Third Edition – January 2013 Innovation siness pportunities

Wealth for Malaysia AGENSY

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Contents









Third Edition - January 2013 Innovation Business Opportunities Wealth for Nalajysia

Foreword

Innovation is not invention. Innovation is about generating benefits, be they societal or financial. Invention is about discovering or creating something new. An invention only becomes an innovation when it generates societal or commercial value.

The Innovation Business Opportunities in this booklet are just that, opportunities to turn Malaysian inventions into Malaysian innovations. Malaysian researchers and inventors spend a great deal of effort in discovering new things. Now it's time for entrepreneurs and businesses to step forward and work towards creating value from these discoveries.

We need to work together to make this happen; researchers and inventors are great at the ideation and creation of inventions, businesses and entrepreneurs are great at creating and capitalising opportunities; neither party can work alone, inventors need industry to help them derive benefits from their work, while industry needs the inventors to continue pushing the boundaries and develop products and services that will help make Malaysian industry more competitive on the international market. However there is a big problem. The gap between industry and inventors is too large. This booklet is designed to help close the gap. Each of the projects here have the potential to become great products or services and we have tried to illustrate this by simplifying the technical descriptions and instead choosing to focus on the potential benefits of the projects, how they can be utilised and the potential value that they may be able to create. In doing this we hope to bridge the gap between industry and inventors by providing project overviews that industry can relate to. Only once the benefits have been made clear should the technical discussions take place.

If you are interested in any of the Innovation Business Opportunities that you see in this booklet please contact us at ibo@innovation.my for further details.



Tender Notice

Reference No.: RFQ002/2012/AIM

We are openly inviting all Malaysian businesses and entrepreneurs to participate in creating wealth for the nation by registering their interest in the projects. If you are interested in any of the Innovation Business Opportunities (IBO) that you see on this site and/or IBO Book please contact us at ibo@innovation.my.

Interested parties are required to submit their offers in the manner as prescribed below:-

- 1. Open to Malaysians and local companies only.
- 2. Bidding is opened for a period of thirty (30) days only from the date of this notice ("Local Bidding Period").
- 3. No late bids will be accepted and/or entertained.
- 4. The IBO Team will take one (1) week to compile the bids received from local bidders from the closing of Local Bidding Period.
- 5. If there are no local bids received during the Local Bidding Period, then the IBO team shall opened the offer to non-Malaysian and international companies accordingly. On which case, the bidding period will be extended for a further two (2) weeks period thereof ("International Bidding Period").
- 6. Should there be new local bids received during the International Bidding Period, the said local bidder will have to compete with the international bidder for the IBO.
- 7. AIM is not bound to accept the highest or any offer. AIM reserves the right to reject any and all bids received for goods cause if it is in the best interest of AIM to do so, or if the bid is not in compliance with the prescribbed bidding procedures thereof.
- 8. AIM's decision is final and no correspondence and/or appeal will be entertained.

Kindly provide the following information when submitting for the bid:-

- 1. Project Code and Name
- 2. Your Name
- 3. Your Company Name
- 4. Your Contact Number
- 5. Your Email address
- 6. Company Website (if applicable)
- 7. Company Profile (if available)

Any questions and/or enquiry concerning the bidding process should be directed to:-

IBO Team

Tel : 03-8319 3116 Fax : 03-8319 3499 E-mail: ibo@innovation.my

We will share the said information with the relevant owners of the innovations and contact you in due course.



Innovation Business Opportunity





Protective Coating For Steel (1UM002)

Low cost, environmentally-friendly steel coating using eggshell as filler

Protective Coating For Steel (1Um002)

Business Opportunity

Malaysia's construction sector consumed about 6 Million tonnes of steel in 2011⁽ⁱ⁾. The potential market for intumescent protective coating is huge, with an estimated value of USD 600 Million as there is lack of awareness in fire-protective coatings in Malaysia where most of the buildings do not apply them.

Innovation/ Intellectual Property

The research team has developed an optimal formulation for intumescent steel coating material using eggshell as filler and silica fume as binder. A patent application covering the production process and formulation of the new intumescent has been filed in Malaysia - PI 2010700049.

