about the

electricity consumption and system performance. Users can control their electricity consumption by receiving alerts and emails on their smart phones. Therefore, they can reduce their electricity bill even more, by using electricity at nonpeak hours.

In addition, Z-Wave wireless technology radiation power is a hundred times less than wi-fi and mobile phones. It is much safer to use than wi-fi. Communication between the user smart phone and the gateway through the internet is encrypted. The questioner results showed that 79.50% are aware about smart home solutions and 79.50% are feeling comfortable to automate and use smart home products.

#### 5.2.4 Price

The price of the product/system is an important factor that produces revenue to the company. The feedback received from the questioner showed that the price is a major decision factor. Even though there is a group of people that are interested in product quality and company product service and support, from our research we got the clear message that price is a crucial decision factor.

**Question:** If there is a home automation system within your budget? Will you be interested in automating your home?

**Answer:** 100% Yes.

Price is depended on external and internal factors but also on competitors pricing. Attention was paid to the Cockpit solution product selling pricing strategy. The Cockpit solution selling price is considerably lower compared to other home automation systems. The target here is to gain a high market share as the technology solutions are moving forward fast. What is really important here is that there are very few competitors offering a complete Z-Wave wireless home automation in the market right now.

#### 5.2.5 Place

The distribution place for Cockpit solution products to the suppliers is Nedeco Electronics Ltd main offices. The company keeps some stock available right away, however but in case of large orders, the delivery will take between 1-2 weeks. The installation can be performed by the company's trained personnel or external electricians that are trained to install the Cockpit home automation solution ensuring that everything is working properly.

#### 5.2.6 Promotion

As already mentioned above, Nedeco Electronics Ltd company awareness level is low. This was evident by the results of the research questioner. Only one of the 44 responders knew that Nedeco Electronics Ltd offers home automation solution. In order to increase the company awareness level, online and offline promotion tools should be used. Facebook, LinkedIn, twitter, company website and Instagram are the main online marketing tools the company is currently using.

Twenty responders over forty-four indicated that they are not aware about home automation systems. Controlling the house temperature, garden watering and water temperature remotely are most important functions of smart home according to the questioner results.

#### 5.2.7 People

There are standard procedures and internal processes for stand-by technical support team as Nedeco Electronics Ltd company serves large B2B and government organisations. Cockpit smart home solution customer service and support can easily be added in the existing internal company processes. There are electrical engineers and technicians that are currently working for the company. They can attend Cockpit installation and programming training. Subsequently, the company will have to outsource Cockpit installations once the sales start growing.

### 5.2.8 Physical Evidence

Services are intangible in nature. Physical evidence is the environment where the service is delivered. However, in order to create a better customer experience for end users, a demo of smart home systems should be created. This demo should be attractive and fascinating in order to influence and attract the potential customers and lead them to buy.

### 5.2.9 Process

Nedeco Electronics Ltd serves the Cyprus market for over 30 years. The company is already well structured and consists of the board of directors, sales, technical and administration departments. New Cockpit smart home solution products and installation services can be integrated in the existing internal operating processes without any problems. The technical department should assign the electrical wiring and smart devices installation to an existing technician. The sales and marketing department should work together and coordinate future promotion activities. The technical and/or sales department is expected to grow accordingly.

### 5.2.10 Service

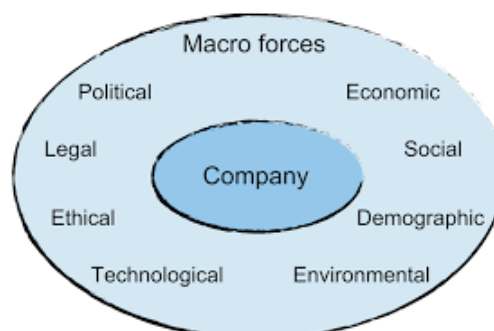
Customer service and support is considered to be an advantage for Nedeco Electronics Ltd company as it has more than 30 years of B2B experience in serving large organisations in Cyprus. The company is planning to offer high quality services and support to all Cockpit smart home automation users, as most of the competitors may fail in this part. There is a 24 hours customer support line and stand by technical team.

## **5.3 External Analysis**

External analysis is a review of all factors that affect the organization and are outside of the organization's territory. The external environment has two aspects: the macro-environment that affects all companies and the micro-environment that affects only the firms of a particular industry. External analysis can keep the company synchronised with the external world. Both macro-environment and a micro-environment are going to be analysed in this research.

### 5.3.1 PESTEL Analysis

A PESTEL analysis is a marketing tool used to examine external environment factors that have impact on activities and performance<sup>22</sup>. PESTEL are political, economic, social, technological, environmental, legal external factors that affects an organisation's performance. Once the organisation identifies possible opportunities and threats it can perform better than its competitors. The results are used in order to identify strengths, weaknesses, opportunities and threads (SWOT) of the product in the market.



**Figure 6: PESTEL**

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<sup>22</sup> Thompson, L. J. and Martin, F., (2010) Strategic Management: Awareness & Change, 6th ed., Cengage Learning EMEA, p. 86-88, 816

### 5.3.2 Political Factors

Political factors like political stability, foreign trade, tax laws labour and environmental laws etc affect the way an organisation performs its business. Cyprus is a member of European Union and trading between European Union countries/companies is free. Cockpit home automation is manufactured in Italy and the headquarters are located in Slovenia. There are no custom fees between these EU countries. Thus, ordering and delivery procedures are faster and easier.

Housing mortgages can be easily obtained not only due to the current state of Cypriot economy, but also due to the Cyprus political strategy to attract overseas buyers and investors. Furthermore, the legal process of acquiring a building permission is getting easier these days in contrast to the past administration procedures.

### 5.3.3 Economic Factors

The economic recession that took place in March 2013 made people think twice as to where and how to spend their income. Currently the Covid-19 virus created a strange market economic situation. The tourist industry is affected by the Covid-19 virus, but the building development industry in Cyprus, is still growing. People economic factors like economy growth can affect the profitability of smart home automation. Even though there was an economy growth for the last three years technology product solutions and services are getting cheaper. This is mainly due to technology development as well as the market competition. Furthermore, affordable smart home automation solutions are easier to sell to the average customer.



## AVERAGE MONTHLY EARNINGS, 2010-2019

(€)

YEAR	MEAN			MEDIAN		
	Total	Males	Females	Total	Males	Females
2019	1,979	2,123	1,806	1,556	1,657	1,429
2018	1,939	2,086	1,761	1,519	1,629	1,397
2017	1,892	2,037	1,721	1,497	1,599	1,379
2016	1,879	2,029	1,708	1,498	1,600	1,377
2015	1,882	2,039	1,708	1,509	1,623	1,391
2014	1,892	2,051	1,715	1,522	1,653	1,395
2013	1,945	2,114	1,755	1,586	1,731	1,415
2012	1,988	2,162	1,787	1,611	1,772	1,427
2011	1,967	2,140	1,758	1,607	1,755	1,404
2010	1,915	2,090	1,700	1,566	1,723	1,367

Note: The data source are the records of the Social Insurance Services

(Last Update: 28/09/2020)

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**Table 2: Cyprus Average Monthly Earnings**

The data mentioned above are encouraging as people are having higher annual earnings than before. Therefore, local citizens can invest more into residential buildings. Cockpit smart home automation system is promising for the company. However, investors will always prefer to invest into long last services and materials. This is an opportunity for the Cockpit product since it offers free lifetime software updates.

