

Business Project

Process from concept to market
ASD Home automation system

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1 INTRODUCTION

The main idea of the report is to determine a possible way of building a home automation start up business from a very early stage to a comfortable position in a period of approximately six years with very low starting financial resources. In order to deal with such a difficult challenge I will follow useful financial, marketing and new product development frameworks which will support me to approach issues correctly. I will also put into practice analysis tools to examine everything related to the market and the internal and external environment of the company and then decide the best direction of the product.

In the first section of the report I will define the concept of business that I want to bring to the market. The product is a modern home automation system affordable, easy to use, modularized and secured, moreover with the possibility of controlling and monitoring the system from mobile devices which makes a difference with other home automation systems already in the market. The product is aimed to be sold online at the end of the start up period, although at the beginning it will be sold more locally using traditional marketing approaches.

A very important issue to face when starting up a business and launching a new product is to perform a deep market analysis. I will use SWOT framework analysis because it is critical to analyze internal strengths and weaknesses and external opportunities and threats. I will also perform a PESTEL analysis to identify external issues that are out of control of the organization and will have some level of impact on it. Porters Five forces model is another technique that helps you to assess the external environment of a company. This framework provides a model that enables organizations to analyze their industry in a way that takes the competitor's activities into account. Finally customers, competitors and industry will be analyzed to have a broad overview of the market.

Once the market is analyzed and taking into account all the results in the analysis I will define the general marketing strategy. By following a marketing strategy choice framework, I will establish value proposition, target customers, route to market, marketing channels, marketing communications and determine marketing mix.

When the product reaches a mature stage, the company will use online resources such as website to sell the home automation system. During the next section I will study digital marketing as a tool of selling. In the early stage of the product a more affordable digital marketing will be carried out such as social media and blogs. However once the product grows and finds a position in the market and the company acquires higher financial resources I will follow an inbound marketing approach in order to perform the digital marketing of the company.

Not only have a good businesses' idea, be hard worker or even have plenty of technical skills is enough to build a start up business. Another very important issue is to have a good financial health and financial power that encourage your company to achieve its goals. In this start up adventure the lack of starting financial resources is a handicap. Thus, next section of the report

will talk over different methods of how to properly finance the start up with no starting financial resources.

At the end of the report I will define the different phases to set up my idea of home automation business. Different stages that the business need to go through from the business point of view but also from the marketing perspective and technical procedures in order to develop a new product and introduce it to the market. For each stage I will define the actions to be carried out in order to achieve stage's objectives. I am going to establish financial action in order to fund the company. I will define marketing strategy depending on the stages. At the beginning based on a local marketing but slowly introduce a more global marketing using inbound marketing framework as we get closer to the commercial phase. Once in the commercial phase define the actions to perform inbound marketing in order to gain customers.

2 IDEA OF BUSINESS

Wouldn't it be great if you arrive home and the lights come on, the door unlocks and the thermostat adjusts automatically? On a hot day, your blinds automatically close and fans cool the house before your air conditioner comes on, reducing your electric bill. You can use your cell phone to check if you left the garage door open and close it if you did. Your cell phone receives a text message if there is water in the basement (Insteon,2016).

According to a market research carried out by Statista,a worldwide market researcher, the forecast value of the global smart home automation market will increase from 4.4 billons dollars in 2013 to 21 billons dollar in 2020 (Statista.com, 2016). Moreover the mobile device industry is increasing rapidly during last few years and everything seems to be controlled from your pocket. My idea of business is merging these two industries in just one. Provide an affordable, reliable, easy to use and modularized home automation system in addition to allowing the customer to control and monitor such a system remotely from anywhere in the world, at any time by from its pocket.

The home automation system will be composed in the main by a hub or controller, which will be connected to the power line in order to supply the system with electricity supply but also to use the power line as a communication network. The hub is also connected to the internet through an external router, this will allow the system to update firmware when an update is available and thus the system will never become outdated. The internet connection will allow the system to be control and monitored from outside the local network in the house if the customer requires this services. The main hub will control all the modules installed in the house such as lighting, switching, heating, cooling, security, monitoring, etc. The hub will allow the customer to control and monitor the modules with a local graphic interface place beside the hub with simples and handy interfaces with the modules.

The modules are easily installable and are communicated with the main hub though power line reliable communication or wireless wide communication in those which are far away from the power line supply. The system can be customized by adding and removing modules, therefore, it can be as easy as a simple switch control or as complex as a full home automation system

with lighting, switching, heating, cooling, security, monitoring, etc. It is up to the customer the complexity of the system they choose.

The system allows remote control and monitoring features from mobile devices such as tablet, phones or laptops. This feature will be a premium package that will enable the user to securely control and monitor its home automation system. The system will have an identification which will enable the mobile device application to connect securely only with the desired system and prevent others to connect and hack your home automation system. The hub and the mobile device application will synchronize each other through internet. The mobile device application will be available for all the most used operating system.

The product will be sold online in the company's website. Both the hub and modules will be available on the website. The modules will be sold separated to allow the client to customize its system as it desires.

3 ANALYSIS

3.1 SWOT

3.1.1 STRENGTHS

- It is essential for a business to succeed it must maximise its strengths. In the one hand the company will sell a technological product which does not require a high starting investment in assets, inventory and neither big premise rents. At the beginning the company will focus on developing and testing the product and these tasks does not require big investment. In the other hand, at a late stage of the startup period when the product is already developed, the system will be sold online in digital shop which does not require investment on premise rents and onsite selling labor expenses.

3.1.2 WEAKNESSES

- At the beginning the startup company does not own high financial resources. All the starting activities will be limited by the little amount of financial resources.
- Unlike other competitors currently in the market, our product it is not yet developed which will take the startup company up to a year to have a physical product on the market but it will not be at the same level as other competitors as they have had time to improve their products while we are just developing our prototype.
- The market does not have knowledge of our brand. It will be an unknown brand by the time it hits the market. This will require that the company strive to perform good marketing activities in order to make known the brand and products.

3.1.3 OPORTUNITIES

- The company must also maximize its opportunities to grow in the market. Home automation has been a luxury product in wealthy houses so far. However the affordability of our product will open a door of the medium class houses. The percentage of medium class house is far higher than luxury wealthy houses. The fact of being an affordable product for almost every pocket will open us the market to a much bigger range and therefore will provide us with many potential customers in the

market. The good thing is that the fact of being affordable will not close the luxury market either.