Industry Overview

The total global market size for intumescent coatings is valued at USD 352 Million in 2008 and is expected to grow at a CAGR of 9.5%, reaching USD 664 Million by 2015.⁽ⁱⁱ⁾ Market growth in Europe and US will be slow, while the growth rates in Asia Pacific are expected to increase rapidly as these developing economies are recovering and are experiencing rapid industrialization. Further, the increasing of stringent fire protection regulations globally are driving the demand for protective coatings and it is expected to double by 2018,⁽ⁱⁱⁱ⁾ dominating the future markets in various application through technology improvements, price and efficiencies. Currently, Asia-Pacific represents the largest and the fastest growing regional market for coatings where Asia Pacific accounted for 35% of the global market share^(iv) and is expected to reach 43% by 2014, growing above the global average.^(iv)

Competitive Advantages

This product uses water-based epoxy resin which do not releases volatile organic compounds and it is odorless. It prolongs the lifetime of coated steel and maintains its structural stability. Moreover, it is a low cost solution that is made of environmental friendly recycled material- eggshell.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute the product within South-East Asia as a cost-efficient alternative and to (2) license the formulation globally to fire protection solution providers.

Project Challenges

One of the key challenges for this project is to gain regional regulatory and standards approvals from relevant agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory and standards requirements. Preferred Partner/ Collaboration Dulux, Nippon and Jotun, the top 3 players in Malaysia will be one of the best choices as they are all notable international paint brands where issues regarding international regulatory can be solved easily with professionals readily working for them.

Innovation Business Opportunities

Wealth for

Project Overview

A novel, intumescent coating that uses recycled chicken eggshell as a bio-filler which lower the production costs, fulfills fire protection regulations and maintains the integrity and properties of steel, thus preventing structural collapse.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally. This can be done by emphasizing the product's potential in fire protection for different application at a lower cost, using ecofriendly recycled material.

Competitor Analysis

Eco-friendly intumescent steel coating material is a matured industry in developed countries and there are many international players such as AkzoNobel, Nippon Paint, BASF SE, DuPont and etc. operating and offering different types of eco-friendly coating materials globally. However, eco-friendly intumescent steel coating is still new in Malaysia.

Project Status

The intumescent steel coating material formulation has been developed and tested - the product has been proved to be offering effective fire protection when used on steel.

Financials

The potential USD 600 Million protective coating market is estimated at 20% of the 6 million tonnes of steel consumed for construction, while the price for protective coating is estimated at USD 500/tonnes^(v). Besides, Intumescent coating market is accounted for 3% of the market. Thus, Malaysia's market size is valued at USD 18 Million (RM 54 Million). The projected revenue is as below assuming this product is growing at 3.7%⁽ⁱ⁾ (construction growth) and is able to capture 20% of the market share in 3 years' time:

 Year 1: RM 54 Million x 103.7%
 x 10% = RM
 5.6 Million

 Year 2: RM 54 Million x 103.7%
 2 x 15% = RM
 8.7 Million

 Year 3: RM 54 Million x 103.7%
 3 x 20% = RM
 12.0 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for regulatory control processes that must be completed before commercializing this product.

Source: (i) SEAISI (2012), Construction Industry: The Major Steel Consuming Sector in ASEAN [online] Last accessed 25th September 2012 at: http:// www.seaisi.org/news/news_view.asp?news_id=2887 (ii) Frost & Sullivan (2011), Frost & Sullivan's Study on Potential Market for Carbon Nanomaterials' Applications [online] Last accessed 26th September 2012 at: http://www.nist.gov/cnst/upload/Valenti-NIST.pdf (iii) 4-Traders (2011), AKZO NOBEL: AkzoNobel Opens & Million Fire Protection R&D Facility June 7, 2011 [online] Last accessed 25th September 2012 at: http://www.4-traders.com/AKZO-NOBEL-6277/ news/AKZO-NOBEL-AkzoNobel-opens-%807-million-fire-protection-R-D-facility-June-7-2011-13656646/ (iv) Coatings World (2011), The Asia-Pacific Paint and Coatings Market [online] Last accessed 26h September 2012 at: http://www.coatingsworld.com/issues/2011-08/view_features/the-asia-pacific-paint-and-coatingsmarket/ (v) Industrial Galvanizers, Life-Cycle Costs of Industrial Protective Coatings [online] Last accessed 25th September 2012 at: http://www.ingal.com.au/ IGSM/22.htm



Innovation Business Opportunity





Integrated Traffic Monitoring System (1UM003)

Cost-effective monitoring system for overloaded trucks moving on roads





Business Opportunity

There is an opportunity to commercialized this system for better road safety as there are 2,209 overloaded vehicles were given summon in 2009⁽ⁱ⁾ and the Land Public Transport Commission (SPAD) is currently enforcing overloading strictly with penalty ranged from RM 1,000 to RM 500,000.⁽ⁱⁱ⁾

Innovation/ Intellectual Property

The research team has selected the latest quartz sensor technology to provide "weigh-in-motion" sensors that provide long term stability, fatigue resistance and insensitivity to temperature changes in all weather conditions. This innovation is protected by copyrighted software.

