

**INTELLIGENT AIR CONDITIONER SYSTEM:
MARKETING PLAN AND PRICING STRATEGY**

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INNOVATOR
INTELLIGENT AIR CONDITIONER SYSTEM:
MARKETING PLAN AND PRICING STRATEGY

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ABSTRAK

Innovator ditubuhkan pada tahun 2008 oleh tiga orang penuntut Tekno-keusahawanan Teknologi Maklumat dari Universiti Sains Malaysia. Innovator memperkenalkan satu produk yang mampu meningkatkan gaya hidup masyarakat kini serta membantu pelanggan perniagaan kecil menjimat kos penggunaan sistem penyaman udara. Produk ini ialah Sistem Penyaman Udara Pintar – “Intelligent Air Conditioner System” (ICONS). ICONS dicipta dengan menginterasikan deria pergerakan, deria kawalan suhu dan kawalan pelbagai input dimana keseluruhan proses dikawal oleh perisian Teknologi Kepintaran Buatan (A.I.) yang dipasang dalam sesuatu komputer. ICONS berupaya menghidupkan penyaman udara sebaik sahaja deria pergerakan menjejaki kehadiran seseorang yang memasuki bilik dan mematikan penyaman udara tersebut sebaik sahaja orang terakhir meninggalkan bilik itu. ICONS juga berkebolehan mengubah suhu penyaman udara dalam mengimbangi suhu mengikut kepadatan orang dalam sesebuah bilik. Innovator mensasarkan pengguna persendirian dan perniagaan kecil dengan saiz pasaran berjumlah 522,410 unit bagi tahun 2010. Innovator memulakan perniagaan bermodalkan RM150,000 sumbangan pihak pengurusan. Innovator bercadang menyertai pertandingan Pelan Perniagaan anjuran MDeC bagi memperolehi tambahan RM150,000. ICONS akan dijual pada harga RM350 seunit berdasarkan strategi harga hasil analisa pasaran melalui kaji-selidik yang dijalankan. Ramalan jualan bagi tahun pertama adalah dalam anggaran 1,200 unit. Pada tahun kedua, ramalan jualan adalah 2,400 unit dan 4,800 unit bagi tahun ketiga. Bagi tiga tahun pertama, jangkaan pendapatan Innovator adalah sebanyak RM2,940,000. Satu penyelidikan telah dijalankan untuk memastikan sasaran harga bagi ICONS, sama ada keputusan pembelian

ditentukan oleh harga barang, sama ada atur cara e-pasaran lebih sesuai berbanding dengan atur cara pasaran biasa dan sama ada jualan bagi penyaman sejuk udara akan meningkat dalam jangka masa enam hingga dua belas bulan. Soal selidik yang berbentuk 22 soalan ditujukan kepada 150 sampel dan sejumlah 109 sampel memberi maklumbalas selepas 3 minggu. Dalam analisa kaji-selidik terdapat 54% responden memilih RM350 sebagai harga jualan bagi ICONS. 46% responden setuju bahawa harga barang menentukan keputusan pembelian. 44% responden memilih atur cara e-pasaran sebagai kaedah yang terbaik untuk penyampaian informasi dan promosi produk. Keputusan soal-selidik menunjukkan 57% pengguna persendirian and 72% perniagaan kecil merancang untuk membeli penyaman sejuk udara dalam masa enam hingga dua belas bulan.

ABSTRACT

Innovator was founded in 2008 by three Information Technology Technopreneurship students from Universiti Sains Malaysia. Innovator introduced a product that is able to improve people's lifestyle and to help small businesses to save cost in their usage of the air conditioner. The product offered by Innovator is an Intelligent Air Conditioner System (ICONS). The ICONS box consists of two motion sensors, a temperature sensor, and a multi-input controller. The box will be controlled by an Artificial Intelligence Technology software installed in a personal computer. ICONS is able to switch on the air conditioner when the two motion sensors detect someone entering a room. It will also switch off the air conditioner when the last person leaves the room. ICONS is also able to adjust the air conditioner temperature according to the total number of people in a room. Home users and small businesses are the targeted market segment for Innovator with a forecast market size of 522,410 units in 2010. Innovator is getting RM150,000 startup fund from the management team. Innovator is planning to participate in the business plan competition organized by MDeC to secure an additional RM150,000 pre-seed fund to support the operations of the company. ICONS is targeted to sell at RM350 per unit base on the pricing strategy. The sales projection for the first year is 1,200 units, for the second year is 2,400 units and for the third year is 4,800 units. In the first three years, Innovator is projected to have RM2,940,000 in total sales revenue. A research has been carried out to determine the acceptable price for ICONS, if the selling price influences the purchase decision, whether e-marketing program is preferable to the ordinary marketing program and the potential of air conditioner sales is in the increase for the next six to twelve months. A 22 questions questionnaire was sent out to 150

