

CANCER DIET SYSTEM: USER REQUIREMENT ANALYSIS

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SISTEM PEMAKANAN PESAKIT BARAH ATAS TALIAN: ANALISA KEPERLUAN PENGGUNA

ABSTRAK

Disertasi ini ialah sebuah pelan perniagaan yang disertai dengan penyelidikan bertujuan untuk mempromosikan perkhidmatan laman sesawang baru iaitu, Sistem Pemakanan Pesakit Barah (SPPB). Laman sesawang ini merupakan hasil kerja pertama sebuah syarikat penyedia perkhidmatan dalam talian yang berasaskan pemakanan dan nutrisi iaitu, Vita Omega Technologies. Dewasa ini, peningkatan pesakit barah amatlah membimbangkan di tambah pula dengan kadar kematian yang terus meningkat. Pesakit-pesakit yang baru didiagnosis dengan barah biasanya akan hilang semangat dan motivasi diri kerana menganggap penyakit ini tiada ubatnya. Namun, mengikut temuramah yang telah dijalankan dengan beberapa orang bekas pesakit barah yang telah pulih, sokongan dari keluarga dan rakan taulan, sentiasa berfikiran positif, amalan pemakanan dan gaya hidup sihat dapat membantu mereka untuk pulih. Pesakit yang baru disahkan menghadapi barah sering tertanya-tanya makanan yang boleh dan tidak boleh dimakan. Tambahan pula pesakit barah sering dihujani dengan pelbagai informasi tentang pemakanan daripada masyarakat sekeliling mereka. Apa yang membimbangkan sekiranya mereka mengikut cakap-cakap masyarakat sekeliling tanpa pengesahan dari doktor atau pakar. Menyedari akan kepentingan amalan pemakanan yang sihat dapat membantu pesakit barah, Vita Omega Technologies telah mengorak langkah dengan menyediakan perkhidmatan laman sesawang SPBB ini. Laman sesawang SPBB ini menawarkan informasi-informasi berkaitan pemakanan pesakit barah seperti panduan menghadapi kesan sampingan rawatan, jadual pemakanan seminggu dan koleksi resepi menarik. Malah, kandungan laman

sesawang ini akan dikelolakan oleh pakar dietetik yang bertauliah. Jadi tiada keraguan dari segi kesasihan maklumat. Informasi yang ditawarkan pula adalah berdasarkan budaya masyarakat Malaysia yang terdiri daripada berbilang kaum dan pelbagai gaya pemakanan. Melihat kepada potensi SPBB ini untuk berkembang, Vita Omega Technologies telah menjalankan kajian mendalam untuk mengetahui keperluan laman sesawang ini daripada pengguna. Kajian keperluan pengguna telah dijalankan bagi mengetahui apakah kehendak pengguna dan informasi yang ingin mereka ketahui agar SPPBB dapat mencapai tahap manfaat yang maksimum. Metodologi yang digunakan ialah Proses Umum Analisa Keperluan Pengguna yang terdiri daripada empat fasa iaitu, Fasa 1 : Pengumpulan Maklumat, Fasa 2 : Keperluan Pengguna, Fasa 3: Gambaran & Penilaian dan Fasa 4 : Spesifikasi Keperluan. Hasil akhir kepada kajian ini ialah suatu senarai keperluan pengguna yang dapat diadaptasikan kepada SPBB. Antara keperluan pengguna yang didapati ialah system membolehkan pengguna memberi pandangan terhadap kesesuaian tip-tip dan panduan pemakanan yang dicadangkan kepada mereka. Pelan perniagaan ini turut membincangkan latar belakang syarikat penyedia perkhidmatan, organisasi syarikat, kaedah kajian dan hasil akhir, pelan pemasaran syarikat dan unjuran kewangan untuk tiga tahun operasi. Keseluruhannya, disertasi ini membincangkan kesemua kandungan lazim yang biasa didapati dalam sebuah pelan perniagaan yang disertai kajian penyelidikan.

CANCER DIET SYSTEM: USER REQUIREMENT ANALYSIS

ABSTRACT

This dissertation is about business plan of new online health system, Cancer Diet System (CDS) with research element. It is owned and developed by a new online diet and nutrition information provider company, Vita Omega Technologies. Cancer has been a major cause of death in Malaysia and total number of patients diagnosed is increasing each year. Cancer patients who are newly diagnosed will lose their self confidence and be highly demotivated. However, according to some of cancer survivor, support from family and friends, proper diet and healthy lifestyle could fasten up their recovery time. Realizing the importance of proper diet to cancer patients, Vita Omega Technologies have taken the opportunity to develop an information online websites that are useful for information seeker including patients and their family members. Cancer patients have always been bombarded with lots of information regarding their diet from people around them which may not be scientifically proven. CDS will offer information on dietary and nutritional tips, seven day meal plan and collection of healthy recipes. The content of this website will be provided by registered dietitians. Vita Omega Technologies have conduct research on user requirement of the system in order to know information regarding cancer patients' diet and nutritional that is useful to them. The outcome of this research is a full list of user requirements for development of Cancer Diet System. One of the requirements is that Cancer Diet System will allow user to give feedback on tips, guidelines and meal plan recommended to them. All recommendations are based on their health information which they had entered earlier to the system.

SECTION 1.0 EXECUTIVE SUMMARY

Vita Omega Technologies is a web content provider of diet and nutritional intake guidelines, facts and information. It is a start-up company that develops websites, portals and online system for all major diseases and sickness and focus on the diet and nutritional area. Founded on 9 September 2009 by Farhana Aini Bt Saludin, a postgraduate student in MSc IT Technopreneurship in USM, Penang. The company consists of five employees including an advisor.