- Nowadays nearly everybody owns at least one smart mobile device. Therefore, the capability of controlling and monitoring the home automation system from a smart mobile device will give us some advantage over other systems which does not offer this feature. Moreover the people are well used to using technology and will not be afraid to face this new peace of home automation technology.

3.1.4 THREADS

- To survive in the in a competitive market that we are involved in we must protect against threats. The existence of competitors such as the North Americans PROTA, INSTEON or WINK, and the European home automation company UNIPi base in Czech Republic. They all have developed the same or very similar product that the one I have in mind to develop but with the difference that they are in the market for longer and their products are already fully developed. If they detect a market opportunity in the area where I want to start marketing, this fact might become a risk as they will sell their products in the same market as I want to sell my home automation system with the disadvantage that they are already in the market for longer than I am.

3.1.5 CONCLUSION

Despite the fact that the company has low starting financial resources the starting activities will not require a high investment. However we need to find the way to fund the company to boost our economy. The brand is unknown and the product is not yet developed therefore the company has to strive to make the brand known and perform an efficient product development plan in order to combat its weaknesses. Even though the company will face with other big competitors the market is large enough and with favorable conditions which will lower the risk of facing big competitors.

3.2 PESTEL

3.2.1 POLITICAL FACTORS

- The Irish government has been recently formed and it is quite weak. If the government collapses because of this weakness it could dent consumer confident. If consumers do not feel confident on buying the company will notice this on its selling.
- If Brexit eventually comes true the currency will devaluate even more than it is at the moment after the UK vote of leaving the European Union. Therefore this fact would cause our automation system to be more expensive when exporting to UK and will make these exportations more difficult to the company. To sum up, as it would be more expensive for UK customers to buy it would be more difficult for the company to export to UK.

3.2.2 ECONOMIC FACTORS

- If inflation happens in a period of time in Ireland this will directly affect the company as our employees will want a rise in their monthly wages.
- The financial health of the company at the starting stage depends so much on a bank overdraft in order to acquire immediate cash. This fact will depend on the ability and

willingness of banks to lend. This willingness and ability to lend depends on the bank health and the financial resources of the bank. The health of the bank is something that is out of control for the company and can impact so much in the future of the firm.

- If Brexit finally happens there will be an impact in the exchange rate between currencies. For instance, if a system in Euros costs x in sterling would cost for example 10% more but conversely if our company uses Euros wants to buy equipment or stock from UK it would be cheaper. This assumption would drastically change to the opposite if British sterling finally success after few years outside the European Union and the currency become stronger.

3.2.3 SOCIAL FACTORS

- People are becoming more and more computer literate and more technology conscious. As our product is a technology system, the people will be more willing to purchase our equipment.
- Social media is prolific so we will use this tool to advertise the product.
- The trend in internet shopping will allow selling and marketing the product using the web.

3.2.4 TECHNOLOGICAL FACTORS

- With the advances in technology in recent years network coverage has become much more wide spread.
- With the advance in internet technology, this will enable us to own a cloud server at a reasonable cost and provide a high quality web site with very advance features.
- Any global technology improvement will force to update the technology of our product in order to be at the forefront of technology and not to stay behind our competitors' technology.

3.2.5 LEGAL FACTORS

- Make sure all the content in our web site meet all the current regulations and laws and review the regulations in order to keep up to date on legal aspects. Monitor that all the content is inside the legal standards to avoid future problems.
- Keep up to date with radio transmitter laws. Use only on a certain frequency. Use only with a certain power and certain level of emission. Use must not cause undue interference. Use only within a certain geographical area. Use only of apparatus which meets specified requirements.
- Keep up to date with all the European and Irish health and safety legislation.

3.2.6 ENVIRONMENTAL FACTORS

- Our system is design to generate electricity bill savings. If energy cost increases, then the saving percentage of our system will increase proportionally.
- Within our target market catchment area we must have reliable and good quality network infrastructure else the system provided by the company will not be able to be remote controlled from external mobile devices and then this feature will be useless.

3.2.7 CONCLUSION

To sum up, in terms of exportation and external relationships the company must keep an eye to the UK and Brexit situation as it is the closest neighbor. The company must be up to date with all the legal regulations that can impact the normal operation of the company. The advances in technology creates a very good technological condition to deploy our system however, any global changes in those technologies will force the company to update to the latest technology in order to be at the forefront of the current technology. There are favorable conditions in social trends as people are not afraid to use technology anymore and are getting more used to buying online.

3.3 PORTERS FIVE FORCES MODEL

3.3.1 SUPPLIERS BARGAINING POWER

- There are many suppliers within the industry +
- There are many substitutes are available +
- Their product is not critical to the end product +
- The products supplied has a quite similar functionality +
- Our customer might suffer added cost or/and time by changing the supplier -
- We can easily change for another suppliers +
- Supplier are big companies -

3.3.2 BUYERS BARGAINING POWER

- There are a large number of potential customers +
- Each customer will normally only order one system +
- Switching cost for customers are low-
- Home automation is a luxury product -
- The product has differentiation +
- Forward integration +
- Our product offers comfort and control to customers +
- Entry of multiple companies in the market -

3.3.3 COMPETITIVE RIVALRY

- Few competitors +
- Competitors have equal market share -
- Industry grow is very high +
- There is not a fixed cost+
- The product is differentiated+
- Customized product +
- Low switching cost-

3.3.4 THE HREAT OF SUBSTITUTIONS

- Customer switching costs are low-
- The substitute is cheaper than industry product.-
- The substitute features are lower than the industry product+
- Home automation is trending and its products are becoming the substitute of many other products +

3.3.5 THREAT OF A NEW ENTRY

- Economy of scale+
- Experience and knowledge needed+
- It is difficult to attract the first customers, it requires marketing resources +
- There is no monopoly -
- Trending and growing industry -

3.3.6 CONCLUSION

According to the porter five forces results, the bargaining power of customers is expected to increase due to entry of multiple companies in the market. Whereas, the bargaining power of suppliers is expected to remain moderate due to easier availability of necessary equipment. The rivalry within the industry is low at the moment therefore it is a good time to start up the company before the industry grows. Threat of substitutes is low or moderate since the only available substitute to automated systems is human workforce. Although enter in the industry is tempting, it is not easy to enter as it required considerable efforts, knowledge and the right resources. Degree of intersegment rivalry is expected rise higher as numerous players are present in the market and many other players are expected to step in (Allied Market Research, 2016).