samples. A total of 109 responded after 3 weeks of sampling. In the analysis it was found that 54% of the respondents selected RM350 as an acceptable selling price for ICONS. 46% of the respondents agreed that the selling price influence the purchase decision. 44% answered that e-marketing program is preferable to the ordinary marketing program. The survey also indicated 57% of home user and 72% of office user is planning to purchase the air conditioner in the next 6 to 12 months.

1.0 EXECUTIVE SUMMARY

Innovator was founded in 2008 by Lau Teng Lye (Lau), Ching Yee Khim (Ching) and Lim Seng Chee (Lim). Lau is the Chief Executive Officer (CEO) for Innovator and he is also leading the research and development division (R&D) in the company. Ching is heading the Marketing and Finance Division while Lim is the head for Technology Division. Innovator came up with this business idea to introduce the Intelligent Air Conditioner System (ICONS) when the co-founders were doing their IT Technopreneurship degree in Universiti Sains Malaysia (USM).

ICONS is a solution for customers that have already owned an air conditioner and a personal computer. The ICONS box consists of two motion sensors, a temperature sensor, and a multi-input controller. The box will be controlled by a software developed using the fuzzy logic algorithm of the Artificial Intelligence Technology. This software is installed in a personal computer. ICONS is able to switch on the air conditioner when the two motion sensors detect someone entering into a room. It will also switch off the air conditioner when the last person leaves the room. ICONS is also able to adjust the air conditioner temperature according to the total number of people in a room. These features of ICONS will contribute to a 15% savings to its users.

Air conditioner had become common electronic appliances nowadays with an affordable price and good features. There are estimate 1,511,276 units of air conditioner sold by the year of 2020 in Malaysia (Masjuki, H.H., Mahlia, T.M.I. and Choudhury, I.A. 2002) and the market is growing every year. In 2005, a total of 516,855 companies in Malaysia were registered as a small business company and it is equivalent to 98.8% of the total number of companies that was established in Malaysia (Abdullah, M. A. and Ab. Manan, S. K. 2008). The market share for personal computer is at 5% year on year

growth for home users and small businesses (IDC, 2009). Home users and small businesses are the targeted market segment for Innovator with a forecast market size of 522,410 units in 2010.

Innovator is getting a total amount of RM150,000 startup fund from the family members of the management team. Each of the co-founder will contribute RM50,000. Innovator will also participate in the business plan competition organized by MDeC to secure an additional of RM150,000 pre-seed fund. Innovator will be implementing e-marketing programs to introduce and promote ICONS. The promotion programs will be launch via the Internet, social networks, electrical distribution mailers and online banner advertisements. The proposed initial selling price of ICONS is at RM350 per unit base on the psychological price strategy. The sales projection for first year of operations is 1,200 units generating a sales revenue of RM420,000. The sales projection for the second year is 2,400 units with the sales revenue of RM840,000 and for the third year, the sales projection is 4,800 units with the sales revenue of RM1,680,000. In the first three years, Innovator is projected to have RM2,940,000 in total sales revenue. Innovator expects to have a break even in the first year and continue to earn a profit in the second and the remaining years.

Innovator faces two different types of competitions in the market. The first competition is from companies that provide air conditioning solutions and services that is base in Malaysia for example Yin Lee Ai Conditioner Engineering, World Air-Conditioning Engineering (M) Sdn Bhd and Klasse Airconditioning Sales & Services. The second competition is from manufacturers that provide air conditioner with new features and the good examples are Daikin Industries, Ltd and Intelligent Life. These companies are considered to be leading in innovative creation of new design for air conditioning system.

ICONS will be part of the Smart Home system in the future. ICONS customers are able to control the air conditioner remotely via the internet by signing into a system's account with an online interface. ICONS users are able to check the status of the air conditioner by using their mobile phone with 3G technology. Innovator planned to introduce more products with Artificial Intelligent Technology so it will allow Innovator to expand and be more competitive in the industry.