#### 5.3.4 Socio-cultural factors

The customers socio cultural characteristics also affects the marketing plan. Elder Cypriot people do hesitate to try or buy smart home solution. They are not familiar with smart phone technology and internet. In addition, most of them believe that smart home automation is not essential for a house/flat. The cultural characteristics and believes of people in Cyprus vary as follow:

- Worrying about privacy and security.
- Smart home solution is not necessary. There is no actual benefit is just a fashion trend.
- They do not know what a smart home solution is/offers.
- New generation X (millennials) are excited about the new affordable wireless smart home solutions.
- Expensive solution.

#### 5.3.5 Technological factors

There is a strong competition in building development industry that is influenced by technology. Buyers are evaluating their investments according to their prices and features offered. The smart phone technology improvement over the years help smart home's automation growth. Users can control their smart homes, flats, villas etc in a convenience way via their smart phones.

More and more devices are integrated every day with smart home automation systems improving their smart features as well. The manufacturers of wireless smart home devices are increasing. There is a potential thread from new and cheap substitutes allowing new potential competitors to enter the market.

#### 5.3.6 Environmental Factors

Pollution is an environmental problem which the EU countries are continuously trying to improve. New homes and buildings are built in a specified way in order to save energy and consume less electricity with environmentally friendly materials. They have started pushing smart home solutions in the market. Electrical energy saving is more efficient when using a smart home automation solution.

Producing less electricity will help reduce environmental pollution. Large buildings can save money, energy and time by automatically switching On and Off electrical devices (heat, cool, lights etc) that are not being used. EU is already preparing plans that will help reduce pollution by using smart home automations.

#### 5.3.7 Legal Factors

Installing a smart home automation can be dangerous. The company needs to be aware of what is legal and what is not. Licenced electricians are needed in order to install smart home automation solution. Security surveillance licence is also necessary in order to perform camera surveillance installation for consumers properties.



## 5.4 Market Analysis

### 5.4.1 Competition

There are currently very limited wireless home automation suppliers in the Cypriot market. The main competitor of Cockpit wireless home automation is Fibaro. Cockpit and Fibaro manufacturers are offering a complete smart home solution. Competitors like Somfy, Samsung etc are offering smart home solutions only for specific devices or equipment.

Fibaro and other wireless smart home solution products can be found online at various prices. The prices vary as there are distributors that are handling and selling high volume of smart hardware products. The installer companies should offer superior service and support in order to remain in a competitive price market. This is considered to be a disadvantage compared to Cockpit. Cockpit products cannot be found online, and authorised resellers or distributors are not allowed to sell Cockpit products via their websites.

Cockpit mother company can control the selling prices according to every Country buying power and competition. This maintains the business running without lowering their margins. On the other hand, the online market provides the opportunity of selling products not only to the European countries but also to the rest of the world. Creating a nice webpage selling products on-line in low prices can help increase the company's sales.

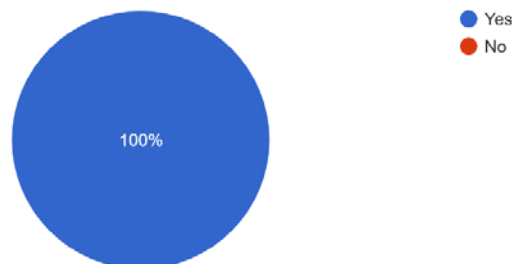
There are many smart home product brands in the market. These smart home devices can integrate and work with many different gateways. A DIY user will have to buy various product brands, with different working technology in order to achieve a complete smart home solution. A mixture of Z-Wave, Wi-Fi, ZigBee, Bluetooth etc will be necessary. Cockpit and Fibaro smart home solutions can offer a complete smart home solution experience by using Z-Wave technology products only. This gives an advantage of a homogeneous solution offering effective communication between the smart devices.

Product support is possible and easier for homogeneous solutions. Customer service and support is a crucial decision factor for buyers. Support and maintain smart home systems (updated) will keep the business sales running in the long term.

### 5.4.2 Market needs and market trends

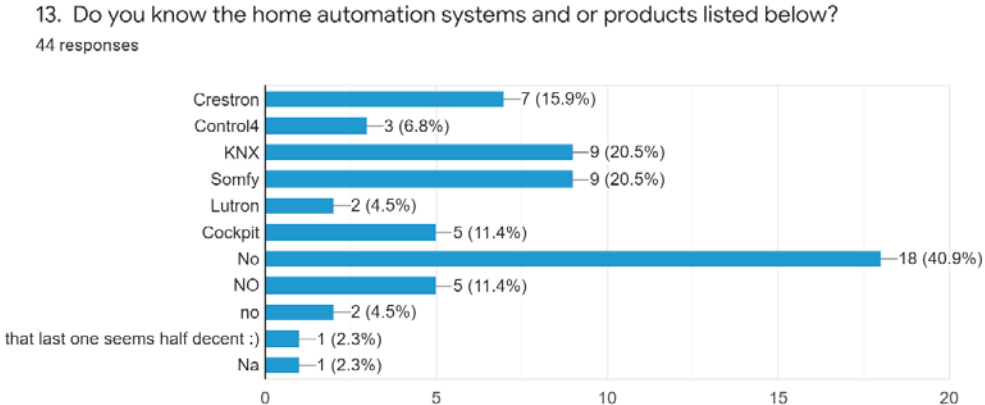
The company is looking to create a new market by using its high technical support expertise. The target is to establish the Cockpit solution in the market by creating new distribution channels and installers in Cyprus. Answers received from the responders were positive about paying a smart home solution in their budget.

What if there is a home automation system within your budget? Will you be interested in automating your home?  
23 responses



Communication technology with the use of internet is the new market trend. Total connected smart home units are expected to reach 1.3 million by 2024. The voice assistant is on high demand and its being used in order to control smart home devices<sup>23</sup>. IoT (Internet of Things) technology and internet communication has created a new market trend about smart home solutions. Smart devices can be accessed, monitored and controlled remotely according to the user preferences.

According to the answers received everyone is interested in a smart home system. The market is seeking an affordable, cost wise, smart home solution. Cockpit smart home system solution looks promising for the company in the future. This can be seen clearly form the answers received in question 13 below. The interviewees do not support any specific wireless smart home solution brand. Some of them state that they are aware of traditional wiring smart home solutions.



Economic recession due to covid-19 can be helpful for wireless smart home solution solutions. Consumers looking to spend money in smart home systems can benefit from low cost wireless solutions compare to the traditional wiring smart home solutions.

5.4.3 Competitive Position Analysis

Porter five forces is a competitive and analysis position tool that evaluates the strengths and the market position of an organisation.

5.4.4 Supplier Power

Cockpit supplier can control the market prices due to the policy not to sell Cockpit smart home products online. In case there is an increase of market demand, prices can be controlled from the supplier. Cypriot market is price sensitive and consumers may search for alternative solutions in case of price increase. However, there are many suppliers that are willing to enter the smart home automation market.

The company created partnerships with other Z-Wave brands as well in order to avoid any possible problems. A universal Z-Wave controller that is compatible with various smart devices brands is offered as an optional solution to the consumers.

5.4.5 Buyer Power

Buyers power can affect the company’s profitability. There are many substitutes regarding smart home solutions. The sales and marketing departments should promote the product strengths and customer support service history of Nedeco Electronics Ltd. Additionally, creating strategies to develop Cockpit smart home loyal customers is essential.

<sup>23</sup> <https://www.juniperresearch.com/resources/infographics/smart-home-statistics>

#### 5.4.6 Competitive Rivalry

There are a few competitors that are trying to promote similar products and services at the moment. They are reducing the prices by making offers in order to gain a higher market share. Nedeco Electronics cannot compete large companies with more than 100 employees, yet it can face threats from smaller companies.