3.4 MARKET ANALYSIS

3.4.1 CUSTOMERS

Home automation has been around since Joseph Henry pioneered the electric doorbell in 1831. Ever since, we have loved the idea of having our houses do things for us, making our home environment safer, cheaper to maintain, and hopefully saving us time (diynetwork.com, 2016). Technology is moving rapidly and home automation is becoming a trend nowadays. At the moment home automation is a luxury house complement that only wealthy people can afford however it is a handy item that every owner would like to have not only as a luxury product but also to provide comfort, security, control, electricity savings and why not, be able to control and monitor your house from anywhere just touching the screen of your smart mobile device. That is not luxury that can become in an essential item that every house will have. Something that nowadays looks luxury could become shortly in an essential item in every house if we follow the current trends. In this case not only wealthy houses will use home automation but also medium class house will be involved in the usage of this handy product to provide affordable comfort, security and control to their house with the plus of reducing cost to their electricity bills.

People are becoming more and more computer literate and more technology conscious. As an example, a simple piece of technology such a touch screen was at the top of the technology few years ago from the general people point of view. Nowadays, these touch screen are everywhere and we cannot understand the world without them. In the same way, people are assimilating new technology increasingly as we head to the future.

The same way of the technology assimilation, people are tending to purchase product online on internet shops. A wide variety of second hand products are purchased online such as phones, cars, books, etc. Also many technological items are searched such as audio devices,

computers, etc. Even everyday product like groceries from the supermarket are tending to be more often purchased from home rather than go to the physical shop and get them.

Everybody has a mobile smart device in its pocket from where control as critical things as bank transfers or simple things as booking a hotel room. The idea of controlling your house from your pocket from anywhere in the world would not sound so crazy after all, indeed it would be ideal for many people who work far away from home or spend so much time away. Once this is a feasible option people would go for it.

There are many people who want the product up and running as soon as they get it out from the box, however there are also good few people who like "Do It Yourself" products. This product will satisfy both sides because it is a system that allows the user to play around with it but also it is a very user-friendly for those who do not like to play around that much.

People within the range of our potential customers would go from adults who are already working with an stable live owner of a house or medium class or wealthy families up to bit older people who is technology friendly and who need a bit of control over their houses. This product would suit very well to people with limited mobility because it would allow them to have control over all the functionalities of their house with not handicap.

As a conclusion the product that the company want to offer seems to have a favourable condition from the point of view of its potential customers.

3.4.2 COMPETITORS

One home automation company needs to be highlighted at the moment over the rest of the companies in the remote home automation industry. Insteon is an American company which is operating in the industry since 2005 and although it could be not very well known it is the more advance in the industry so far. It has received very good reviews on the press and media since it was created. They provide a very affordable system composed by a main hub and has more than 200 products available to connect to the system such as sensors, switches, thermostats, cameras. They are the only one who enables double communication between device and the main hub, through power line and wireless, therefore there is no need for extra wiring. It is very easy to use, in terms of the devices they work just plugging and they provide an app for any smartphone or table that uses android, iOS or Windows phone. Even though Insteon deploy a big variety of product it is also associated with strong brands such as Logitech, amazon, sonos or nest what strengthen its potential (Insteon, 2016). Insteon has also developed a hub for apple homekit. Apple is currently entering in the home automation market although it is in a very early stage. Apple has joined to strategic partners such as Insteon who provide to apple homekit with a hub called "Insteon hub pro", which only uses iOS, but also with another strong brands in order to be able to use their gadgets. Although it would be potentially more expensive than other brands, apple is a very prestigious brand and has worldwide recognition. They have a limitation because it can only be used with iOS although it will enable voice control using "Siry" software. As a sum up, despite the fact that the Apple homekit is at a very early stage, they have the resources to boost the product and be at the top of the market in a very short period of time.

A part of these two very strong and powerful competitors there are another brands that have developed similar products and are already in the market. Indigo and Universal devices are marketing a similar hub with the difference of few features. The following table shows a comparison between hubs features. Although the features are similar, the price is higher in the case of ISY Series, the hub of Universal devices. Insteon has better compatibility with operating systems and it is also more user-friendly as well as very affordable as Indigo.

General Features				
	Insteon Hub (2242-222)	Insteon Hub (2245-222)	Indigo	ISY Series
Add By ID	✓	✓	✓	✓
Conditional Triggers	-	-	✓	✓
IP Camera Support	✓	✓	✓	-
IR Support	-	-	✓	✓
Insteon Scenes	✓	✓	✓	✓
Basic Schedules	✓	✓	✓	✓
Elaborate Schedules	-	-	✓	✓
Price	\$129	\$79	\$89-179	\$285-359
Alert Support				
Email Alerts	✓	✓	✓	✓
Push Notifications	✓*	✓*	✓	-
Text Message Alerts	-	-	-	✓
Conditional Alerts	-	-	✓	✓
* Push Notifications Not Currently Available On Windows Or Windows Phone Apps				
Platform Support				
iOS	✓	✓	✓	✓
Android	✓	✓	Browser	✓
Mac OS X	Browser	-	✓	Browser
Linux	Browser	-	Browser	Browser
Windows 8	✓	✓	Browser	Browser
Windows Phone 8	✓	✓	Browser	Browser
Insteon API	-	✓	-	-
Installation & Configuration Difficulty				
Difficulty				

Figure 1: Hub features cooperation between Insteon, indigo and ISY Series (Insteon, 2015)

The following table compares competitors the home automation system itself of several competitor. These companies have already in the market similar modularized home automation product, each one with different characteristics. Even though Insteon is the most complete system and provides more features than the rest, there are others competitors to take into account such as smartThings which is the home automation line products of Samsung or Wink which offer also a very good product. But also Lowes Iris is important in this list, this company provides a free plan and a premium plan to allow more or fewer features in the smart device app. Prota is a young and currently growing Korean company who is developing a very similar product.