2.0 INTRODUCTION TO THE COMPANY

2.1 Company Background

Innovator is founded in 2008 by three Information Technology Technopreneurship students from Universiti Sains Malaysia after they discovered a solution that is able to improve people's lifestyle and at the same time help business owners save cost in their electric bill expenses. With the experience that Innovator has, each of the founders will be focusing on their specialize areas. Lau Teng Lye (Lau) as the Chief Executive Officer (CEO) of the company and also Chief of Research & Development division, he will be heading on the product invention section. Ching Yee Khim (Ching) is the Chief Marketing Officer (CMO) cum Chief Finance Officer (CFO) of this company and he will be leading the product marketing, sales and finance team. Lim Seng Chee (Lim) is the Chief Technology Executive (CTO) of the company will be in leading the technology division to work on product roadmap and future work.

Innovator is going to have a total of RM150,000 as a startup fund provided by the management team with the support from the family members. Innovator is also working towards participating in the business plan competition by MDeC to secure a pre-seed fund of RM150,000 as part of the business capital. In the financial plan, Innovator projected an expansion of the business to other regions in Malaysia. Innovator will seek investment from the angel investors or venture capitalist into the company in the future.

2.2 Business Intent

The fastest growing room air conditioner industry is Malaysia followed by China and thirdly Thailand (Ong F. S. et al 2007). The growth rate of room air conditioner for

Malaysia is about 15 percent per year for the past 3 to 5 years (Ong F. S. et al 2007). The improvement of lifestyle, easy payment scheme, an increase of household income and an emphasis on comfortable home are the factors that contribute to the growth rate. Energy saving is the key factor that drive market growth for a product (Dean, P. 2005). Customers are looking forward to have products with good quality and more technology advances as well as better priced products.

The founders of Innovator came out with a business idea to create a new system that is able to control the air conditioner and also to help users minimize their expenses on electricity consumption which the air conditioner able to switch off when the last user is leaving the room. Based from the survey report, there are total of 72% users who do not switched off the air conditioner when they are leaving the room.

Innovator is focused in developing an intelligent program that is able to communicate with the air conditioner to adjust the temperature automatically base on the number of people in a room and the room temperature detected by the temperature sensor. ICONS software will tabulate and capture the data from the temperature sensor and motion sensors. The program will compute the optimal temperature and will send a signal via the multi input controller to the air conditioner to adjust the temperature base on the condition in the room.

The advantage of using ICONS is that the users do not have to switch on the air conditioner when they enter the room because ICONS is able to turn on the air conditioner by itself. Similarly, when the user leaves the room, ICONS will send a command to switch off the air conditioner. In the case where the user want to have a different temperature from that was recommended, ICONS also provide a manual overwrite feature on its automatic processes for changing the air conditioner temperature.

2.2.1 User Pain

There are some new technologies offered in the air conditioner that is available in the market but none of the models able to switch the air conditioner on and off automatically. Users want an air conditioner that able to activate by itself and most importantly is to switch off by itself when the user is leaving the room. Air conditioner is one of the main electrical appliances that consumed a lot of electricity power (Chan, S.A. 2004). Every year, home user and office owner have to spend a lot of money on the electricity bill. User is looking for a solution to cut down the expenses on the electricity bill especially to ensure there is no wastage on electricity usage.

2.2.2 User Pain Solution

The user will have cost saving directly by using air conditioner with ICONS because the air conditioner will activate automatically when there is a needed. The customer will also enjoy the improvement of lifestyle because with ICONS the users do not need to use any remote controls. The air conditioner with ICONS can switch on or off by itself when detecting an occupant in the room as well as setting the optimum temperature for the room. Base on the study by Lim, when the air conditioner is running at its optimum temperature, the workload of the fan motor will be reduced and the usage of the electricity will be less compared to an air conditioner without ICONS by a 15% difference.

2.3 Growth Strategies

Innovator is a newly setup company and the company aims to develop and expand within the next 5 years. Initially, Innovator plan to concentrate in Penang and expand to

the whole Malaysia including Sabah and Sarawak in the next 2 years. Innovator plans in commissioning agents to handle the goods delivery and installation. Innovator is also expanding in human resources to have more experienced employees. Innovator will improve the ICONS program to include more features such as turning the system on and off via the internet and mobile phone. Innovator also planned to include the intelligent features into other appliances. Innovator will have business strategies to ensure the business continue to sustain and also able to provide valuable products to customer.

2.3.1 Financial Strategies

Innovator is funded by the management team with the support of the family members at the initial stage with the startup fund of RM150,000. The first plan to increase the company capital is to apply the pre-seed fund from MDeC by participate the business plan competition. Innovator is also looking forward to receive more funds to support the business as well as to cover the operating expenses for the company. Next in the business expansion plan is to the ASEAN market, Innovator will need to get more support from the angel investor to in the company. With a stable growth in ASEAN, Innovator planned to attract venture capitalist to invest their funds so that Innovator will be able to expand the business to the rest of Asia.