Cancer Diet System would be the first product of Vita Omega Technologies. This websites will be an enhancement from current cancer portal, Cancer Patient Portal. Cancer Patient Portal is developed by Wecare. It is a health portal that allows cancer patients to make friends, write a blog, share information and experience, give and receive support from their family and friends. In order to increase Cancer Patient Portal values and benefits, diet and nutritional functions will be added to the portal and this additional function will known as Cancer Diet System.

With increment of cancer patients from years to years, it is believed that source of information on cancer issues are valuable to them. Cancer patients who had just been diagnosed with this disease might feel they are alone and do not know to find source of information. Even though there are many websites on cancer on the internet, they do not know which websites are trustworthy in terms of accuracy of the information. Also cancer patients might hear a various mouth says on cancer that might not be true. This can jeopardize cancer patients' health if they listen to invalid resources. Therefore, Cancer Diet System will be their source of getting the right and accurate information as it will be under surveillance health experts.

Cancer Diet System objective is to give useful information on foods to consume during and after cancer treatment. This website will also provide meal planner for a week including breakfast, lunch and dinner. Besides that, recipes and preparation guideline will be included. Also, the websites is added with nutritional tips and facts to increase their understanding on dietary intake during cancer. Due to side effects of treatment, cancer patients might lose their appetite and with Cancer Diet System, it is hope cancer patients can try different types of foods and understand more on diet and nutritional intake during this hard period. Diet and nutritional guidelines provided are based on Malaysian environment where the ingredients can easily get from local groceries stores.

Research on user requirement analysis for Cancer Diet System will be conducted. User requirement is one of the crucial parts in information system design and it highly contributes to the success of an information system. This research will be conducted based on user requirement analysis general processes which are information gathering, user needs identification, envisioning and evaluation and requirements specification. These processes will involve different methods of data collection such as questionnaire, interviews and stakeholder analysis. User will get most benefits from the system when it met their requirement and fulfill their expectations. Therefore, a complete user requirement will contribute to the success of Cancer Diet System as it can benefits user and provide solutions to them when dealing with food during cancer.

Start-up fund for Vita Omega Technologies would be RM118, 036. This includes setting up the company, purchasing software and hardware needed and also for advertising purpose. Vita Omega Technologies projected sales increasingly for the first 3 years of operation. For first year of operation the company estimated to generate revenue of

RM171, 100.00 by doing a few assumptions. Following year, it is estimated to generate revenue of RM536, 820.00 and RM751, 228.00 for the third year of operations.

SECTION 2.0 INTRODUCTION TO COMPANY

2.1 Company Background

Vita Omega Technologies is a web content provider of nutritional intake and dietary guidelines. It will be a new leading company on development of e-diet and nutritional websites, portal and online system. Founded on 9 September 2009 by Farhana Aini Bt Saludin, a postgraduate student in MSc IT Technopreneurship in USM, Penang. The company hopes to connect closely to the society by providing health online solutions that could benefit them.

From its name, “Vita” refers to vitamins which are dietary supplement that are important for human health while “Omega” is a short term for Omega 3 oils which have been called as “ the miracle food of the 21st century”. Both of these names will reflect the company as a health information provider which focuses on foods and nutritional intake. Technologies would refer to the use of the Internet, Web development and other web-based technologies in order to produce a websites, portal or an online system.

This E-health business will be established to produce online solutions for health concern individuals and organizations. Health in fact is a very interesting topics and it is a major issues around the world and for each one of us. Topics related to health are highly various from diseases, nutritional, maintaining health, allergies and others. Therefore, this business seems promising for now and in future. In addition, with the application of web-based technology and Internet, e-health offers a different method in gaining health information.

2.2 Business Intent & Clear Indication of Intended Business Activities

As a startup companies, Vita Omega Technologies focus on development of nutritional and diet system that would focus on a particular type of diseases, sickness or illness. Cancer Diet System (CDS) would be the first web-based system developed by Vita Omega Technologies. CDS will be added to Cancer Patient Portal.

Cancer Patient Portal is a health portal that allows cancer patients to make friends, write a blog, share information and experience, give and receive support from their family and friends. It is designed and developed by Dr. Nasriah Zakaria, a researcher at University Science Malaysia, Penang together with her team in April 2008. Later on 2009, publishing content had been added to the portal which was developed by WeCare. (Chan, 2009) In order to increase Cancer Patient Portal values and benefits, CDS will be added to the portal.

CDS will focus on cancer patients' dietary and nutritional intake guidelines. Diet for cancer patients and normal person is different based on the health condition. When a person is healthy, eating enough food to get the needed nutrients and calories is not a problem. For a healthy person, they are advice to eat lots of vegetables, fruits and whole-grain products while cutting back on fat, sugar, alcohol and salt. They must also ensure that they stay at a healthy weight. However, when a patient are being treated for cancer, this may be hard to do, especially if they had side effects or just don't feel well. As a result, their diet might need to change to help build up strength and withstand the effects of cancer and its treatment.

Types of treatment patients undergo, will also differ patient's diet. Among cancer treatments are surgery, radiation therapy and chemotherapy. For those who went through

surgery, their body needs extra calories and protein for wound healing and recovery. This is the time when they feel some pain and fatigue. They also may be unable to eat a normal diet because of surgery-related side effects. The body's ability to use nutrients may also be changed by surgery that takes out any part of the mouth, esophagus, stomach, small intestine, colon or rectum.