	Insteon	Wink	SmartThings	Lowes Iris	WeMo
Climate Control	✓	✓	✓	✓	-
Drapery Control	✓	✓	-	-	-
Energy Monitoring	✓	✓	✓	✓	✓
On/Off Wall Switch	✓	✓	✓	-	✓
Dimming Wall Switch	✓	✓	✓	-	✓
LED Bulbs	✓	✓	✓	✓	✓
Low Voltage & Custom Devices	✓	-	✓	-	-
On/Off Plug-In Module	✓	✓	✓	✓	✓
Dimming Plug-In Module	✓	✓	✓		
Motion Sensor	✓	✓	✓	✓	✓
Water Leak Sensor	✓	✓	✓	✓	
Smoke And CO Detection	✓	✓		✓	✓
WiFi Cameras	✓	✓	✓	✓	✓
Adjustable Ramp Rates For Dimmers	✓	-	-	-	-
Customizable On Levels For Dimmers	✓	-	-	-	-
Multi-Device Scenes	✓	✓	-	-	-
IOS App	✓	✓	✓	✓	✓
Android App	✓	✓	✓	✓	✓
Windows Phone App	✓	-	✓	-	-
Windows 8 App	✓	-	-	-	-
Communication	Radio Frequency + Powerline	Radio Frequency	Radio Frequency	Radio Frequency	Radio Frequency
Technology	Insteon	WiFi, ZigBee, Z-Wave, Bluetooth LE, Lutron ClearConnect	WiFi, ZigBee, Z-Wave	Z-Wave	WiFi
API	✓	✓	✓	-	-

Figure 2: System features cooperation between Insteon, wink, smartThings, Lowes Irish, WeMo (Insteon, 2015)

All these huge companies are not competitors at the early stage of our start up but it is something to take into account where the market is growing and also it should make us learn from them as they have already walked longer way in the industry than we have. This analysis will be useful to decide the direction of our development.

3.4.3 INDUSTRY

Regarding the industry research I have used a professional opinion in order to have an overview of the industry status. I have obtained the following market research information from the website of "Allied Market Research" which is a market research multinational firm that provides market information from many different fields. A full market researching report costs more than seven thousand Euros but for this matter, I can get an overview for free and it gives us a good starting point to develop our marketing plan.

"Home automation is automating home activities by using intelligent terminals to control home equipment. Home automation includes but not limited to centralized control of lighting, security features for home, HVAC control and others.

An automated home provides numerous benefits to end-user such as reduced energy spending, security from theft and protection from unauthorized access to a home. The solutions are gaining popularity among enterprises in order to protect their commercial assets such as buildings, hardware infrastructures and others. The market is driven by increasing demand of energy efficient solutions and rising security concerns. The market faces limitations due to high cost of automated homes. The growth opportunities of home automation market are due to increasing adoption of automated services, and government incentives for green initiatives.

From applications perspectives, market is classified into segments such as lighting, safety & security, entertainment and energy management. About a year ago, safety & security applications market share exceeded the market share of entertainment applications. This is due to rising security concerns among masses. With increased consumer spending on luxury items, HVAC and energy management services adoption is expected to increase.

According to deployment technologies market is categorized into technology types such as wired, power-line, wireless and computing networks. Wireless market is further classified into Wi-Fi, Zigbee, Z-Wave, KNX and others. Wireless technology is expected to continue driving the market in future due to low set-up cost. Among available wireless technologies, Zigbee, Z-wave and KNX are driving the market.

Based on types of services, the market is classified into luxury, do it yourself (DIY), mainstream and managed services. Till date, market is dominated by luxury services due to expensive deployment of technology. Eventually market is expected to experience growth in adoption of mainstream and managed services due to entry of telecom operators in the market.

Geographically, market is segmented into regions such as North America, Europe, Asia-Pacific, Middle East & Africa and Rest of the World (RoW). North American region is leading the

market and is expected to retain leadership over the forecast period on account of dominance of the US market. The developed market ecosystem and acceptance of luxury services are driving the growth in the US market.

To penetrate into the home automation market, companies are adopting expansion strategies. For example, Zigbee has invested on customizing home automation products in order to target government and utilities market". (Allied Market Research, 2016)

4 MARKETING STRATEGY PLAN

4.1 VALUE PROPOSITION

ASD Home automation system offers local and remote control, security and energy savings to the customer over their houses in a very affordable and easy-to-use way.

ASD home automation system is designed to enable the user to control their house both locally from inside the house via touch screen interface connected locally with the system and remotely from anywhere in the world via smart mobile device application synchronize with the ASD home automation system in their house using a very private and secure cloud connection.

ASD also provides security to the house user since the system allows CCTV camera integration and security sensors such as presence sensors, open door sensors and control over locks. All these features can be control and monitor from anywhere in the world.

ASD home automation is an energy efficient system. It allows the users to decrease their electricity, gas, oil. This energy saving will impact in green benefits for the environment and economical benefits for the user.

ASD product are very customizable, the system allows loads of different combinations which make the system suitable for different home automation solutions. It gives the user the possibility to control the system remotely from anywhere using the mobile devices app but it also allows local control for those who do not require remote connection both ways with a very user-friendly interface. Modules can easily be added to the system with no limitations therefore the user can freely decide the size and the functionality of the ASD system.

4.2 TARGET CUSTOMERS

ASD System is not only design as a luxury product for wealthy houses but it is also design for middle class houses because of its affordability, energy efficiency and more features that the system offers such as security, monitoring and control. These features are not luxuries but instead they are features that everybody deserves regardless of their financial power. ASD is targeted to all of those middle class houses because of its affordability and convenient features but it also targets high class houses because it can be use as a luxury product even thought the product price it is not at the luxury level.

ASD home automation system is suitable for middle and high class families to provide security, energy savings and local and remote control to their house. Although these families as the core of the target market the system is very convenient to other targets such as limited mobility people or elder people. In this case the system will allow the user to gain control over their house without personal assistance. Another target market is business building in which the system can provide security features with cameras, presence sensors or open door sensors as well as provide to the company to energy savings and therefore economic savings. . The fact that the all control of the building is centralised and automated in one platform which will allow the company to control their buildings efficiently and providing them time savings and energy savings.