In the financial projections, Innovator is also trying to cut down the operating expenses in all aspects. As a newly setup company, all the executives who are committed to operate the company will take a minimum salary for the first three years and the three of the co-founders will not receive any salary in the first two years. Once Innovator is starting to earn a profit, Innovator will provide bonuses as well as incremental pay for the executives and the employees.

All the parts are going to be purchased from a supplier based in China and with an agreement to let the vendor to manage the inventory. Innovator will only bring in the minimum of inventory to support the run rate business and whenever there is an increase of demand, Innovator only will get the additional inventory from the supplier.

2.3.2 Technology and Product Development Strategies

ICONS is a product that can be use for any existing or new split unit air conditioner because it work as a standalone box by connecting to the sensors and personal computer. Innovator built ICONS in this way is to ensure the installation of the ICONS is simple and after point of sales service is easy to be implemented. The installation of ICONS will be done by the outsource service provider and there is no assembling needed and all the components come in a box. The components will be connected at the customer's premise during the installation and the fuzzy logic software will be installed to the customer's personal computer at the same time.

Innovator might start to focus on deploying artificial intelligent program into other home appliances that are more commonly use and also that consumed a lot of electricity. According to Chan, S. A. (2004), the appliances that consume the most electricity are air conditioners, refrigerators and washing machines. In the future, the migration plan will be for the refrigerators and washing machines.

2.3.3 Marketing Plans to Increase Market or Mindshare

The marketing plans for ICONS are focused to create brand awareness and also introduction to the customers. Innovator wants the customer to understand the benefit of using ICONS.

Below are the some of the marketing plans:-

- **Brand Awareness Campaign.**

The goal is to increase the awareness of ICONS by providing the information regarding the benefits of using ICONS. The messages that Innovator is going to use are related to energy savings and lifestyle improvement. ICONS is very easy to be memorized by the customer because it can be referring as a graphic symbol that denotes a program in a graphical user interface. Innovator would like to call out the name ICONS as an air conditioner solution for home and office users.

- **Advertisement**

Advertisement is one of the marketing vehicles that will help Innovator to create strong brand awareness for ICONS. Innovator will create online banner advertisement for the website and also creating the insertion for newspaper and magazine. In the advertisement, Innovator will list down the benefits, company information and product details for ICONS.

- **ICONS info websites and the internet.**

Innovator is going to have an information website to provide information like company profile, product details and contact details for purchase so customers are able to have more understanding about the company and product.

- **Social Network**

Social network is become one of the famous tools to communicate with friends and colleague. Base on the Top Ten Reviews for social network, Facebook and MySpace is the top 2 social network with the highest numbers of members (TopTenReviews 2009). Innovator will setup an account in the social network to promote ICONS. By getting more users to join in the group, more and more people will know about ICONS and it will help in increasing of contact database for Innovator.

- **Electronic Distribution Mailer**

Customer database is very important to Innovator. By not spending extra money to purchase customer database from a telemarketing Company, the fastest way to increase the customer contact is to get the information from social networks. By getting the database such as email address from the social network, Innovator can send out informative email to them. This is the easiest and faster way to touch base with the potential customer and also to inform them on the solution that Innovator is providing.

- **Conferences and Technology Trade Show**

There are multiple conferences and technology trade show which Innovator is going to participate. This is the best time to show the innovative products that Innovator has for the market by participate in the conference and trade show.

2.4 Revenue Model

The business model that we choose is business to customer model (B2C). The customer

can have their own choice of using ICONS with air conditioner from any brand. The revenue that generated will be base on total unit sold to the market. For the first year, Innovator set the sales target to sell 1,200 units of ICONS to the market, follow by 2,400 units in the second year and 4,800 units in the third year. The total sales revenue projection from the first three years are RM420,000 for the first year, RM840,000 for the second year and RM1,680,000 for the third year.

Innovator is planning to apply patent for ICONS as a protection for the company intellectual property. Innovator welcomes any manufacturer that interested to apply the A.I. technology into their products and with this arrangement, Innovator will be able to get some loyalty fee from the manufacturers.

At this point of time, the company income is solely base on the sales of ICONS, to increase the profitability, Innovator will need to drive on all the marketing programs that able to generate higher sales profit.