Industry Overview

In Malaysia, road accidents are increasing from 265,175 cases in 2000 to 280,417 in 2010.(iii) Malaysia has a rate of 5.17 deaths for every 10,000 vehicles and is aiming to reduce the fatal road accident rate to 2 deaths per 10,000 registered vehicles by 2020.⁽ⁱⁱⁱ⁾ The situation is worst in Thailand and Indonesia with the rate of 8.4 and 9 accordingly. (iii) Overloaded trucks' situation in Malaysia is quite serious as there are 229 road accidents death caused by lorry in 2006.^(iv) As the number of new registered commercial vehicle is growing over the years from 16,842 in 1980 to 65,010 in 2011^(v), it is acknowledge that the number of overloaded trucks will be increasing; which will then lead to more road accidents. In addition to this situation, Aggregates Association of Singapore has estimated 500 Malaysian-registered trucks are being overloaded transporting concrete-making materials into Singapore daily.(vi)

Competitive Advantages

This system is built with reliable components and it is then integrated with bespoke software in Malaysia as a cost competitive product to be offered to the market. In addition, this system can collect data on vehicles by type, speed, weight, number of axles an etc.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this system within South-East Asia as a cost-efficient alternative and to (2) license this system regionally to software companies in developing nations.

Project Challenges

The Malaysian government has just enforced a new traffic monitoring system recently and it will be a challenge to convince them on a similar system. Thus, the only key solution is to provide alternative options. E.g. integrating this system to the current system or setting up nationwide weighing stations.Preferred Partner/ Collaboration Integrated Transportation Solutions Sdn Bhd has been formed to commercialize this technology and is looking forward to work with appropriate government departments.

Project Overview

An integrated traffic monitoring system which is customized for use in Malaysia to solve the problem of overloaded trucks on road.

Business Idea

To design, develop, produce, distribute and license the system in a form that can be mass marketed across developing nations. This can be done by emphasizing the quality of reliable components with different functionality and features that can be easily integrated.

Competitor Analysis

There are still no similar commercial "weigh-in-motion" systems that are currently available in Malaysia which provide similar functionalities and features.

Project Status

This system has been tested and demonstrated at two different sites in Kuala Lumpur and it is now ready to be marketed.

Financials

As weighing station is not popular in Malaysia and only JPJ has the system, the financials will be built based on services provided per lorry, assuming the companies from the value chain are willing to pay for the service. According to UNESCAP, as of July 2010, there are 984,142 registered lorries in Malaysia and it is estimated that the companies are willing to pay for the offer provided: RM39 per lorry per month and the estimated market size will be RM 460 Million. This integrated traffic monitoring system is expected to capture at least 10% of the market share in 3 years' time; assuming the market will be growing at 3.7%, with the law enforcement by the government where every lorry must be weighted before heading to the road.

 Year 1:RM 460 Million x 103.7%
 x
 3% = RM 14.0 Million

 Year 2: RM 460 Million x 103.7%2 x
 6% = RM 30.0 Million

 Year 3: RM 460 Million x 103.7%3 x 10% = RM 51.0 Million

Funding Requirement

Key funding required will be to further develop this system into various forms and platform for easier integration to existing system used by other developing nations.

Source: (i) Borneo Post Online (2010), Private-owned Vehicles Biggest Culprits: JPJ [online] Last accessed 2nd October 2012 at: http://www.theborneopost. com/2010/01/03/private-owned-vehicles-biggest-culprits-jpj/ (ii) Borneo Post Online (2012), Lorry Owners Seek Grace Period [online] Last accessed 2nd October 2012 at: http://www.theborneopost.com/2012/06/07/lorry-owners-seek-grace-period/ (iii) The Star Online (2011), Get to root cause of road accidents [online] Last accessed 2nd October 2012 at: http://thestan:com.my/news/story.asp?file=/2011/1/11/focus/9871617&sec=focus (iv) Jurutera (2008), Road Accidents- Human's Fault? [online] Last accessed 2nd October 2012 at: http://dspace.ummap.edu.my/dspace/bitstream/123456789/15696/1/Feature-Road%20Accidents%204pp.pdf (v) Malaysia Automotive Info (2012), Summary of Sales & Production Data [online] Last accessed 2nd October 2012 at: http://www.maa.org.my/info_summary.htm (vi) ST701 (2012), Overladen Trucks a "Growing Problem", Article from The Straits times [online] Last accessed 2nd October 2012 at: http://cars.st701.com/ articles-cars/motoring-news/overladen-trucks-a-growing-problem/a/47797