To end up, the luxury home automation sector is still in our target market as the system provides comfort and luxury features such as lighting, blinds and shades control among others.

4.3 ROUTE TO MARKET

The route to the market will be carried out in two different phases as I will describe in the last section of this report. In the first phase or development phase which will begin after the first prototype of the product is developed and released. In this phase the company will choose a more local route to market by using third parties companies such as heating, cooling, lighting, o security installers to reach the first customers in the market. To achieve so, the company will use selling agents to introduce the product to installing third party companies. The objective of this selling route choice is to use the general trust on these installation technicians to convince the market to use ASD system in the premature stage of the product and slowly build product awareness and trust at the same time that the product is tested and improved with the first customers.

Although the company will keep using third party installation companies to spread out the product, the route to market will focus on e-Commerce in the following commercial phase. The key points to move to the next stage is to reach maturity in the product by having tested the system with early customers, having fixed bug and improved the product and having released the first version of the end product. In this second phase the product will be sold online on the company website by deploying inbound marketing methods in order to attract, convert, close and delight customers using online resources. Alongside this, in a more advance stage the company will use third party e-Commerce websites in order to route the product to market from different points.

4.4 THE MARKETING MIX (7PS)

4.4.1 PRODUCT

The product offers not only a very easy-to-use and affordable home automation system but it also offers a remote connection with the home automation system from anywhere in the world from a smart mobile device in order to control and monitor your house. This feature has many benefits our potential audience and at the moment it is no massively cover for the rest

of the competitors that operate in our target area. Furthermore, the system will be sold online in single modules which makes easy and affordable to buy. Another good property of the product is that uses the existing house wiring and wiring communication so it does not require big wiring installations.

4.4.2 PRICE

Although the product will be sold at an affordable price it will be to be able to spread the target market to a bigger range of houses, not only the wealthy ones, the profit margin have to be reasonable in order to allow the company to grow. In this case what this company intent to reach with this product is enough high quality in order to make the market willing to pay a bit more for a trustworthy product. After the appropriate price study the product will be around these prices. Modules such as switching, lighting, heating, etc will be set from €50 to 100€. The main hub will be priced around €200 with the option of adding a touch screen system interface for another €100 more. The remote connection app is an optional feature and will be set as a monthly basis paying at a price of €10 month with an idea in mind, if people pay €10 to listen music from internet from their smart mobile devices, would not they pay €10 to have full control over their houses while they are away? The trick is to create the need, after the price will be seen as normal.

4.4.3 PROMOTION

At an early stage of the product the promotion of the system will be carried out by third parties companies such as heating, cooling, lighting, or security installers to reach the first customers in the market. Afterwards, the company will market the product using eCommerce through website shop and will use inbound marketing to attract, convert, close and delight customers as it will be defined in the following section.

With ASD brand we want to deliver the idea of simplicity by creating a intuitive local interface with the system, straightforward use of the mobile device app and a simple website shop.

4.4.4 PLACE

Although at the first phase of the product development the system will be sold more locally thought third parties installations companies in order to build trust and awareness the system is meant to be sold online. Internet is in everybody hands nowadays and it is open 24/7. By developing a good digital marketing you can reach easier to your target market that a physical shop. Moreover, online shopping is becoming more and more popular.

4.4.5 PEOPLE

The aim of the company is to have customers happy. If customers are happy and satisfied with the product and service they are likely to tell others about the product. Investing in keeping clients happy, is investing in marketing communication.

In order to maintain this feeling of happiness among the customers the company will provide adequate online customer services and for further technical issues a service of technical support on site.

4.4.6 PROCESS

As of the commercial phase of the start up settlement, the company will deploy inbound marketing, which is a holistic, data-driven approach to marketing that attracts individuals to

the brand and convert them into lasting customers. This process is composed by different techniques to attract strangers to the brand and they will become visitors. Try to convert those visitors into leads through several inbound techniques. Close those leads into customers after their first transaction. And finally delight those customers to turn them into promoters.

4.4.7 PHYSICAL EVIDENCE

Customers evaluate brands not just on the basis of the actual product or service delivered, but on the total end-to-end package. In our case ASD system wants to transmit simplicity by delivering a straightforward product which does not have many buttons and settings and it only requires plug and play. Operating instructions will be brief and clear. In terms of the website, it will deliver a clear message with modern and basic styles. The content will focus on images with brief and clear descriptions rather than sophisticated contents with big tests.

4.5 MARKETING CHANNELS

The company will follow inbound marketing channels. Channels such as create blog content, search engine optimize the company content and promote the content on social media will be used in order to get more traffic. Other inbound marketing channels will be used in order to convert traffic into leads such as place call to action throughout the website to drive visitors to landing pages with forms, visitors will fill out the forms to get what the company is offering and then will become leads. In terms of closing leads into customers the marketing department will send automated emails to the leads to drive them along our buying cycle and will provide to our selling team with lead intelligence so they can make more effective sales calls.

Inbound techniques are more effective than outbound activities. Attracting inbound channels generate more leads than abusive outbound channels. Inbound leads cost less than outbound leads. Moreover, inbound channels are cheaper than outbound channels. Therefore the relationship cost/leads is more profitable by using inbound channels.

There are so many channels and so many tools for each channel. Trying to manage a campaign across all those different channels could take a lot of time and resources and this lowers effectiveness. For this reason I have decided to use all-in-one software from Hubspot which includes all the resources for inbound marketing and marketing automation. Hubspot is an integrated platform that offers all the needed tools in one place which will be very useful to implement an inbound marketing without wasting time. Even though the premium plan costs 2200€, there is another basic package for 185€ a month designed for start up with low budget, I believe it will be well worth it if we get the most out of it by beginning with the basic plan.

4.6 CONCLUSION

This marketing choice will mark the marketing direction of the company. It is important to have all the points clear and communicate the marketing strategy throughout the company personnel. To achieve such a challenging task we will implement the business model Canvas, the Business Model Canvas (Osterwalder, 2016) describes your business model in one page that makes easier the marketing strategy communication. It is a strategic management and entrepreneurial tool. It allows you to describe, design, challenge, invent, and pivot your business model.