Some cancer patients need extra protein and calories. At times, they may need to include extra milk, cheese and eggs. If they have trouble chewing and swallowing, they may need to add sauces and gravies. Sometimes, they may need to eat low-fiber foods instead of those with high fiber. Therefore, people with cancer often need to follow diets that are different from what they think of as healthy. National Cancer Institute's (2009)

CDS will have three basic modules which are Diet & Nutritional Tips, Recipes & Preparation and 7-Day Meal Plan. The uniqueness of this diet system is it will suggest advice and provides facts, tips and dietary guidelines based on cancer patients' health background such as types of cancer, level of treatment and weight loss.

Other than that, Cancer Diet System will offer recipes and food preparation that are healthy and are suitable for cancer patients. Recipes suggested would suits the tastes of Malaysian people easy for them to prepare. Recipes given will also shows what are the ingredients needed and the food preparation. For each recipe, nutrient facts will also be included such as amount of calcium, iodine and other nutrients. Ingredients for recipes suggested will be easy to find from local groceries stores in Malaysia. There also videos preparation demo of recipes for those who subscribes to the features.

Besides health tips and recipes, Cancer Diet System would also include daily food schedule for cancer patients. The websites will suggest what are the food and beverages to

have during their breakfast, lunch, dinner and mid night meal. The food schedule would vary based on cancer patients health record such as their status of treatment, undergo treatment or after treatment. Vita Omega Technologies provides SMS Meal Plan Reminder to remind users on their menu for that day. Users need to subscribe to the SMS service.

CDS main target user will be cancer patients and their family and friends. Other than that, CDS target users are the caregivers. Caregivers are those who take care, give support and motivate the cancer patients that could be their family members, parents or even outsiders that are concern of the health of cancer patients. Besides that, CDS can also use by medical students and dietetics students as their additional reference.

With the development of this diet system, it is hoped that cancer patients, their families, friends and care givers would know the right foods and diet for a cancer patients while nutritional tips will help them to go through the hard time. Vita Omega Technologies would be able to provide a very efficient cancer diet system since it will collaborate with dietitian from local hospitals. The company will also collaborate with food manufacturer to advertise their products to user. Vita Omega Technologies will ensure that food advertise have licensed from Ministry Of Health so that user will not feel threat.

2.3 Growth Strategies

Vita Omega Technologies would follow the Ansoff Matrix as its growth strategy. Ansoff Matrix is a way of classifying the four basic product strategies of marketing which are developed by Igor Ansoff. Ansoff Matrix consists of market penetration strategies, market extension strategies, product development strategies and diversification strategies.

(Stat, 2006). Table 2.1 shows the structure of Ansoff Matrix. According to D. Parrish in his article entitled “Strategies for Growth using Ansoff’s Matrix (or Ansoff Matrix)”:

Market penetration: means selling more of existing products to existing market. For example, increasing increase market share.

Product development: means growing through existing customer segment by offering new products to them.

Market development: means to sell existing products to new customer segments

Diversification: means doing new products for new markets.

Table 2. 1: Ansoff Matrix (Parish, 2006)

| | | Products | |
|--------|----------|---------------------------|----------------------------|
| | | Current | Proposed |
| Market | Current | Market Penetration | Product Development |
| | Proposed | Market Extension | Diversification |

For Cancer Diet System, the company will follow the Diversification strategy because it is a new product and apply to new markets where this company never entered before. Diversification has two main categories which are related diversification and unrelated diversification. Related diversification is where the organization develops new products and services in new markets but in the same industry. Unrelated diversification is where the organization penetrates a new area for business and at the same time developing new products. (Anonymous, 2009)

Vita Omega Technologies will apply the related diversification strategies as it will develop new products and services in new markets but in the same industry which is health. The related diversification is not as risky compare to unrelated diversification because the products are of the same industry which means less expenses, time and effort. This strategy will involve development of a new competencies product that can be appealing to the existing markets.

To achieve growth of 5% annually, Vita Omega Technologies will increase gross profit by entering health sector and with the implementation of information technology. Vita Omega Technologies will implement the diversification strategy by taken series of actions. For example, the company structure will engaged with health experts who are knowledgeable in diet and nutritional fields.

As entering new market with new products, Vita Omega Technologies will do an analysis of user requirement in order to get the most inputs of what user needs and their expectations so that the system will have a high value to the users. Analysis of user requirements will further discuss in Section 4.0

As Vita Omega Technologies will be entering new market that the company had no presence before, market survey will also be done in order to know potential users, competitors and price that would be offered to users. This will further explain in Section 5.0

2.3.1 Financial Strategies

Vita Omega Technologies will apply for Multimedia Development Corporation (MDEC) Technopreneurs Pre-Seed Fund grants as its financial sourcing. The amount

granted by MDEC is up to RM150, 000. As a startup, the company needed RM118, 036.00 to start and run its operation.

Expenses include allowances of RM800 to each staff except for Managing Director and Accounting & Financial Director which is RM500 for first year of operations. Other than that, there will also be expenses for Research and Development (R&D), Sales & Marketing and General & Administrative expenses. Figure 2.1 shows the percentage of expenses for first year of operation.