2.5 Operational Setup

2.5.1 Location of Innovator

Innovator will be allocated in Suntec City at Bayan Baru, Penang. It is 5 minutes drive from the Penang Bayan Lepas Industrial zone, 10 minutes drive from the Penang International Air Ports, 15 minutes drive from the Penang Bridge and 30 drive minutes from Prai Industrial Zone. We choose this location is because it is very convenient with all the public transportations available and the telecommunication facilities here is ready with broadband internet connection.

2.5.2 Warehousing for Inventories

Innovator will keep minimum of inventory in the office and Innovator is also implementing Vendor Managed Inventory system (VMI). The vendor will keep the inventories for us and we will only bring in the inventory once it is running low. This arrangement will help Innovator lower down the operating expenses which the company is transferring the majority holding cost back to the vendors (Mishra, B.K., Raghunathan, S. 2004). The storage cost will be bear by the vendors and there will be hassle free to do any stock take for the inventory.

2.5.3 Sales, Services and Distribution

Innovator is going to sell ICONS directly to the home users and small office customer based on the business plan, the technical team is able to answer customer queries immediately regarding ICONS. This is one of the fastest ways for customers to understand the product with the help from the team. All the installation will be carry out by the outsource service provider. This way will help the company to save on traveling expenses when the installation needs to be done in another state in Malaysia. Innovator will provide all the pre-sales, sales and after point of sales support for customer (Figure 2.1).

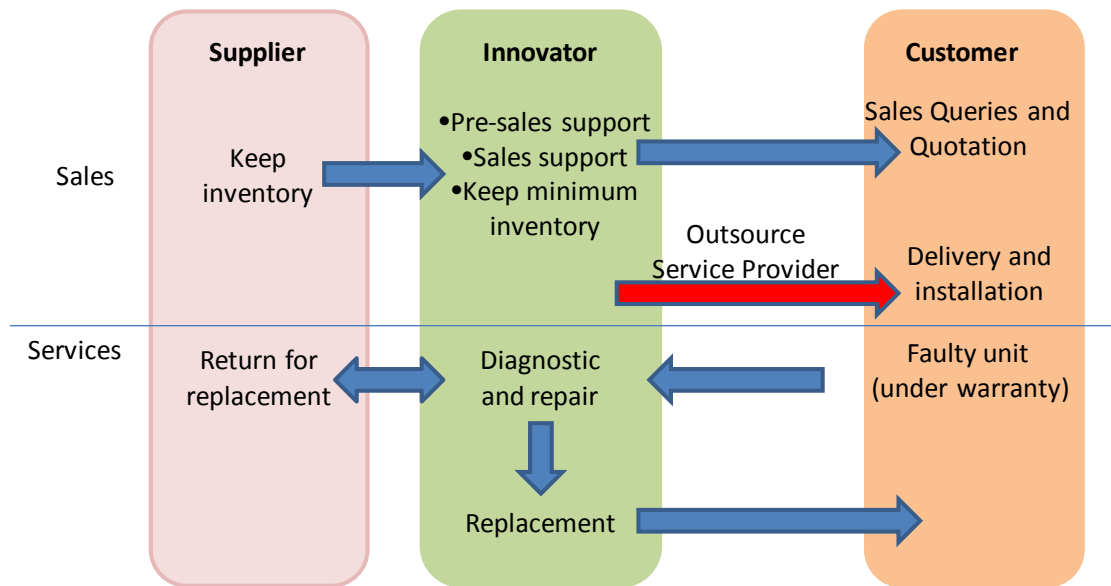


Figure 2.1 Sales and Support Process Flow

Innovator will expand the business model by having partners like the air conditioner service provider to sell ICONS with their services. This process will be based on appointment on whichever companies that are capable and experienced in this field. This is to ensure the pre-sales and post-sales service is able to sustain above the acceptable level.

2.6 Long Term Goals of Company

In the next two years, Innovator is targeting to cover Malaysia market including Sabah and Sarawak and moving into the third year of business, ASEAN market will be the targeted market and continue to conquer the US\$28 billion Asia market by the fifth year in business. By targeting to a larger market, Innovator needs to create more exciting products and to have more home appliances that built in with ICONS.

If the plan goes right, Innovator will have the ability to make an intelligent home or Smart Home within the next couple of years. In Smart Home, all the appliances in the

office or house can operate by itself with connecting it with the Artificial Intelligent program running on a personal computer. Besides increasing the opportunity in embedding the A.I. program into home appliances, Innovator also hope to work with any electronic manufacturer to buy the ICONS program and implement it into their hardware. Innovator can earn loyalty from different manufacturers in the market and this will ensure the company has the sustainable competitive advantage compared to other competitors.