Innovation Business Opportunity



Alternative cigarettes using food flavourings that feels like the real thing, without the harmful effects of tobacco





Business Opportunity

The world tobacco industry generated sales of almost USD 721 billion in 2010.i Annually 6.6 million people die worldwide either due to smoking or due to second hand smoke. The number of smokers in Malaysia is increasing steadily from 4 million smokers and being the cause of death for over 10,000 people yearly. Victorian cigarette is an ideal alternative as it satisfies the basic cravings of a smoker without being harmful to both the smoker and the people surrounding the smoker.

Innovation/ Intellectual Property

All Victorian flavors contain no more than 15 substances, primarily consisting of food flavorings, propylene glycol, and nicotine. A patent application covering the production process and formulation of the new cigarette has been filed in Malaysia-PI 2011006111.

Industry Overview

The market size for the world tobacco industry in the year 2010 was USD 721 billion as cigarettes represent the leading market with revenue exceeding USD 681 billion. Currently, there are over 1.3 billion smokers in the world and this rate is expected to grow up to 4% each year. ⁽ⁱ⁾ In 2003, being the second largest tobacco producer in the world after China, India produced 572 million kg's of tobacco. The Indian tobacco market generated total revenues of USD 9.9 billion in 2007 representing a compound annual growth rate (CAGR) of 6.6% for the five-year period spanning 2003-2007.⁽ⁱⁱ⁾ The tobacco industry in Malaysia is estimated to be worth more than USD 2 billion (RM 6.4 billion) a year.⁽ⁱⁱⁱ⁾

Competitive Advantages

Despite having the same body structure, this product also gives the same feeling of the existing cigarette. It satisfies the nicotine craving without the need for burning tobacco. Thus, neither fire nor second hand smoke will be generated. Victorian Cigarettes are essentially like a regular cigarette in terms of look and feel BUT without the harmful effects of tobacco.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute the product as a healthier alternative and to (2) license the formulation globally to cigarette manufacturers.

Project Challenges

One of the key challenges for this project is to gain regional regulatory and standards approvals from relevant agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory and standards requirements.

Preferred Partner/ Collaboration

The ideal collaborators will be the cigarette manufacturers as they can promote and sell this product as an alternative to enhance healthy lifestyle.

Project Overview

Victorian Cigarette uses a micro-chip battery technology that powers a heating system. This system then heats up the liquid contained in the cigarette which turns into vapour.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally. This can be done by emphasizing on the product's benefits to smokers, second hand smokers and also the environment.

Competitor Analysis

Most of the products that used as a better alternative to cigarettes can be Victorian Cigarettes potential competitor analysis. For example, electronic cigarettes, nicotine gums and nicotine patches.

Project Status

This product is available in the market but in a very limited quantity. The team would like to propose this product to potential manufacturers emphasizing on its advantages and health benefits.

Financials

In the year 2012, Malaysian population would be approximately 29.3 million people with an estimated 6.74 million of them being smokers. Since each Victorian Cigarettes is equivalent to 20 sticks of regular cigarettes, hence, it is assumed that an average smoker would buy just about two packets of Victorian Cigarettes per month. Assuming that atleast 10% of the smokers are health conscious, the potential market for health conscious smokers is valued at RM 252 Million, with each packet of Victorian Cigarettes priced at RM 15. The projected financials will be as below, assuming Victorian Cigarettes will be growing at the same global growth rate of 4%, capturing at least 10% of the health conscious smokers' market in the next 3 years due to enforcement of anti-smoking regulations.

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        Year 1: RM 252 Million x
        4 % = RM 10 Million

        Year 2: RM 262 Million x
        8 % = RM 21 Million

        Year 3: RM 273 Million x
        10 % = RM 27 Million
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Funding Requirement

The key funding requirements for this project are for scaling up the manufacturing and marketing operations of this product to meet the potential demand in this region.