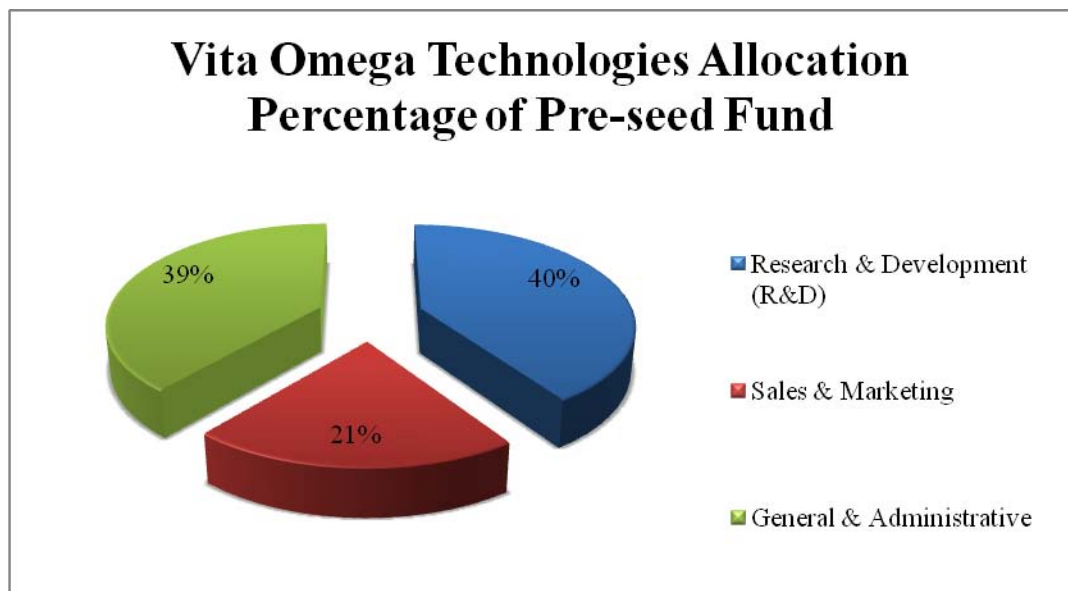


Figure 2. 1: Expenditure Allocation for First Year of Operation

Allowance will be paid to three employees amounted RM800 per month. Three employees that will be paid are the Web Development and IT Director, Web Developer and Dietitian. On the other hand, allowance of RM500 will be paid to two employees per month who are the Accounting and Financial Director and Managing Director.

Vita Omega Technologies will buy basic office equipments such as two laptops, two desktops, one printer and one Adobe Dreamweaver CS4 original software. The prices

for laptops and desktops is reasonable as it consists all the basic requirements needed for the purpose of web development and programming and operational jobs.

Research and web development references such as books will be allocated up to two books for each quarter. Each book is estimate around RM100.00. For the purpose of information gathering during requirement definition phase, each quarter will be allocated

Vita Omega Technologies will apply for trademark on its products and services as websites diet and nutritional developer. According to Intellectual Property Corporation of Malaysia, trademark is a sign which distinguishes the goods and services of one trader from those of another. A mark includes words, logos, pictures, names, letters, numbers or a combination of these. A trade mark is used as a marketing tool to enable customers in recognizing the product of a particular trader.

Therefore in order to increase Vita Omega Technologies visibility to the public, the company will apply for trademark protection. Besides that, travelling expense will be allocated in case the staff needs to go out to meet clients or involve in field research. For every quarter RM600 will be allocated. Summary of company expenses can be refers in Section 6.0

2.3.2 Technology and Product Development Strategies

Vita Omega Technologies would perform various strategies in order to ensure that the system developed not only valid in terms of content, but also the requirements of the system meet user needs and their expectations.

Web content and information

As health information web-based system, it is crucial that the web-based system content is accurate, verified, well-organized, suitable to patient needs and reliable. Diet and nutritional advisors will ensure that the modules proposed on the system are well-structured and meets users needs and expectations.

Programming Language

Cancer Diet System will be developed using Hypertext Preprocessor Programming Language (PHP). As a general-purpose scripting language, PHP had been widely-used and suited especially for Web development. PHP can be easily embedded with Hypertext Markup Language (HTML) and JavaScript. According to Netcraft, PHP usage for July is 20,917,850 domains and 1,224,183 IP addresses.

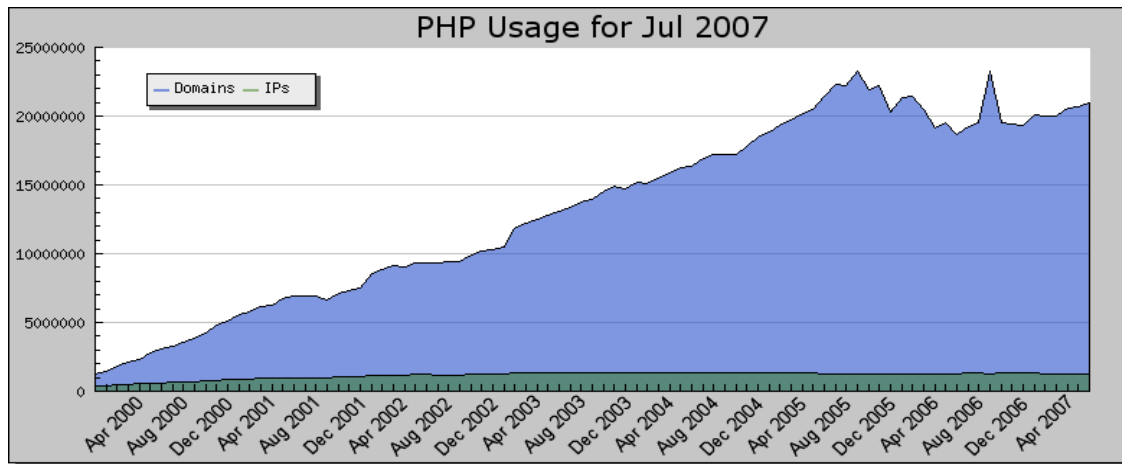


Figure 2. 2 : PHP Usage for July 2007
(Netcraft as cited By PHP.Net)

PHP has been chosen as programming language for development of Vita Omega Technologies web-based system due to its simplicity. For those who do not have programming experience or very little experience, they can quickly get up to speed and begin creating full-fledged applications. This is because it was specifically designed for

creating web applications. It has a host of built-in functions to handle common needs.
(Fulghum, 2001)

Besides that, PHP is an open source language. PHP source code is freely available. This means that there is no need to rely on manufacturer to release the next version if something doesn't work or pay for expensive upgrades. There are always communities of developer who are working to improve, add to and find bugs in the language.