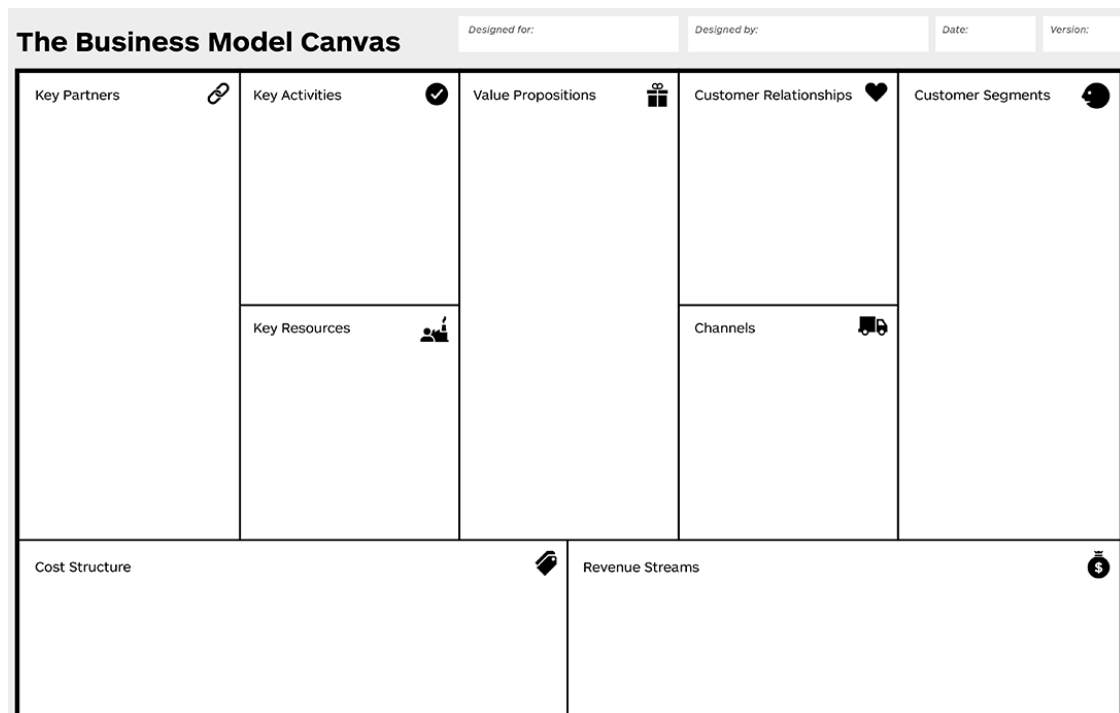


Figure 3: The business model canvas from Alexander Osterwalder

5 DIGITAL MARKETING

Inbound marketing is about using marketing to bring potential customers to you, rather than having your marketing efforts fight for their attention. Sharing is caring and inbound marketing is about creating and sharing content with the world. By creating content specifically designed to appeal to your dream customers, inbound attracts qualified prospects to your business and keeps them coming back for more.

By publishing the right content in the right place at the right time, your marketing becomes relevant and helpful to your customers, not interruptive. Now that's marketing people can love (Prendergast, 2016).

Content is the most important in inbound marketing, without content, inbound would not exist. Content fuels the inbound methodology. If we create the right content, we will effectively attract our ideal visitors to our site and convert them into leads and close them into customers. However content cannot be found if it is not in the right place and the right place is where our ideal customer spends time. Moreover, inbound empowers buyers to buy when they are ready, then, providing content at exactly the right time builds trust and makes your marketing approach relevant and helpful.

When attracting strangers, we do not want just any traffic to our site, we want the right traffic. We want the visitors who are most likely to become leads.

Inbound marketing starts with blogging. A blog is the single best way to attract new visitors to your website. In order to get found by the right prospective customers, we must create educational content that speaks to them and answers their questions.

Your customers begin their buying process online, usually by using a search engine to find something they have questions about. So, you need to make sure you are appearing when and where they search. To do that, we need to carefully, analytically pick keywords, optimize our pages, create content, and build links around the terms your ideal buyers are searching for (HubSpot, 2016).

Successful inbound strategies are all about remarkable content - and social publishing allows you to share that valuable information on the social web. Creating the content is only a small piece of the puzzle. You need to be attracting new and returning readers by sharing and promoting your content on social media. Ensuring the content reaches relevant people is where social comes in. Nowadays, almost everybody is on social media, whether it be Facebook, Twitter, LinkedIn, etc. Our audience is likely on multiple of these channels.

Our website page is our digital storefront. So we have to put our best face forward. Optimize the website to attract our ideal buyers and transform your website into a beacon of helpful content to entice the right strangers to visit your pages. We can achieve this task by creating a blog, by creating guides, e-books, and other downloadable content, by gathering customer testimonials and create case studies, etc.

Once we have attracted website visitors, the next step is to convert those visitors into leads by gathering their contact information. In order to convert visitors into leads, they must fill out a form and submit their information. We must optimize the forms to make this step of the conversion process as easy as possible. Another way is by creating Calls-to-action, these are buttons or links that encourage our visitors to take action. Moreover we can use landing pages on your website that fulfil the call-to-action and offer something of value to visitors.

We have attracted the right visitors and converted the right leads, but now you need to transform those leads into customers. Certain marketing tools can be used at this stage to make sure we are closing the right leads at the right times. We will use Hubspot Marketing automation software. Marketing automation refers to the software that exists with the goal of automating marketing tasks such as emails, social media, and other website actions. The technology of marketing automation makes these tasks easier. Marketing Automation is a process that involves lead nurturing tailored to the needs and lifecycle stage of each lead.

The Inbound way is all about providing remarkable content to our users, whether they are visitors, leads, or existing customers. Inbound marketing tasks continue to delight current customer base into happy promoters of the organizations and products they love. The best way to figure out what your users want is by asking them. Use feedback and surveys to ensure you're providing customers with what they're looking for. Provide your existing customers with remarkable content tailored to their interests and challenges. Help them achieve their own goals, as well as introduce new products and features that might be of interest to them.