#### 5.4.7 Threat of Substitution

There are many substitutes of smart home automations. These substitutes either offer cheaper and lower quality smart home products or incomplete and expensive traditional wired solutions that are trying to compete the Z-Wave technology. Fibaro is the main competitor of Cockpit as mentioned above. Since Cockpit and Fibaro smart home solutions are value for money solutions, Nedeco Electronics has to develop strategies in order to gain a higher market share and gain loyal customers.

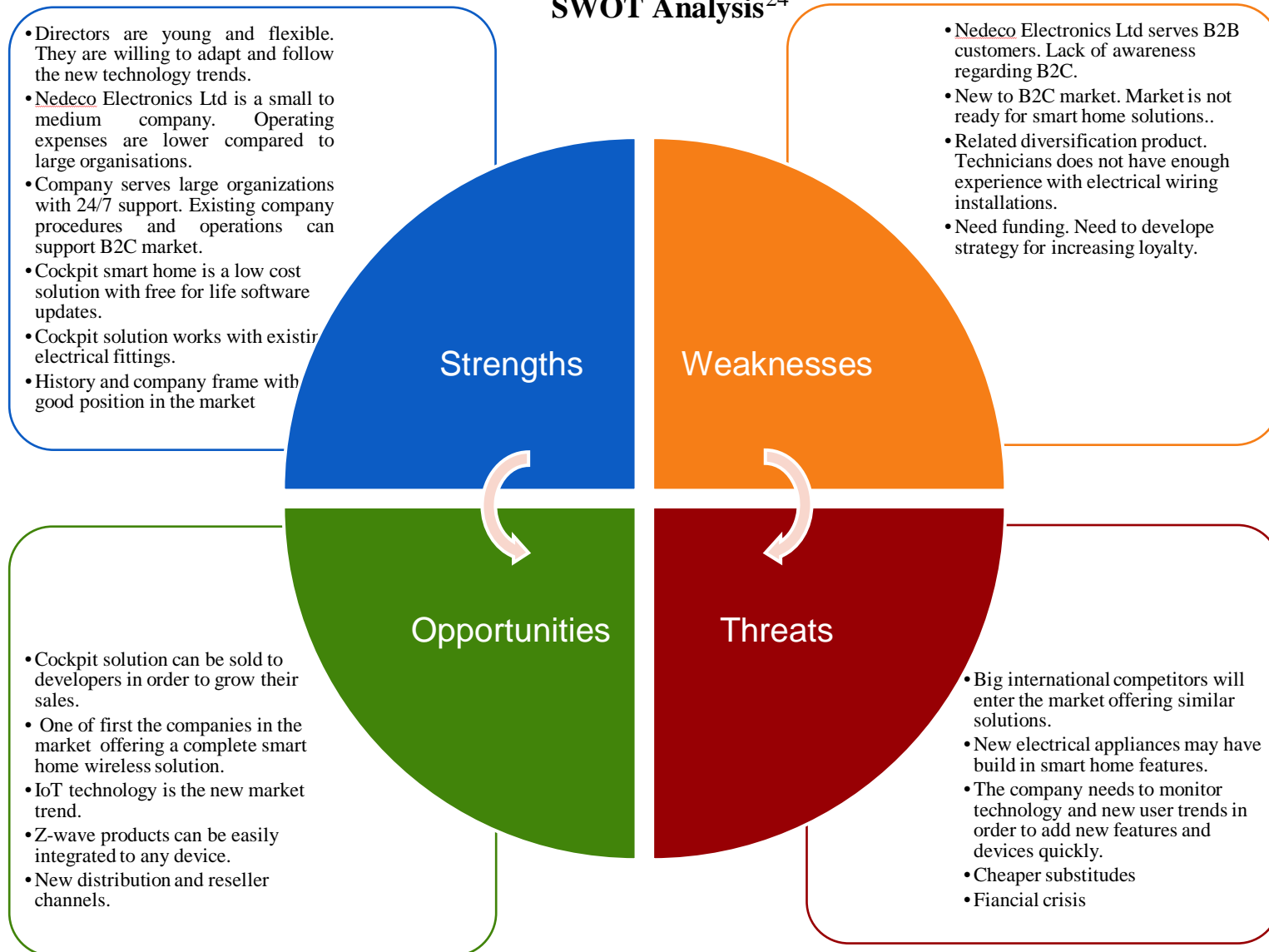
#### 5.4.8 Threat of New Entry

Existing traditional smart home solutions are planning to enter the wireless smart home solution. The threat of new entrants is high. The company needs to act fast and adapt to the new customer needs and market trends in order to gain a higher market share. The company must provide greater customer value and satisfaction than its competitors. The marketer must gain the strategic advantage by positioning Cockpit Smart home solution system in the minds of consumers on higher level, against competitor's offerings.

The average start-up cost is high. Smart home systems require a display shop/office where the customers can check and get the experience of smart home features. Personnel training and sometimes stock are required in order to become a brand partner or a reseller. In general, wireless smart home automation products have low selling price thus offering low profit margins. An organisation's profit is based in selling large quantities.

Therefore, an organisation will have to serve high bulk of clients in order to gain enough profit. Customer support is an important factor resulting in customer loyalty. A start-up company will need to properly train the employees that will eventually support smart home systems. The initial capital investment is high as mentioned above. Outsourcing is possible but if chosen the operational costs will be higher. It is rather difficult for an individual or a start-up company to compete an existing structured company due to economies of scale.

## SWOT Analysis<sup>24</sup>



<sup>24</sup> <https://www.aha.io/roadmapping/guide/templates/swot-analysis>

#### 5.4.9 SWOT Analysis

After the internal and external analysis, a complete SWOT analysis is done. The target is to build on strengths, eliminate the weaknesses, take advantage of the opportunities and avoid possible threats. Strengths are the factors that give competitive advantages, add value and have positive effects in company performance. Weaknesses are factors with negative effect that gives a disadvantage compared to the company's competitors. Opportunities are the possibilities of the company to expand its operations and increase sales profits. Threats are the possible external competition or external factors that can decrease sales and profit margin of the company.

#### 5.4.10 SWOT Discussion

Reviewing SWOT factors for Nedeco Electronics LTD showed that Nedeco Electronics is a structured company with strong technical and support experience. Even though, Nedeco Electronics company should work more in promoting its competitive advantages in order to attract customers. The Cockpit solution works with existing electrical fittings and provides free software updates. Nedeco Electronics Ltd should improve its market position by providing information and closer communication to customers. It is mandatory to be up to date in order to adjust its technical solutions and strategies minimising the entrance of new technology solutions.

# Chapter 6

## Marketing Strategies

According to Philip Kotler et al (1999)<sup>25</sup> marketing strategy is the marketing logic a company hopes to achieve its marketing objectives. The company divide the market into small segments that is looking to serve. It targets potential clients (segments) and design marketing mix.

Marketing strategies are necessary for companies in order to meet changing markets. Not every strategy is applicable for all companies. Each company prepares its strategic plan that guides marketing. The marketing department works together with all the company departments to achieve strategic objectives. The marketing strategy is the broad statement of the way in which the organization sets out to achieve their objectives.

The company will promote Cockpit home automation through social media and traditional marketing strategies. The marketing strategy will be focused in low price strategy and extensive advertising in order to gain high market share. By contacting existing company clients and technology enthusiasts' consumers will create demand in Cockpit wireless home automation. Using the company's 30 years B2B customer support experience with large, enterprise organisations will generate awareness and product demand to the targeted audience.