PHP also stably functions on many operating systems including UNIX, Windows and Macs. The language also integrates well with most popular servers including IIS and Apache. Therefore it is stable and compatible.

Database

MySQL database has been identified to be the web-based system database. MySQL database has become the world's most popular open source database due to its consistency fast performance, high reliable and ease of use. According to an article from MySQL.com, MySQL is used by most individuals Web developers from all around the globe to save time and money in order to support their high-volume Websites, business-critical systems and packaged software.

This includes industry leaders such as Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube and Zappos.com. MySQL runs more than 20 platforms including Linux, Windows and OS. It is also can be used with applications such as PHP, Apache and Perl.
(Source : MySQL.com)

Software Development Methodology

Rapid Application Development or RAD will be used as methodology in developing this Cancer Diet System. RAD is a methodology that promises organizations the ability to develop and deploy strategically important systems more quickly while simultaneously maintaining the quality and reducing development cost. (Marakas, 2006)

RAD compresses the analysis, design, build and test phases into a series of short, iterative development cycles. Diagram 2.2 shows the difference between traditional life-cycle development approach and rapid application development.

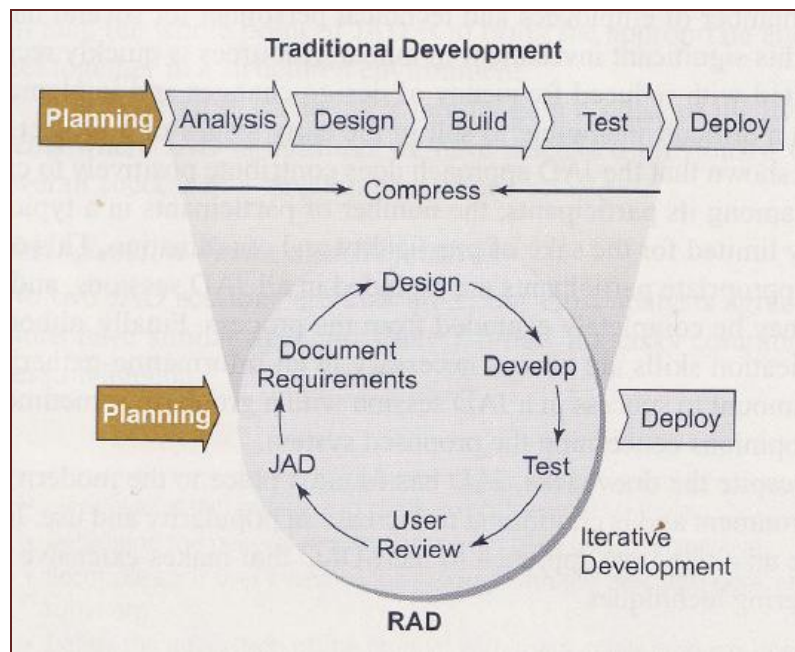


Figure 2. 3: Differences between Traditional Life-Cycle and RAD Approaches (Marakas, 2006)

User involvement throughout the RAD lifecycle ensures that business requirements and user expectations are clearly understood by all participants. Major use of iterative prototyping is employed to help users visualize and request changes to the system as it is being built. This allows application to evolve rapidly.

There are three primary application development techniques applied in RAD which are iterative prototyping, use of integrated software tools sets such as CASE and conduct of requirements-gathering joint application design (JAD) sessions, and time-box approach. (Marakas, 2006)

RAD with iterative prototyping allows the analysis to quickly convert the basic requirements of a system into a limited working model that can be viewed and tested by the end users. JAD session brings together the users, managers and technical personnel associated with a development project to conduct a series of highly structured intensive information-gathering workshops. The time-boxed concept's application allows development team to quickly build the core of the system and implements refinements in subsequent releases. (Marakas, 2006)

RAD methodology is a time savings in overall project phases are realizable. This methodology also creates a strong sense of ownership among all project stakeholders.

2.3.3 Marketing Strategies to increase mind share

Vita Omega Technologies would implement several marketing strategy in order to build mindshare. The first two years of operating, Vita Omega Technologies will build its company branding. As a new company, it is important to ensure that the company is recognized by “everyone”. The company will produce more quality products ranging from online system, portals to forum each year in order to build its name as e-health provider in the industry.

By being under MDEC Technopreneurship Pre-seed Funding Programme, the company will join MDEC program to promote Vita Omega Technologies as an e-health

provider to local and international level. For example, on January 2010, MDEC had taken the initiative to promote mobile contents and applications pilot, project-in-progress and/or completed digital content products to Barcelona, Spain. This is in conjunctions with GSMA Mobile World Congress 2010. MDEC have played their part in promoting local product to the eyes of the world.

Brochures, letters, newsletters, bulletins and pamphlets will be given to clients in order to leave an impression on them. These business materials help to educate the client about company capabilities and to build a relationship. As most of other competitors were doing the same strategy, Vita Omega Technologies will not rely on those methods only.