2.7 Market & Competitors Information

2.7.1 Market Segment

Innovator is focusing on local market for the beginning stage. Total US\$70 billion global air conditioner sales in 2008 and 40% are from Asia Pacific (The Built Environmental Experts. 2009). According to the research from Universiti Teknologi Malaysia, the total unit for air conditioner shipped in Malaysia increase drastically from 1973 (Nasution, H. and Wan Hassan, M.N. 2007). In the same time, it also show that demands for electricity also significantly increased. Malaysia is a warm and humid country; the weather is getting hotter compared to the past few years back due to the global warming. The temperature increase 2.55°C/ 100 year for Penang (Ng, M.W., Camerlengo, A. and Abdul Wahab, A.K. 2005).

In year 2005, total 516,855 companies in Malaysia are in the categories of small business and it is equivalent as 98.8% total number of establish in Malaysia (Abdullah, M. A. and Ab. Manan, S. K. 2008). Base on the Long Tail Theory, the economy is shifting away from a mainstream markets at the head of the demand toward a huge number of niches in the tail (Anderson, C. 2004). So Innovator is targeting to sell the

product to home user and small office user which is considers a niche or micro market. There are requirement for air conditioner this group of customer and most of them using air conditioner system in their premises.

2.7.2 Competitors

At this time being, there are less air conditioner service providers or manufacturers implemented Artificial Intelligent technology into their air conditioner system but some of manufacturer might have sensor technology in their air conditioner but it is a different technology at all. In this scenario, customer might not realize the difference between air conditioner with Artificial Intelligent technology compare to just sensor technology.

Base on the market research that carried out by Lau, there are total 47% percents of users never heard of A.I. Technology in an air conditioner and total 56% percents of user never heard that software can control the functionality of the air conditioner. Artificial Intelligent technology makes machine “think/ reasoning” and “act” accordingly like human being; but sensor technology makes machine “act” without “think/ reasoning”.

There are other competitions in this field and mainly the competitor are companies that provide air conditioning solutions services by providing installation and maintenance services in big scale industrial sectors.

Some of the well known air conditioning solution services providers are:-

- Yin Lee Air Conditioner Engineering that founded in year 1999 and its business operations is in the Northern Region of Peninsular Malaysia with specialized in all types of industrial and commercial air conditioning and refrigerators.

- Klasse Airconditioning Sales & Services, founded in year 2000 and its business operation is in the Center Region of Peninsular Malaysia with specialize in precision air conditioning or close control air conditioning for industrial sectors.

The other type of competition is from companies that provide new of enhance features in the air conditioning system for home or commercial sectors:-

- Daikin Industries, Ltd founded in 1924 and incorporated in 1934. Daikin is famous with its air conditioning system with inverter technology and energy saving features for home and commercial users.
- Intelligent Life started in 2008 by Advantage Air group. They are specialized in high technology and innovation design in creating new generation of air conditioning system.

2.8 Strengths, Weaknesses, Opportunities and Threats (SWOT)

ICONS will have a good product positioning because the selling focus is on customer who are looking for an air conditioner solution that can help them lower down the operating expenses and also increase their living style.

In the SWOT analysis, it shows that Innovator has the strength over the competitors but there is also some room to improve.

2.8.1 Strengths

- The team is formed by a group of talents in A.I. technology, software engineering and marketing. Innovator is able to provide a complete business plan to sell ICONS into

the market.

- ICONS is created by Fuzzy Logic Algorithm which will be able to work efficiently and effectively together with the motion sensor and temperature sensor.
- All the control for the air conditioner will be carried out by the personal computer after receiving signal from the sensors. No remote control needed to operate the air conditioner because the temperature will adjust according to the total people in the room as well as the current room temperature.
- When the temperature detected from the temperature sensor is at optimum level, the algorithm will send a signal to the air conditioner to change the temperature to match the suitable room temperature. In another word, it will help reducing the motor workload and this resulting energy saving from the air conditioner.

2.8.2 Weaknesses

- Innovator need to rely on outsource service provider to do the product installation for customer and it is impact to the total cost of sales. The team is still lack of hardware engineer or air conditioning expert who knows the air conditioning business and industry.
- There might be potential error especially from the motion sensors when too many people walk in or walk out from the room which the motion sensors might not be able to capture the data correctly.
- ICONS is only able to use with split air conditioner. For offices that using centralized air conditioner system, they can't implement ICONS unless the customer willing to change the entire air conditioner system.