### 6.1 Marketing Objectives

The marketing objectives are to:

- Gain a high market share with Cockpit smart home system solution
- Increase the company's overall sales by 5% by the end of 2021 (sales over €80,000)
- Create an advertising budget of €15000 per year

#### 6.1.2 Marketing Communication Objectives

The Marketing Communication Objectives are:

- To increase awareness by the end of 2021
- To clearly communicate company's mission for Cockpit brand - Branding
- To increase the market share of young technology enthusiastic people (ages 25-45)

### 6.2 Michael Porter Generic strategies

According to Porter (1985)<sup>26</sup> there are two basic types of competitive activities: low cost or differentiation. Low cost advantage and differentiation activities lead to the three generic strategies: cost leadership, differentiation and focus. By using these three strategies a company can achieve above average performance in industry.

#### Cost leadership strategy

A company which operates using a cost leadership strategy can have a broad scope. If a company can operate with lower operating cost than its competitors, it will yield to high returns. Nedeco Electronics is implementing a low-cost strategy by offering start-up Cockpit packages at low prices.

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<sup>25</sup> Kotler, P., Armstrong, G., Saunders, J., Wong, V., (1999), Principles of Marketing, Second European Edition. London: Prentice Hall

<sup>26</sup> Porter, E. M., (1998), The Competitive Advantage: Creating and Sustaining Superior Performance, NY: Free Press, 1985. (Republished with a new introduction, 1998.)

The start-up package includes the gateway which is the brain of the system and has a higher price compared to the smart modules and sensors that can be integrated with it. The users are able to increase their smart home system features by adding smart devices at any time.

### Differentiation strategy

Differentiation strategy is the second generic strategy according to Porter (1995). The firm differentiates itself by offering a unique feature service and product. The Cockpit smart home system offers lifetime software upgrades at no cost. The users will always have an up to date smart home gateway, which can adapt with the market trends and technology achievements continuously.

### Focus strategy

The third generic strategy is focus strategy. The company is concentrated into specific segment in the market/industry and fits its strategy into that target segment. The focus generic strategy consists of differentiation and cost focus. B2C criteria are, age, income and living standards. We focused in ages from 25-45. The new homeowners are looking to increase their living standards by installing low-cost home automation solutions (cost focus). B2B are mainly focused in building developers that are looking to increase sales and revenue by providing additional features to their properties (differentiation focus).

## 6.3 Segmentation, Targeting and Positioning

The company should focus on the customer behaviour. It is important to understand how the customers make buying decisions and evaluate technology product solutions. Segmentation, targeting, and positioning together comprises of a three-stage process. We will firstly determine which kinds of customers exist, then select which ones we are best off trying to serve and, finally, implement our segmentation by optimizing our products/services for that segment and communicating that we have made the choice to distinguish ourselves in that way.

### 6.3.1 Segmentation

Segmentation involves finding out the various kinds of consumers with different existing needs. From the research we have concluded that smart home segmentations are:

- Geographic Segments – Cypriots.
- Demographic Segments 25-45 age group, both men and women. Most of them were men.
- Most of them knows how to use technology and are educated to university Bachelor and Master's degree level.
- 

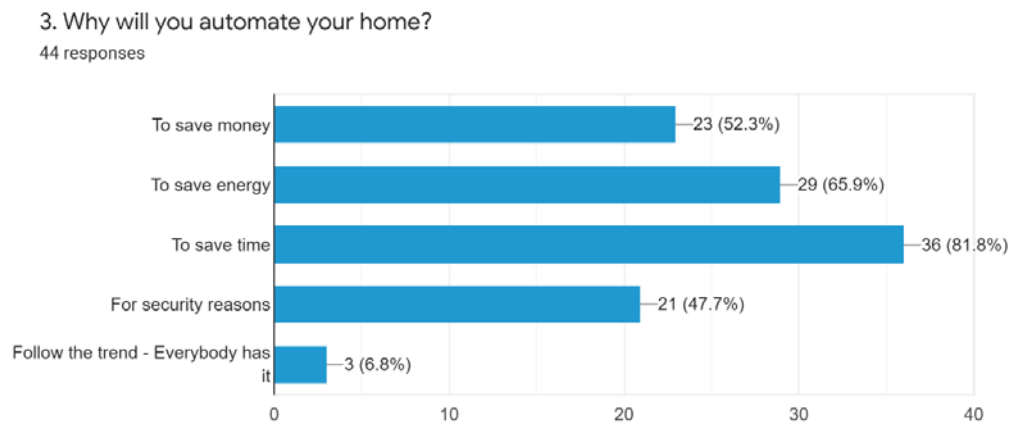
Consumers showed interest for the following smart home benefits:

- Manage water heater remotely or automatically: 63.6%
- Managing heating and air-conditioning: 77.3%
- Manage electrical home appliance: 59.1%
- Shutter and blinds control: 54.5%
- Light control: 47.7%
- Garden watering: 45.5%
- Open door entrance without key: 40.9%

The consumers indicated that the most wanted features about smart home are for controlling remotely the water heater, air-conditioning, central heating, shutters and blinds. In addition, they showed interest in gardening and keyless door entrance solutions as well (i.e. entering the house main entrance without a key, open garage doors from their mobile phone).

### 6.3.2 Targeting

A differentiated marketing strategy should be used, targeting different market segments. The initial target audience will be new homeowners and building developers offering a start-up Cockpit package at €150. The responders indicated that they are willing to automate their homes if they can really benefit from the smart home system. Everyday life is becoming demanding especially for families with kids. Cockpit smart home automation can save time by switching on the hot water, the washing machine or automatic watering for garden flowers and trees. Lights can be switched off and on automatically saving in that way energy and money.



In order to generate leads offline materials product catalogues, flyers and in person product presentation, follow-up phone calls and online promotion should be used. The customers will create smart home system demand. The demand will help the company to create a different marketing strategy targeting (B2B) architect offices, building developers, electrical design engineers and interior designers. Building developers will also be able to sell their properties easier by adding smart home features.

### 6.3.3 Positioning

Currently Cockpit smart home automation system is attempting to get a position itself in the traditional smart home automation system market, by targeting both new homeowners and building developers. Successful Cockpit smart home system positioning in consumers mind will help the company reach its targets. Marketers should position and communicate effectively the Cockpit system to consumers' mind. "Positioning is the act of designing the company's offering and image to occupy a distinctive place in the minds of the target market" (Kotler & Keller, 2009, p. 308)<sup>27</sup>.

A perceptual map used in order check what is the position of Cockpit brand name in the market compared to the competition and consumer perception.

<sup>27</sup> Kotler, P., & Keller, K.L. (2009), Marketing Management, 13th rd., Upper Saddle River, NJ: Person Education.