In order to give impression and set the company apart from competitors, Vita Omega Technologies will also sends prospects with interactive email applications such as Ideal Weight calculator with a note said “Danny, this is to help you calculate your ideal weight...” With this simple and inexpensive strategy, Vita Omega Technologies could promote themselves as a web application provider of e-health in a different but effective way. By stating, clients name, they would feel closely attached to the company.

Organizing booth for road shows is another way to increase visibility of Vita Omega Technologies to the potential clients. These road shows can be done by setting a small yet interactive booth during computer fair, mobile lifestyle events and visits to health organizations.

2.4 Target Markets

Vita Omega Technologies target market will differ based on products to be market. As first project, Cancer Diet System main target users are cancer patients and their

caregivers from Malaysia. Therefore, the system content will mostly suggesting tips, menus and recipes based on Malaysian tastes and the ingredients will easily get from local groceries.

Malaysia will be start up targeted region because the company is based in Malaysia. After five years of operation, Cancer Diet System is hope to meets its audience in neighboring country such as Singapore, Brunei and Indonesia as the difference of setting would not be much difference.

2.4.1 Cancer statistics in Malaysia

Malaysia Cancer Statistics 2006 shows that there was 21,733 cancer cases were diagnosed among 24.8 millions of Malaysians in Peninsular Malaysia and these cases were registered with National Cancer Registry. From the total amount, 46% or 9974 cases were males and 54% or 11799 were females.

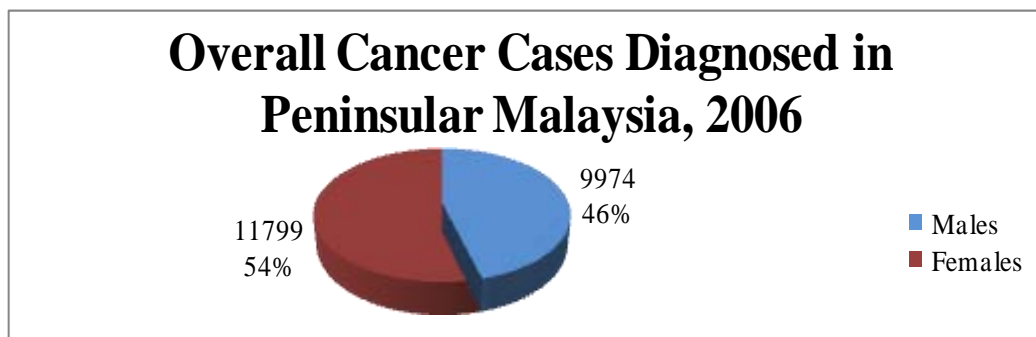


Figure 2. 4 : Overall Cancer Cases Diagnosed in Peninsular Malaysia, 2006

Cancers do occur at all ages. From Malaysia Cancer Statistics 2006, it is known that three group of ages that had the highest percentage of cancer patients among the males are 50~59, 60~69 and 70 above. Whereas for female, three group of ages that had the highest percentage of cancer patients are 40~49, 50~59 and 60~69 age group.

**Table 2. 2: Cancer Incidence per 100,000 populations in Peninsular Malaysia 2006
(Malaysia Cancer Statistics, 2006)**

| Age, year | Male | | | Female | | |
|-----------|------|------|-------|--------|------|-------|
| | No. | % | CR | No. | % | CR |
| 0-9 | 85 | 0.9 | 4 | 52 | 0.4 | 2.6 |
| 10-19 | 279 | 2.8 | 13.4 | 199 | 1.7 | 10.1 |
| 20-29 | 393 | 3.9 | 22.9 | 523 | 4.4 | 31 |
| 30-39 | 668 | 6.7 | 49.6 | 1215 | 10.3 | 88.7 |
| 40-49 | 1312 | 13.2 | 111 | 2552 | 21.6 | 213.1 |
| 50-59 | 2135 | 21.4 | 248.6 | 3193 | 27.1 | 380.9 |
| 60-69 | 2644 | 26.5 | 577.8 | 2243 | 19 | 484.8 |
| 70+ | 2458 | 24.6 | 968.1 | 1822 | 15.4 | 588.1 |

From the Malaysia Cancer Statistic in 2006, out of 24.8 million people in Malaysia, 21773 were diagnosed with cancer. In order to predict total number of cancer patients in 2009, a few assumptions will be made.

In the First Report of the National Cancer Registry, 26,089 cases were registered among the population in Peninsular Malaysia in 2002. There are 10,656 unregistered cases and 3750 cases registered in Sabah and Sarawak. (Lim, 2003). Taking into account these figures, the total number of cancer patients in Malaysia in 2002 would be approximately 40 500.

By using the ratio of one cancer patients to 657 population, estimated cancer patients for 2009 is 43089 patients. Vita Omega Technologies will target on 0.09 % from total cancer patients which is **42**.

2.4.2 Malaysia Internet users

According to Household Used of the Internet User Survey 2008 (HUIS 2008) which conducted by Malaysian Communication and Multimedia Commissions (SKMM), there were average 1.9 million internet users with 51.9% are male users while 48.1% are female users. 65.8% of Malaysia internet users were adults age between 20~49 and

seniors age 50 years and above, 9.4%.