2.8.3 Opportunities

- The team is able to apply the same methodology to create a new product in a shortest time because the basic of running the product is the A.I. software and we already have the knowledge to create it.
- The market for air conditioner is growing year over year. In year 1991, total 253,399 units of air conditional sold in Malaysia and after 18 years, the total units of air conditioner sold is more than this amount (Masjuki, H.H., Mahlia, T.M.I. and Choudhury, I.A. 2002).
- Customer willing to pay additional amount for air conditioner with additional features.
- Users always forget to switch off the air conditioner and causing high electricity bill.

2.8.4 Threats

- Artificial Intelligent program can be easily duplicated by the competitors.
- Competitors might offer a similar solution with lower price.
- Competitors have distribution channel to promote their product to the market.

Table 2.1 SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> • Team members with experience and knowledge in A.I Technology, Software Engineering and Marketing • ICONS is able to work efficiency and effectively • No remote control needed to operate the air conditioner with ICONS • Temperature of air conditioner will adjust base on the condition in the room • Energy saving 	<ul style="list-style-type: none"> • Reply on outsource service provider for delivery and installation • Lack of hardware engineer • Potential error on the motion sensors • ICONS only able to use with split air conditioner.
Opportunities	Threats
<ul style="list-style-type: none"> • Able to apply the same technology to other product in the shortest time • The market for air conditioner is growing year over year • User willing to pay for air conditioner with additional features • User always forget to switch off the air conditioner causing high electricity bill 	<ul style="list-style-type: none"> • Artificial Intelligent program can be easily duplicated by the competitors. • Competitors might offer a similar solution with lower price. • Competitors have distribution channel to promote their product to the market.

3.0 EMPLOYMENT OF KNOWLEDGE WORKERS

3.1 Innovator Management Team

Innovator founded in 2008 by three students from Msc IT Technopreneurship, Universiti Sains Malaysia (USM). Lau Teng Lye, Ching Yee Khim and Lim Seng Chee are the co-founders for Innovator. In the organization structure, Lau is appointed as the Chief Executive Officer (CEO) and he is also leading the research and development division (R&D) as the Chief of Research & Development division. Ching is the Chief Marketing Officer (CMO) and Chief Finance Officer (CFO) while Lim is the Chief Technology Officer (CTO) for Innovator.

Table 3.1 Innovator Management Team

Name	Personal Background
Lau Teng Lye	Lau is a graduate from Universiti Utara Malaysia with a degree in Information Technology, major in Artificial Intelligent. Currently Lau is still involved in developing AI application in his existing job under Inti International College. Lau is the CEO for Innovator and Chief of R&D that leading the company's R&D division.
Ching Yee Khim	Ching has more than 5 years experience in Sales and currently still attached with a multinational company as Brand Marketing Manager. He always involved in marketing and sales planning. He is a graduate of Universiti Sains Malaysia. With his experience in sales and marketing, Ching is the CMO cum CFO for Innovator who is leading the marketing and finance division for contributing in the marketing planning, pricing analysis and financial projection for the company.

Name	Personal Background
Lim Seng Chee	Lim graduate from Multimedia University, Malacca Campus with major of Information Technology. He is an expert in Software Engineering. Lim is also an experienced application support specialist and programmer. Lim will be heading the Technology division as the CTO for Innovator.

3.2 Organizational Chart

Innovator is having five divisions that leading by the management team. At this point of time Lim, our CTO is also covering the process for IT division until we found a suitable person to join our team as the Chief Information Officer (CIO). The Innovator organization chart as shown in figure 3.1.