6 FUNDING

Due to limited initial financial resources and the high costs of starting up a company, the start up will need outside financial resources to succeed. One way of finding this outside financial resources is through government grants. Enterprise Ireland is the state agency responsible for supporting the development of manufacturing and internationally traded services companies. Enterprise Ireland provides funding and supports for companies from entrepreneurs with business propositions for a high potential start-up. Enterprise Ireland offers support for business in their development stage, with the program High Potential Start-Up (HPSU). HPSUs are start-up businesses with the potential to develop an innovative product or service for sale on international markets and the potential to create 10 jobs and €1m in sales within 3 to 4 years of starting up (Enterprise Ireland, 2015). The investment decision and level of investment by Enterprise Ireland will be determined following an assessment of the business plan and supporting evidence, and based on the company's viability, growth potential, potential value to the Irish economy in terms of number and quality of jobs created and exports generated, level of risk, quality and innovative aspects of the business plan, etc. We need to strive to meet their requirements in order to apply for this grant when the fund is needed.

Raising capital will be a challenging task for the company in these first stages, but fortunately, we have more than one option for getting the funding we need. Seeking out angel investors has its advantages, but crowdfunding is redefining start up funding nowadays. Angel investor is a high-net-worth individual who has an interest in helping new companies expand. The idea here is that once the company becomes profitable, the angel investor can sell their shares for a profit. Angel funding is not a loan, instead they are risking their money by banking on the company increasing in value over time. Moreover, Angel investors can provide more than just money. However get funded by an angel investor may be more pressure to succeed and also angel investors receive a certain amount of equity in exchange for providing funding to the startup.

In the other hand, crowdfunding is a way of getting funding for our business venture from the 'crowd' or the general public. Once the pitch is on a crowdfunding platform such as Kickstarter (pledge based), Seedrs (equity based) or SoMo Lend (loan based) among others, we will be able to get funded from literally anyone from around the globe. The company will offer the investor something in return too and this could be anything from a small stake in the business to a membership, or novelty product. Even though fundraising using this method is not unlimited (1 million a year) and fees can be expensive, crowdfunding offers many others advantages. For instance funding doesn't have to be equity-based, attracting investors may be easier and can be used as marketing channel to reach the market.

To sum up, before we go out to seek funding, whether that is from an angel investor, a government grant or through a crowdfunding platform, before we meet them we need to prepare a complete and timed business plan with a final goal, carry out market research, financial model for the start up, evidences of potential customers, real ability of handling the first stages of development, possession of existing investment, development of our brand and a reward for the investment.

7 NEW PRODUCT DEVELOPMENT AND COMERCIALIZATION PHASES

7.1 CONCEPT PHASE

7.1.1 INVESTIGATION STAGE

This first stage is the so-called “fuzzy front end” (Koen et al., 2011) and it is defined as the period between when an opportunity for a new product is first considered, and when the product idea is judged ready to enter “formal” development. Hence, the fuzzy front end starts with the home automation business idea, and it will end with the firm deciding to launch a formal development project or, alternatively, decides not to launch the project.

First step in this stage is the technical analysis where we analyze the uniqueness of the product and its features. We develop an analysis of communications technologies for the hub-module communications and the remote connections technologies between the mobile applications and the hub installed in each house. We carry out a study of all the license agreements for software and technologies as well as technological restrictions.

A parallel step is the market needs assessment. Here we identify if the product meet a market need or solve a problem. In order to achieve such market background research we perform a market overview, identifying prices structures, market barriers, risks, market channels trends and competitions. The resources used in this step are internet, trade articles and industry representatives.

Venture assessment is the next step in terms of business point of view. This stage is funded with personal finances and will study if the new venture will make profit by identifying the capital needed for the new adventure as well as the professionals needed to carry out the project during the first new product development stages. We conduct a self, venture and commercialization assessment and estimate the profit potential of the business.

7.2 DEVELOPMENT PHASE

7.2.1 FEASIBILITY STAGE

This is the first stage during the process of developing a new product for the market. This type of development is considered the preliminary step in product and service development and involves a number of steps that must be completed before the product can be introduced to the market.

The first step that must be completed is the technical feasibility step. In this step we analyze what are the total cost associated with producing the home automation system and the resources needed to develop the remote connection using the mobile application. The objective is to develop a working model of the automation system and the applications. In order to accomplish such a deliverable we test all the technology and develop and finalize an Alpha design.

In this step I associate to a partner who helps with technical developments and provides seed financial resources in order to finance this first stage of the development phase and share the technological analysis and development.

Next step is the market study where we identify the best way to get to the customers and best path to sell the product. A full marketing analysis is the marketing deliverable for this stage. We identify and quantify market size, industry, customers and competitors. Enterprise Ireland offer to all its clients a free market research service, therefore we start being enterprise Ireland at this stage so we can benefit from this market research for free and develop our own market research using this information available.

In terms of business point of view we analyze the economic feasibility where we study if this opportunity generates sufficient return to justify the investment. The objective in term of the venture view is to develop a financial model accurately representing the business opportunity that is used on funding negotiations. We also identify different ways of getting funded such as crowdfunding, angel investors and enterprise Ireland funding.

The key point of this stage is to identify if the product is feasible. If it is finally feasible technically speaking and it also make economic sense then we will go to next development stage.

7.2.2 DEVELOPMENT STAGE

This next stage is the development stage and consists on putting into practice all the thought made in the previous two stages by developing a technical prototype, marketing plan and business plan.

First step in this stage is the engineering prototype. We develop a beta prototype of the full system for field test composed by the hub or main controller, the mobile application and the first 2 modules which will be a generic switch module to power on and off end devices and a security module composed by camera, door-open sensor, and presence sensor. These two modules are the first because they are generic and convenient and useful and meant to create a big impact in the market, further modules are slowly created in following stages. We adapt the system to work with other brands such as nest, Insteon or Homekit from apple which are currently in the market in order to offer full functionality even though we develop only two modules at the moment.

The next step is the strategic market plan which has as an objective to develop a full marketing plan and choices regarding the marketing analysis performed in previous stages. We negotiate with early adopters to field test the system and get feedback in order to retro feed the design and improve to be finalized in the next stage.

From the business perspective, we work and finalize a full business plan which is used together with the beta prototype, the marketing plan and the financial feasibility to negotiate with new financial resources such as crowdfunding and angel investors and Enterprise Ireland funding programs.

The key points to take the company to the next level is to create and test a beta version of the system, develop a marketing plan and business plan and get fund from crowdfunding and angel investors as I specify in the funding segments. If these tasks are accomplished we can go to next stage and introduce the product to the market.