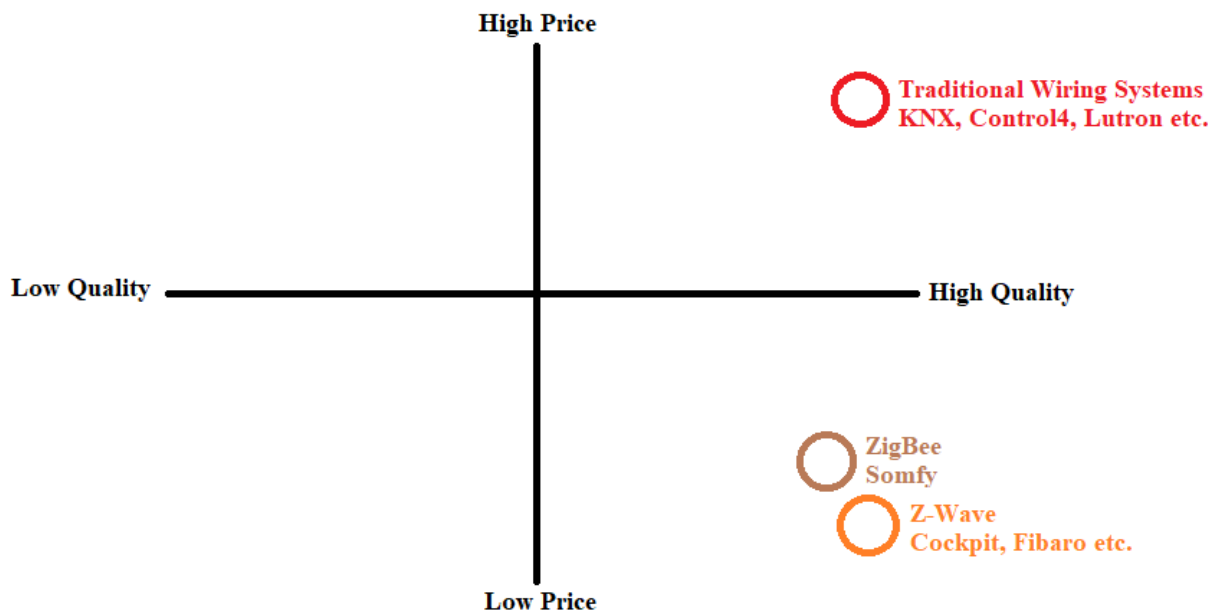


Figure 5 – Perceptual map

The above figure represents four dimensions: Low Quality, Low Price, High Quality and High Price. Cockpit occupies a good position on the Perceptual Map (low price, good quality), but should target a higher score in the perception of the consumer for the future. Main competitor is Fibaro that uses Z-Wave technology. Somfy is a powerful competitor with many years of experience that uses ZigBee technology for its own smart devices. Somfy solution is expensive and does not currently offer a complete smart home solution. They are well known for automatic control in opening and closures in homes.

## 6.4 Tactics

The Marketing Mix or 7Ps which is also called Tactics is described as: the set of controllable marketing variables that the firm blends to produce the response it wants in the target market. (Kotler and Armstrong, 1989). The 7 Ps consist of the following: Product, Place, Promotion, People, Physical Evidence, Price and Process. Based on the SWOT Analysis and the strategies chosen, the following Tactics are proposed to assist the management to maximize its profits.

### 6.4.1 Product

The product Cockpit smart home automation system is considered to be one of the new market trends in the near future. The technology is continuously improving reducing electronic hardware cost as well. Cockpit solution offers a combination of software application and wireless hardware that can be controlled remotely at low prices.

Nevertheless, Cockpit smart home solution offers a comprehensive solution for any user compared to Wi-Fi, Bluetooth and ZigBee wireless solutions. It is important to increase the market share and there are numerous ways to do that. Nedeco Electronics Ltd should use its existing B2B clients for a start. Another way may be to offer some free demo installations to friends and relatives. Furthermore, the Word of mouth can increase revenues and create loyalty from satisfied customers.

What is more, creating business partnerships or acquiring other smart home products that are trying to enter Cyprus market, could be a good idea. This method reduces the number of brands trying to enter the market with similar solutions.

#### 6.4.2 Price

Cockpit smart home products prices are competitive. The competitors' selling prices are displayed online. The selling price of the Cockpit solution is similar to the competitors' prices, however an extra discount offer can help with the buyer decision. The company is selling the Cockpit products gaining a small profit, with the intention of increasing its market share that will eventually offer a higher revenue due to the higher volume of sales. The sales team should keep an eye on the competitors offers and prices.

The company should offer reseller and installers' fair pricing policy by adding a percentage on the base cost. In addition, the company should create various product solution packages for consumers and for distributor channels as well.

#### 6.4.3 Place

The company is located in the capital of Cyprus with easy access to everyone and in a convenient location near the highway. It is not necessary to create any additional warehouse locations. The target is to create distribution channels through various electrical and electronic suppliers' stores. Cockpit smart home products delivery can be arranged easily through the local logistics companies in Cyprus.

The social networks, influencers play a vital part for the company's online presence. Search engines optimisation can increase Cockpit product visibility. The company's website should be updated regularly.

#### 6.4.4 Promotion

Nedeco Electronics Ltd should improve its promotion strategy. As mentioned before most of the promotion is done via "Word of Mouth". The Ideal Home exhibition in Nicosia that promotes new homes systems and products is organised every year in Cyprus and can help familiarise consumers with the Cockpit product solution thus increasing awareness.

Cockpit is a complete smart home solution that can control any smart device in the house. Consumers are suspicious about wireless technology reliability and security. There is no real benefit in buying a smart home system.

In order to reach the targeted audience, the radio, newspaper and tv are required for promoting Cockpit solution. Flyers and brochures, targeting offline audience, customers and building developers should also be handed out. Furthermore, Cockpit solution presentations targeting organisation bodies like ETEK, electrician SEHK and building developers are also important.

Discounted Cockpit home automation packages and social media competitions offering water heating control system during Christmas and easter periods will help with the promotion. Consumers will try to search for additional information in the company's website and online. Cockpit smart home product solution can be advertised in Christmas and Eastern cards and emails of the Company, for existing or new customers.

A full promotion campaign is necessary for educating the market and increase Nedeco Electronic company's awareness level. Social events, charities, public relations will help Nedeco Electronics Ltd increase awareness and people sympathy. Additionally, personal selling and direct marketing (i.e. emails, online adverts) for new and existing customers can communicate effectively the Cockpit solution.

Advertisements in newspapers like Phileleftheros, Politis and in radio stations can reach different target groups and increase awareness. Of course, advertisement in electronic magazines (time out, OK, in

business news etc) and in radio stations that young people prefer will also inform and increase the younger customers.

#### 6.4.5 Physical Evidence

The Company needs to set up demos-showrooms that can visualise a house or a flat with Cockpit home automation. End users can use and interact with home automation systems. By creating various scenarios (preprogrammed actions) can show the real product value to the customers. For example, switching on the lights, changing colours from led strips, switching on the tv etc. A demo may be set up in Cockpit reseller and installer shops.

#### 6.4.6 Process

The processes and the structure of Nedeco Electronics Ltd are in high experienced level due to the 30 years of experience in Cyprus market. Company's economic stability helps to speed up the processes especially for large volume sales in the future. A customer feedback and satisfaction questioner should be added in the company's processes by the end of every new installation.

Furthermore, a weekly staff meeting should be scheduled, in order to face and resolve any problems which arise through discussion and suggestion of possible solutions.

#### 6.4.7 People

The company should invest in employees training. Trained technicians can maximize the performance and efficiency of serving and facilitate the clients. Therefore, trainings of the company's staff will be scheduled twice a year. The motivation of employees for a better company with greater benefits will reflect to customer support and services. Some customers value better service over cheaper price.

The external installers and trainings agreements can also help Nedeco Electronics Ltd to offer improved services quality and support to the clients. Nedeco Electronics Ltd also needs to hire a marketing officer that can run Cockpit smart home solution campaign as explained in the promotion section above.

#### 6.4.8 Service

The company's webpage shall be updated. Someone can download as many information as possible about installation and troubleshooting manual for Cockpit smart home products. Sales quotations shall be answered within 2-3 days (maximum waiting time). In addition, training will be provided to the end customer and preprogramme smart home system solution according the end users habits.

# Chapter 7

## Action Plan

### 7.1 IMPLEMENTATION/ACTION

Marketing implementation is the process that turns marketing plans into action<sup>28</sup> assignments and ensures that such assignments are executed in a manner that accomplishes the plan's stated objectives (Kotler, 2002). It is the process of executing the marketing strategy by creating specific actions that will ensure that the marketing objectives are achieved. Good implementation is critical to the overall success of the organization.

The following Action plan along with the budget needed for each action (Table 1 - Action and Budget Plan) is proposed for implementation for Cockpit smart home automation in order to meet the objectives that have been set.