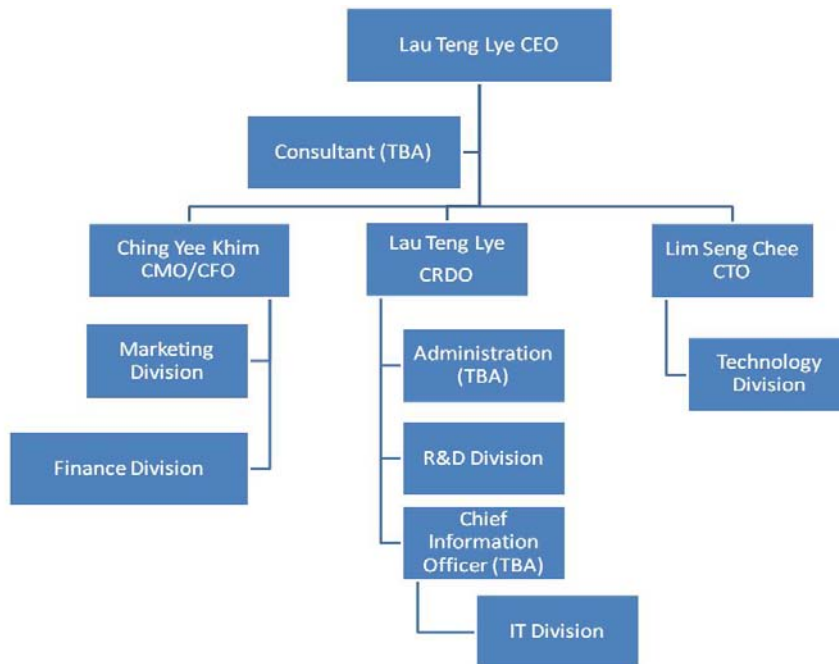


Figure 3.1 Organization Chart

At the first year of our business operation, Innovator planned to hire total six employees including the management team. Innovator also planned to expand the business in the following year by adding another eight employees for all divisions and follow by having a total of seventeen employees by the end of third year. The incremental of employee size in the company is ensuring to have enough manpower to drive the business process. With the strong committed members enable Innovator to sustain in the competition as well as managing daily routine operations.

3.3 Human Resources Plan

Training and employee development are one of the crucial part in our human resources planning. To archive a sustainable competitive advantage in this market, all the employees inclusive the management team must be equipped with knowledge and technical skills. In the beginning stage, Innovator planned to hire experience employees from air conditioner industry. Trainings and certification will be provided to all employees to increase the knowledge base on the training plan.

Below is the 3 years projected Human Resources plan:-

Table 3.2 Human Resources Plan

Position/Role	Year 1	Year 2	Year 3
<u>CEO</u>			
CEO and Chief of R&D	1	1	1
Technical Advisor		1	1
Executive Secretary	1	1	1
Position/Role	Year 1	Year 2	Year 3
<u>R&D Division</u>			
R&D Engineer		1	1

<u>Technology Division</u>			
CTO	1	1	1
Technical Development Director		1	1
Technical Engineer		1	2
<u>Marketing/Finance Division</u>			
CMO/CFO	1	1	1
Business Development Manager	1	1	1
Account Executive		1	2
Financial Manager		1	1
Dispatch & Office Assistant		1	2
<u>IT Division</u>			
CIO/IT Director	1	1	1
Web Designer		1	1
Total No. Of Worker	6	14	17
Total Knowledge Workers	5	12	14
Total Foreign Knowledge Workers	0	0	0
% Of Knowledge workers	83%	86%	82%

For the next three years, Innovator will come out with an intensive training plan for the employees to improve their technical knowledge in Artificial Intelligent application. Innovator is also planned to involve in technical conference, trade show, and other relevant events to let the employees learn the latest skills in this field. Below are the training programs that Innovator planned for the next 3 years.

Table 3.3 Training Program

Training	Year 1	Year 2	Year 3
External Conference	√	√	√
Trade Show		√	√
ISO certification		√	√
Courses		√	√

3.4 Team Contribution

This business plan is done by the team members and each of the team members contributing the research work in different part of the project.

Table 3.4 Team Contribution

Areas of Research/ Item Contribution	Personal in charge/ Descriptions
Company name	Innovator
Founders	Lau Teng Lye, Ching Yee Khim, Lim Seng Chee
Product idea	Lau Teng Lye
Research on product development	Lau Teng Lye
Research on marketing	Ching Yee Khim
Product name	ICONS
Product uniqueness	Convenient of auto temperature adjustment.
Financial strategy	Ching Yee Khim
Marketing strategy	Ching Yee Khim
Target market	Small office users, home users
Revenue model	Selling the ICONS software and hardware attach unit (ICONS-box)
Areas of Research/ Item Contribution	Personal in charge/ Descriptions
Operational setup	Small Office Home office setup
Long term goal of the product	Lim Seng Chee
Market and competitors	Lim Seng Chee
SWOT (base on research area)	Lim Seng Chee, Lau Teng Lye, Ching Yee Khim
Management team	Lau Teng Lye, Lim Seng Chee, Ching Yee Khim
Product design	Lau Teng Lye
Pricing strategy	Ching Yee Khim
Sales projection	Ching Yee Khim
Financial summary	Ching Yee Khim