7.2.3 INTRODUCTION STAGE

The introduction stage is the first stage where we hit our potential market what means that we start building our brand and image.

First step in this stage is the pre-production prototype where we complete a limited production of the commercial version of the system and test for performance and reliability by performing demonstrations. During this stage we design and develop the website that is used to sell the product online and as an instrument of the inbound marketing activities.

From marketing perspective we perform a market validation analyzing and quantifying sales. We use third party installing company as a marketing channel to reach the market. We start the negotiation with these types of firms by introducing them the product and giving them some benefit when using and advertising the system. We introduce our first two generic, useful and convenient ASD modules and in addition we give the customer the option to use other brands to provide full functionality to ASD automation system. The objective in this stage is to sell 50 systems and start our contact list with a target of 100 private contacts and 20 installing company. At the end of the stage we survey customers in order to refine marketing plan if it is needed.

In this stage is when the venture becomes a start-up enterprise. This stage is funded by crowdfunding and angel investors what allow us to hire professionals required to start the commercial phase. We also start further negotiations with Enterprise Ireland in order to apply and get funded by High Potential Start-Up (HPSU) program offered in their website which secure our first stage of the commercial phase.

The key point in this stage that makes us go ahead with the business is to achieve the target sales and detect positive market receptiveness of the version 0 of the system. Moreover by the end of this stage the website must be fully developed.

7.3 COMERCIAL PHASE

7.3.1 GROWTH STAGE

This is the first phase of commercialization of the product in which we introduce the new product and the production method into the market. The commercial launch of a new product is the final stage of the new product development. This is the phase where the most money has to be spent for making the product known by performing good inbound marketing activities and other marketing efforts.

In technical matters, this is the production step where we develop a dependable, reliable and optimized production process. This requires a considerable financial investment on the part of the start-up finances that is covered with the Enterprise Ireland High Potential Start-Up (HPSU) grant and the previous angel investors and crowdfunding financial resources. We also finance this production phase from our sales by negotiating with customers to pay in front and delay as much as possible the payments to suppliers. We finalize the first commercial design Version 1.0 and conduct a full production. Even though we launch only 2 modules from our system in this stage we develop more modules such as cooling, heating, blinds, etc. We develop a technical support system through the website.

From marketing perspective, this is the sales and distribution step in which the main objective is to grow in sales. In order to accomplish such a challenging task we integrate inbound marketing activities in our marketing schedule. These inbound marketing activities are supported by the basic package of hubspot software. In this stage marketing is based on attract strangers, convert those strangers into leads, and close those leads into new customer. Even though we focus on digital marketing, during this stage we still deal with installers in order to reach the market from a reliable source. We start introducing new modules and deploy a bigger range of product in the website.

From the business point of view we must achieve our business plan objectives. We arrange the finances by closing the negotiations with enterprise Ireland to get the grant and be able to finance the first and expensive start-up stage. We monitor the financial health in order to be realistic in the company financial capabilities.

7.3.2 MATURITY STAGE

We technically have to support the product in the maturity stage. We support the product by improving the technical online support and customer services. We improve the hardware and develop software improvements. Any new software version updates are carried out online so that the system does not become obsolete. We design and develop more modules in order to cover most of the house automation needs for further release. We also develop a home automation for business line more powerful and with different features as well as more expensive in order to create market diversification to a business line such as laboratories, factories, shops, etc.

The marketing team initiates the marketing diversification strategy, they also introduce to the market new modules for the existing home automation system. We upgrade hubspot software to the pro version that despite the fact it is more expensive it provides more features to perform a better inbound marketing. Inbound marketing at this stage not only is in charge of attracting, convert and close but also to delight existing customers.

The bottom line of the report comes up in this paragraph. In this stage we seek to reach business maturity, in other words if the business is generating a return on investments. The key point in this stage from business perspective is to analyze the company current finances and see if the enterprise has reached an auto sufficient stage where can be funded from its own financial resources and not from outside. At this stage, liabilities have to be paid off and further profits needs to be invested.

8 SCHEDULE

STAGES/MONTHS	6	12	18	24	30	36	42	48	54	60	66	72
INVESTIGATION												
Technical analysis												
Market needs assessment												
Venture assessment												
FEASIBILITY												
Technical feasibility												
Market study												
Economic feasibility												
DEVELOPMENT												
Engineering prototype												
Strategic market plan												
Strategic business plan												
INTRODUCTION												
Pre-production prototype												
Market validation												
Business start-up												
GROWTH												
Production												
Sales and distribution												
Business growth												
MATURITY												
Production support												
Market diversification												
Business maturity												

9 CONCLUSION

This report tries to develop one way of building an idea of business in the home automation field and introduce it to the market in until a maturity stage of the commercial phase in which the company objective is to have positive economic benefits.

Even though the beginning is messy and unclear, “fussy front end”, we just have to make our mind first and begin by analyzing internal and external aspects. Develop a good market research as well as analyzing customers, competitors, industry and suppliers are critical in order to choose our marketing strategy plan.

Although I suggested implementing a local marketing during the development stage, I decided to deploy inbound marketing activities during the commercial stage. Inbound marketing is about using marketing to bring potential customers to you, rather than having your marketing efforts fight for their attention. Sharing is caring and inbound marketing is about creating and sharing content with the world. By creating content specifically designed to appeal to your

dream customers, inbound attracts qualified prospects to your business and keeps them coming back for more (HubSpot, 2016).

As everybody knows, a company is nothing without economic resources. For this reason is why I specified during the report different ways of getting fund to support the financial health of the company without borrowing money from the bank. Crowdfunding, angel investors and government resources are some of the methods suggested in the report. These methods have some advantages and disadvantages but definitely are among the most successful one of getting found.

In order to reach a maturity stage we need to go through three phases in terms of business, marketing and technical development. These phases are the concept phase, the development phase and finally the commercial phase in which the main objective is to generate profits. Although we set deadlines for each stage, it is important to meet objectives to go from one stage to the next. Another critical fact is to analyze the success of the project after each stage. This assessment works as key point to either go ahead to next stage or instead, realize ourselves that the project actually will not work out. In this unfortunate case the best option is withdraw ourselves at the right time.

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