Advertising	Start Date	End Date	Budget	Person responsible to monitor implementation	Assigned
Radio Proto	11/01/21	31/01/21	€ 2000.00	Marketing Department	Sales Department
Antenna FM Radio	01/02/21	28/02/21	€ 2000.00	Marketing Department	Sales Department
Politis Radio	01/03/21	31/02/21	€ 2000.00	Marketing Department	Sales Department
Phileleftheros Newspaper	11/01/21	31/01/21	€ 5000.00	Marketing Department	Sales Department
Politis Newspaper	01/02/21	28/02/21	€ 5000.00	Marketing Department	Sales Department
Time Out Magazine	01/03/21	31/02/21	€ 1200.00	Marketing Department	Sales Department
InBusinessNews	01/02/21	31/03/21	€ 1200.00	Marketing Department	Sales Department
Bus Advertisements	01/03/21	31/02/21	€ 2600.00	Marketing Department	Sales Department
<b>Total Advertising Budget</b>			<b>€ 20,000.00</b>		

<sup>28</sup> Philip Kotler, (2002), A Framework for Marketing Management, Prentice-Hall, Pearson Custom Publishing, p. 55

<b>Web/ App Development Digital Media</b>	<b>Start Date</b>	<b>End Date</b>	<b>Budget</b>	<b>Person responsible to monitor implementation</b>	<b>Assigned</b>
Facebook, Twitter Page	11/01/21	01/12/21	€ 3,300.00	Marketing Department	Outsourcing
Webpage	11/01/21	31/12/21	€ 1,000.00	Marketing Department	Outsource
LinkedIn	11/01/21	31/12/21	€ 1,000.00	Marketing Department	Marketing Department
<b>Total Web and App Budget</b>			<b>€ 5,300.00</b>		

<b>Cockpit Demo place and design</b>	<b>Town</b>	<b>Quantity</b>	<b>Budget</b>	<b>Person responsible to monitor implementation</b>	<b>Assigned</b>
Display demo photo & design for Nedeco and resellers	Nic, Lca, Lim & Ideal Home Exhibition	10	€ 2,500.00	Owner & Sales Department	Marketing Department
Cokcpit demo smart modules, gateways	Nic, Lca, Lim & Ideal Home Exhibition	100	€ 4,000.00	Owner & Sales Department	Marketing Department
Lighting Fixtures for demo purposes	Nic, Lca, Lim & Ideal Home Exhibition	50	€ 1,000.00	Owner & Sales Department	Marketing Department
Print product catalogues for demo places	Nic, Lca, Lim & Ideal Home Exhibition	500	€ 1,000.00	Marketing Department	Marketing Department
<b>Total Demo place and design</b>			<b>€ 8,500.00</b>		
<b>Offers and Competitions</b>	<b>Start Date</b>	<b>End Date</b>	<b>Budget</b>	<b>Person Responsible to monitor implementation</b>	<b>Assigned</b>
Facebook competitions	01/03/21 01/06/21 06/12//21	15/03/21 01/06/21 19/12/21	€1,400.00	Marketing Department	Marketing Department
Free Installation Offer	01/06/21	01/09/21	€2,000.00	Marketing Department	Technical Department
<b>Total Offers and Competitions</b>			<b>€ 3,400.00</b>		

<b>Social Events and Charities</b>	<b>Place</b>	<b>End Date</b>	<b>Budget</b>	<b>Person Responsible to monitor implementation</b>	<b>Assigned</b>
Tree Plant	Nicosia	06/09/21	€300.00	Marketing Department	Nedeco
Main b2b customers dinner	Restaurant	23/12/21	€2,000.00	Marketing Department	Nedeco
Blood Donation	Nicosia	03/05/21	€200.00	Marketing Department	Nedeco
Cyprus association for children with cancer	Nicosia	01/11/21	€500.00	Marketing Department	Owner
<b>Total Social Events and Charities</b>			<b>€3,000.00</b>		
<b>Total without VAT</b>			<b>€40,200.00</b>		

**Table 3 - Action and Budget Plan**

Forecasting the cost will help the company compare the marketing expenses to the turnover. The action plan helps the company to plan a list of actions in order to achieve its goals. A media plan should be implemented in order for the owner and marketing department to monitor Cockpit Smart home promotional activities over the time.

## 7.2 CONTROL

After setting the action plan, a control system is also a critical function for the success of an organisation. The series steps described above must be executed and measure what should happen with what actually happened or is likely to happen. Basic control systems often detect and rectify problems before they become significant and managers should remember that prevention is better than cure. It is important to be proactive rather than reactive.

The Marketing department will implement a control system regarding Cockpit. In case there are problems with the implementation, inefficiency or an action does not meet the expectations, the marketing department should complete the action or try to find the best possible alternatives. The marketing department will eventually inform the company owner about the findings and proposals. The owner, the marketing and the sales department should alter the action plan in order to serve their targets and scope.

A follow up electronic anonymous questioner asking new Cockpit smart home customers to rate the product service, should be handed out. New market trends and Cockpit smart home suggestions from customers should also be examined. Furthermore, new Cockpit features and services should be added in order to remain competitive.

After careful examination of competitor prices Cockpit should match their prices or offers. The promotion should be carried out as scheduled and analysis should be implemented. The initial target is to increase the company awareness and promote Cockpit smart home system to social media followers.

## 7.3 CONCLUSION

Nowadays, consumers life and buying decisions are affected by various factors like modern technology, social media etc. Cockpit smart home automation system is added in Nedeco Electronics Ltd portfolio. A new suggested marketing plan was created for the purpose of increasing the company's profit. The current strategy of the company is not tailored for B2C products and services. For the analysis SWOT, the Porter's Five forces were applied. To evaluate the strategy qualitative and quantitative analysis were also used.

Nedeco Electronics Ltd is a small to medium size company without a marketing strategy. The company operates in a stable economic environment serving large government and semi government organisations in Cyprus. Reviewing SWOT factors showed that the company has strong experience and technical background in technology field, but they should work more in attracting customers. Attracting new customers will gain a competitive advantage and higher market share.

There is a lack of continuous communication with the potential customers. The company's awareness regarding individual consumers is low and the demand for building construction is expected to slow down. The marketing strategy proposed for the following year should be carefully observed. The most important strategy for Nedeco Electronics Ltd is the product positioning strategy. Since Cockpit smart home solution system is a high-tech competitive solution the company should attract potential customers by providing further information about the company and its product solutions.

The objectives proposed is to increase the company's awareness level and profit. Nedeco Electronics Ltd is well known for its high-quality customer services offered. Internal company processes and environment is well structured due to the 30 years of experience in the Cypriot market. The most important strategy is positioning. The Cockpit smart home system pricing should be regularly examined in order to remain competitive.

Finally, new demo-showrooms and new distribution, resellers channels are mandatory. An important part of the marketing action plan is control and consistent check. B2C and B2B customers should increase according to the marketing plan. The company must monitor external and internal environments and always try to improve its weaknesses. Cockpit smart home solution services and products must satisfy consumer's needs. Consumer requirements are changing within time. Therefore, the marketing plan should be reviewed for the Company to remain competitive. Good planning and keeping strict deadlines for implementing all actions is the key for the Company's future and success.