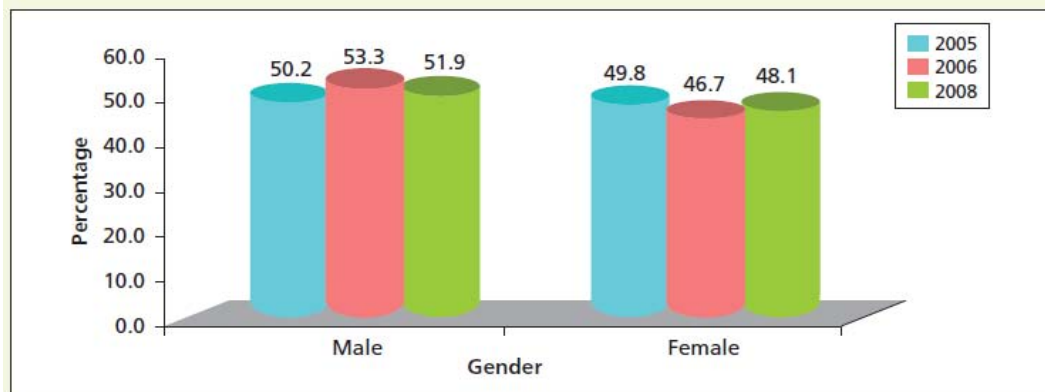


Figure 2.5: Percentage of male and female internet users in Malaysia

Source : www.skmm.gov.my

Table 2.3 : Percentage of age distribution among internet users in Malaysia

| Age category | Percentage share of household user base | | |
|--------------|---|------|------|
| | 2005 | 2006 | 2008 |
| Below 15 | 6.5 | 7.3 | 6.8 |
| 15-19 | 18.6 | 18.7 | 17.9 |
| 20-24 | 17.2 | 16.3 | 15.7 |
| 25-29 | 12.5 | 11.3 | 11.9 |
| 30-34 | 12.2 | 12.3 | 11.7 |
| 35-39 | 9.9 | 10.4 | 11.2 |
| 40-44 | 9.6 | 10.6 | 9.3 |
| 45-49 | 5.1 | 6.1 | 6.1 |
| 50 and above | 8.4 | 7.1 | 9.4 |

Source : www.skmm.gov.my

From the HUIS 2008, it also known that 94.4% of activities of the internet were searching information which is 1793600 users. Vita Omega Technologies assumes that 20% are searching for health information. Narrow down to those who search for cancers information which is estimated about 5%. This brings total number of the information searchers of cancer information are 17936 people. From this number, the company will target on 2.4% of cancer information searcher which is **430**.

Table 2. 4: Table shows percentage share of household user base in Malaysia

Source : www.skmm.gov.my

| Percentage share of household user base | | | |
|---|------|------|------|
| Internet usage | 2005 | 2006 | 2008 |
| Getting information | 40.5 | 84.5 | 94.4 |
| Communications by text | 99.6 | 80.7 | 84.7 |
| Leisure | 47.1 | 52.7 | 63.5 |
| Education | 46.8 | 45.9 | 64.5 |
| Financial activities | 14.6 | 23.6 | 31.8 |
| Public services | 12.7 | 12.0 | 29.2 |
| e-Government transactions ¹ | – | – | 19.8 |
| Online stock trading ¹ | – | – | 5.9 |
| Others | 1.3 | 0.2 | 0.7 |

¹ not canvassed in 2005 and 2006 survey.

Therefore, total target market for Cancer Diet System is 7,607 where 94% are among cancer information searcher and 6% are among cancer patients.

Cancer information researcher mainly are those who are interested in knowing about cancer by assuming that they are medical students, food science students, dietitian, oncologist or those who are working as cancer support groups. They come from different range of ages from student, dietitians, oncologist or even family members of cancer patients. They might use the information from Cancer Diet System for their studies, reference and sharing with other patients.

Cancer patients are normally those who are 40 years and above. Total number of cancer patients who are 40 years and above are less than total number of cancer information searcher. This because some patients who are in higher age group are computer illiterate and they do not have the energy to use the computer facilities.