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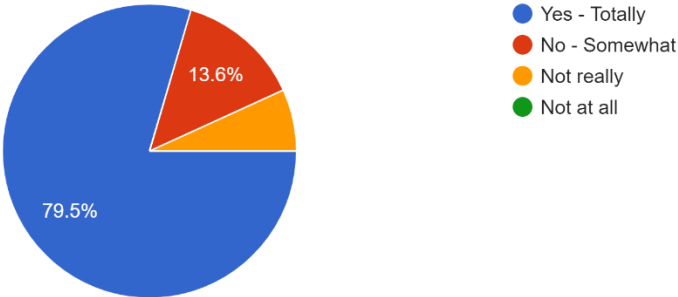
## Online Resources

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6. [https://z-wavealliance.org/about\\_z-wave\\_technology/](https://z-wavealliance.org/about_z-wave_technology/)
7. <https://www.insteon.com/technology#ourtechnology>
8. <https://www.enocean-alliance.org/about-us/>
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15. [https://yourcockpit.biz/?page\\_id=436&lang=en](https://yourcockpit.biz/?page_id=436&lang=en)
16. [https://www.mof.gov.cy/mof/cystat/statistics.nsf/labour\\_34main\\_en/labour\\_34main\\_en?OpenForm&sub=4&sel=2](https://www.mof.gov.cy/mof/cystat/statistics.nsf/labour_34main_en/labour_34main_en?OpenForm&sub=4&sel=2)
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18. <https://www.aha.io/roadmapping/guide/templates/swot-analysis>

# Appendices

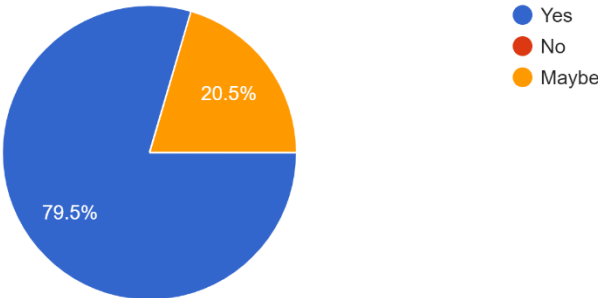
1. Do you feel safe using this kind of products?

44 responses



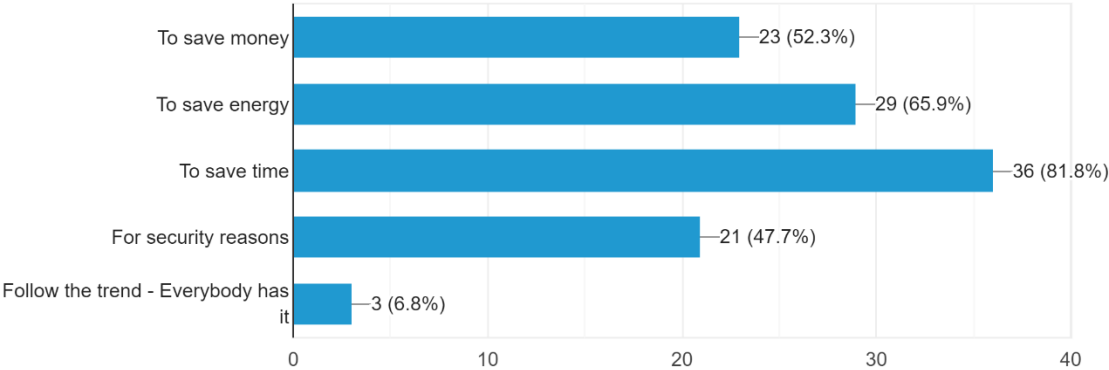
2. Do you feel comfortable in automating your home?

44 responses



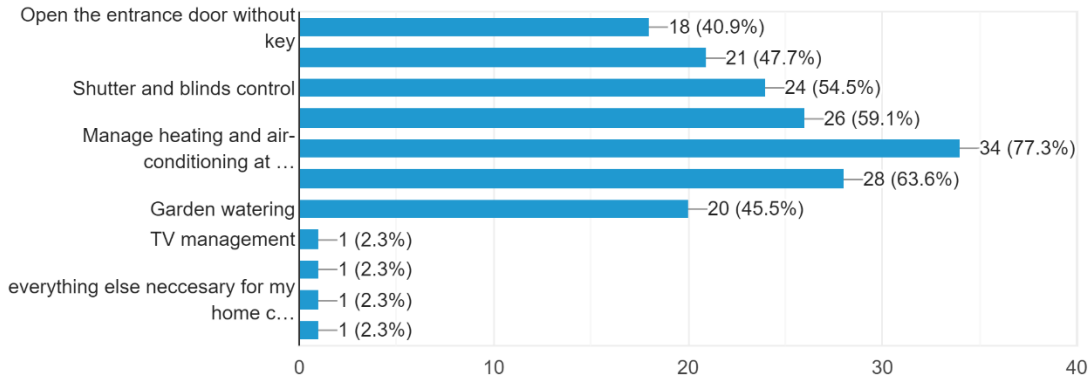
3. Why will you automate your home?

44 responses



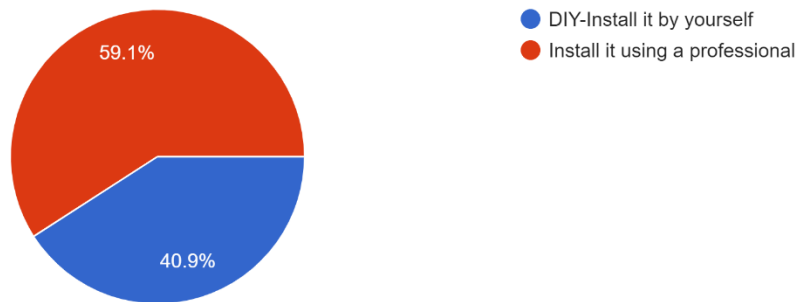
#### 4. Which of the below home automation functions are more important for you?

44 responses



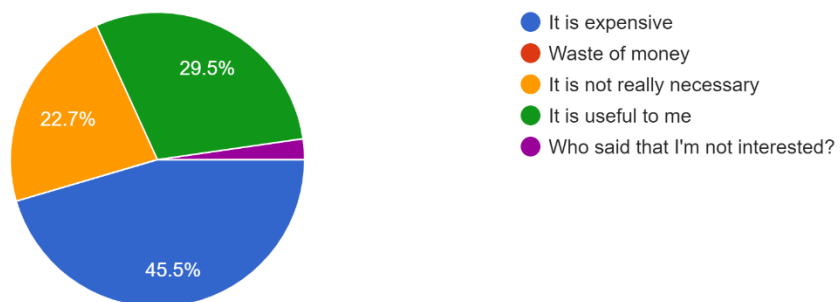
#### 5. If you want to install home automation products at your home, how would you prefer to do it?

44 responses



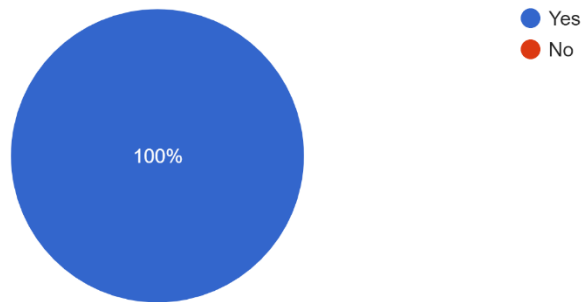
#### 6. Why aren't you interested in a home automation system?

44 responses



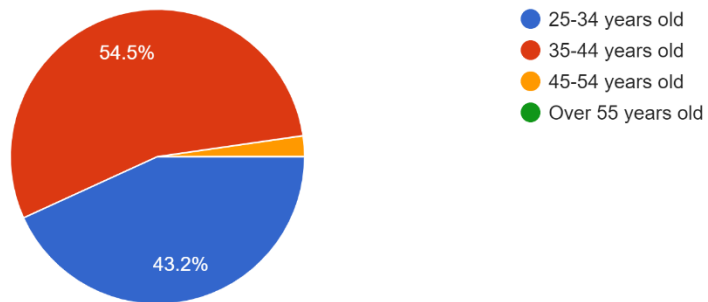
What if there is a home automation system within your budget? Will you be interested in automating your home?

23 responses



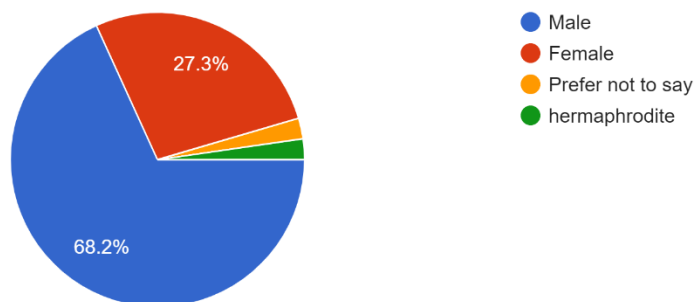
7. What is your age?

44 responses



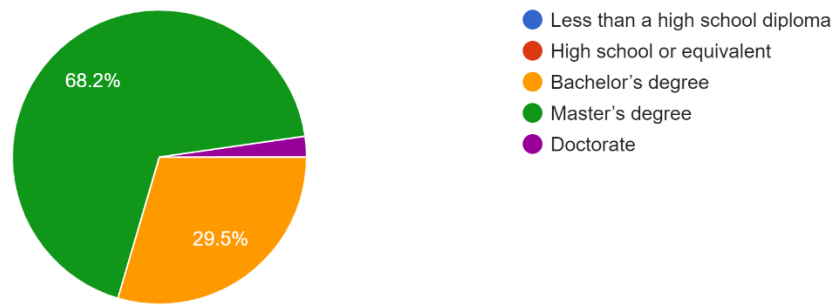
8. What is your gender?

44 responses



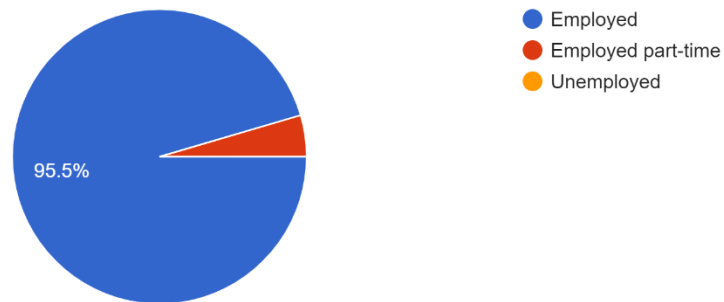
9. What is the highest degree or level of school you have completed?

44 responses



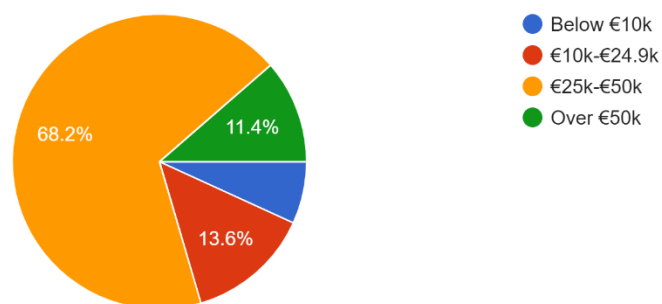
10. What is your employment status?

44 responses



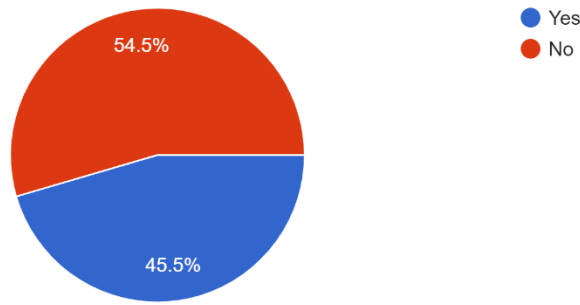
11. What is your household income?

44 responses



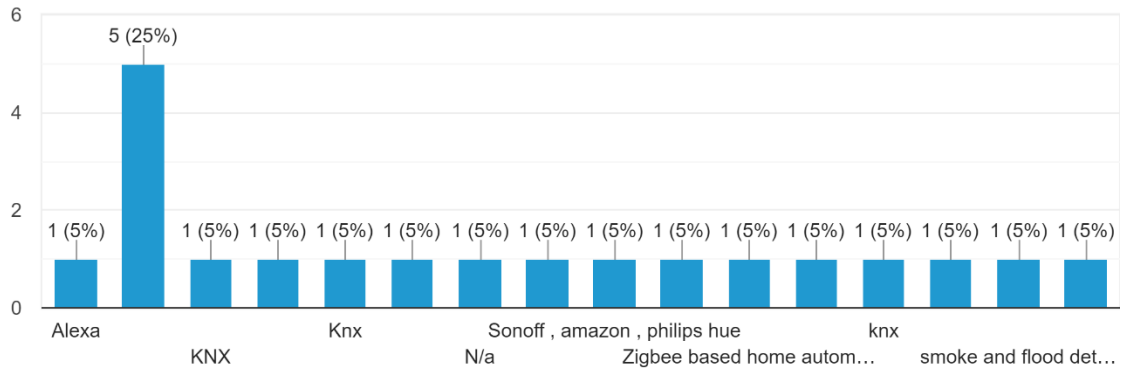
12. Are you aware of any home automation systems?

44 responses



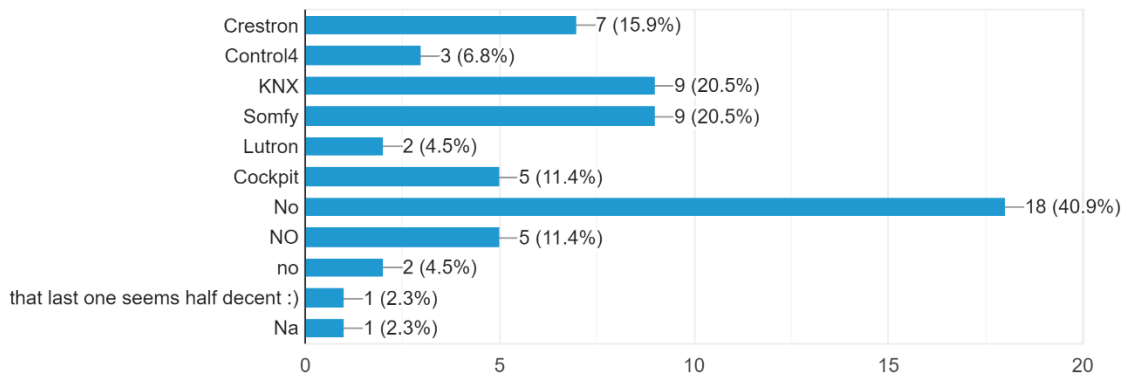
Please specify any other home automation systems.

20 responses



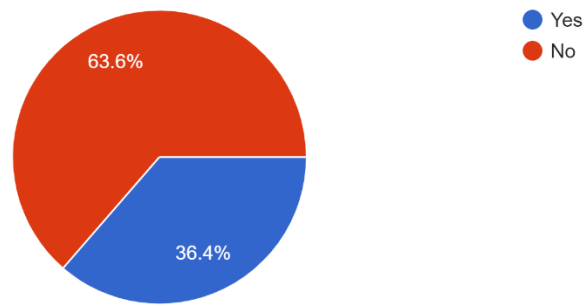
13. Do you know the home automation systems and or products listed below?

44 responses



14. Are you aware of any companies or web stores selling home automation systems?

44 responses



Please specify any other companies or web stores selling home automation systems.

16 responses