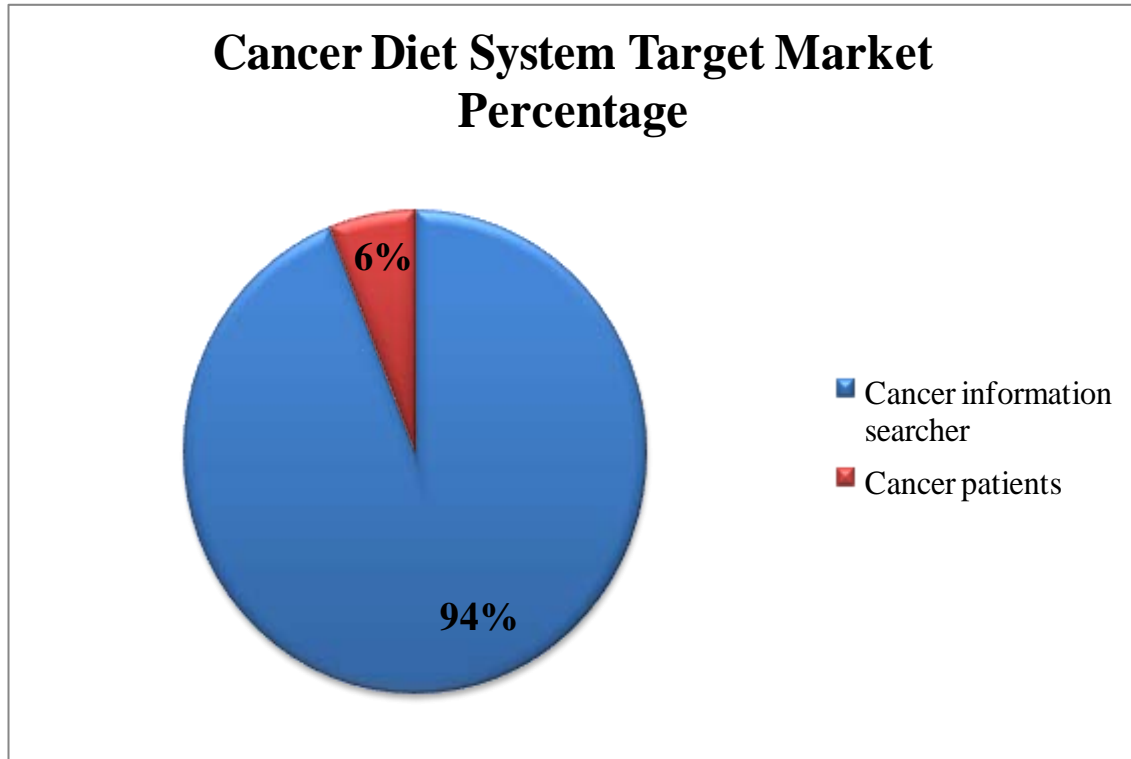


Figure 2. 6 : Percentage of Cancer Diet System Target Market

2.5 Revenue Model

Vita Omega Technologies will apply different revenue model in order to gain profits and high return-on-investment (ROI) rate.

2.5.1 Foods, Drinks and Supplement Products Advertising

Ingredients Advertising

Vita Omega Technologies will offer space for advertising to company that sells foods, drinks and supplement product. Their brands will appear next to the ingredients for recipes modules. This will encourage users to buy the brand product advertised. However, in order to secure the system quality and trustworthy by user, brand name chosen for

advertising will have licensed from Ministry of Health Malaysia and is a HALAL product certified by Jabatan Kemajuan Islam Malaysia (JAKIM). When clicked on the products advertise, user will be linked to the products company official websites. Figure shows the brand logo will display in ingredients of recipes suggested.

Table 2. 5: Examples on company brand advertisement


| Milk Shake Chocolate | |
|-----------------------------|---|
| Ingredients | |
| a. | 5 cups of  F&N Magnolia Fresh Milk |
| b. | 7 pieces of  Chipsmore Double Choc Cookies |
| c. | 4 scoop of  Nestle Vanilla Ice-cream |
| d. | 1 cups of melt chocolate |
| e. | 2 tablespoon of whip cream |

Table 2. 6: Price for ingredients advertising

| | |
|--------------------------------|-----------------------------------|
| Ingredients Advertising | |
| Price for 12 month | RM 250.00 |
| Size | 50 px x 50 px |
| Positioning | Next to the amount of ingredients |

Banner Advertising

Company that wants to advertise their product can do so by advertise through banner advertising. Banners would appear in fixed place on a Web page and will be link to advertiser`s websites. Vita Omega Technologies will offer two types of banner advertising that comes in four types of package.

Each banner can be advertised whether at the main page of Cancer Diet System

(first page after user had logon) and at miscellaneous page (page at each module). The prices offered were reasonable after comparing with other banner web advertising websites. This is because Vita Omega Technologies is still new and the traffic might be low in the first year of operation.

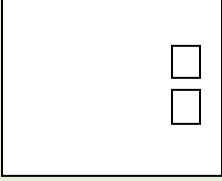
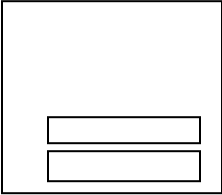
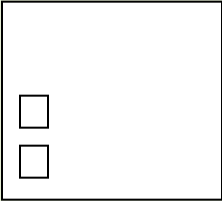
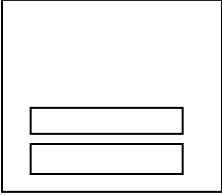
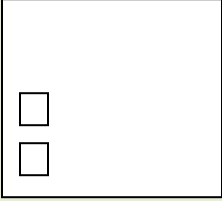
Table 2. 7: Differences of 460 x 60 px banner pricing advertisement

| | Webportal Malaysia | | Malaysiakini.com | | Cancer Diet System | |
|------------------------|--------------------|----------|------------------|----------|--------------------|----------|
| Size | 468 x 60 | 468 x 60 | 468 x 60 | 468 x 60 | 468 x 60 | 468 x 60 |
| Price per month | RM650.00 | RM550.00 | RM 100.00 | RM 40.00 | RM60.00 | RM50.00 |
| Section | Main page | Sub page | Main page | Sub page | Main page | Sub page |
| Positioning | Bottom | Bottom | Top | Bottom | Bottom | Bottom |

Table 2. 8: Differences of 220px x 150 px banner pricing advertisement

| | Myhyperstore.com | | Malaysiakini.com | | Cancer Diet System | |
|------------------------|------------------|-----------|------------------|-----------|--------------------|-----------|
| Size | 220 x 150 | 220 x 150 | 150 x 150 | 150 x 150 | 220x150 | 220 x 150 |
| Price per month | RM450.00 | RM450.00 | RM 100.00 | RM 40.00 | RM40.00 | RM30.00 |
| Section | Main page | Sub page | Main page | Sub page | Main page | Sub page |
| Positioning | Right | Right | Right | Bottom | Bottom | Bottom |

Table 2. 9: Banner advertising package and descriptions

| Package | Description |
|---|---|
| <p>Package A</p>  | <p>Front page 220px x 150px Upper right RM100.00/month 2 slots</p> |
| <p>Package B</p>  | <p>Main page 468px x 60px Bottom of page RM60.00/month 2 slots</p> |
| <p>Package C</p>  | <p>Main page 220px x 150px Bottom of page RM50.00/month 2 slots</p> |
| <p>Package D</p>  | <p>Sub page 468px x 60px Bottom of page RM60.00/month 2 slots</p> |
| <p>Package E</p>  | <p>Sub page 220px x 150px Bottom of page RM50.00/month 2 slots</p> |