Source: (i) **REPORT LINKER, Tobacco Industry: Market Research Reports, Statistics and Analysis** [online] Last accessed 12th December 2012 at Tobacco Industry: Market Research Reports, Statistics and Analysis (ii) **INDIAN MIRROR, Indian Tobacco Industry** [online] Last accessed 12th December 2012 at http:// www.indianmirror.com/indian-industries/tobacco.html (iii) **THE SUN DAILY, Contraband Cigarettes Sellers May Have Licence Revoked** [online] Last accessed 12th December 2012 at http://www.thesundaily.my/news/263082



Innovation Business Opportunity







Rapid CanDETECT, A detection kit for Candida species (1UPM004)

A rapid and portable detection kit for fungus infection



Rapid CanDETECT, A detection kit for Candida species (1UPM004)

Business Opportunity

An opportunity to develop a novel diagnostic kit, called Rapid CanDETECT, for the identification of the important Candida species, a form of fungi infection, which affects 2-11 out of every 100,000 population in the world and has a mortality rate of 30-55%.(i)

Innovation/ Intellectual Property

A patent application covering the oligonucleotide probes and primers has been filed in Malaysia (PI 2011000631). The patent is for a method for detecting Candida species in a specimen by polymerase chain reaction.

Industry Overview

300,000 cases of Candidaemia are predicted worldwide, with a mortality of 30-55%, where the numbers rose in the USA by 52% between 2000 and 2005 $^{\rm (i)}$

Around 150,000 of the 7.5 million patients admitted to intensive care (ICU) in Europe, USA and Japan each year grow Candida in their urine (a rate of 2.7% of ICU admissions) and is a common finding in hospitalised patients and those with catheters (approximately 16%) especially those in ICU.

In Malaysia, Frost and Sullivan estimates a total of 30,000 ⁽ⁱⁱ⁾ cases of systemic fungal infection patients are admitted into hospitals yearly from 2011, rising from 25,000 in 2003.

Competitive Advantages

Unlike other detection which requires lengthy blood culturing process, the Rapid CanDETECT uses Oligonucleotide primers and probes. It is able to readily identify the 8 most common causative agents of Candidiasis over current methods.

The Rapid CanDETECT kit offers the following benefits: Rapid – results obtained within 1 working day Versatile - detects 8 Candida species Sensitive – requires as little as 1-10 CFU/ml serum Highly selective and specific – no cross hybridisation between the 8 species or other bacteria, virus and fungi.

Proposed Business Model

The diagnostic kit can be marketed as a stand-alone diagnostic kit for Candida species or as part of an all-in-one diagnostic kit to detect other common pathogens or fungi.

The kit may be marketed under a specific brand name sold via channel marketeers and resellers, or licensed to other geographical markets for sale under other brand name.

Project Challenges

The following are the challenges identified: the strict compliance with regulations governing medical diagnostic devices has to be complied, and the consistent and quality control required to mass produce the kit.

Preferred Partner/ Collaboration

The preferred partners in this project should ideally be already involved in the sales and marketing of medical diagnostic devices and has the network channel to hospitals, clinics and medical facilities. They may be medical device resellers, pharmaceutical or bio-technology companies.

Project Overview

The project is for the design and development of a rapid detection kit for life-threatening fungal infection of the Candida species The technology enables early diagnosis so that appropriate treatments can be initiated quickly.

Business Idea

To design, develop, produce and distribute a diagnostic kit for routine clinical testing of Candida species. This invention may be of interest to companies involved in the making of molecular diagnostic products against infectious diseases.

Competitor Analysis

The common method of detecting the Candida species is done either via microscopic examination or culturing. With a simple diagnostic kit, home users may be able to detect on their own. Some available rapid test kits for Candida are as follows: Candida albicans Antigen Diagnostic Test kits from Nanjing Liming Bio-Products Co., Ltd, China and Jei Daniel Biotech Corp, Diagnostic kit CANDIDA-Screen from Erba Lachema s.r.o, Syscan3 and CanDia5, Kits for Detection of Anti-Candida Antibodies from Rockeby Biomed Ltd.

Project Status

The project team had collected a proof of concept data from Candida clinical samples and successfully conducted a screening using the Rapid CanDETECT kit at Universiti Malaya Medical Centre (UMMC). The results showed that the kit accurately identified the Candida species in all the samples tested.

Financials

Existing Candida Albicans PCR Detection Kits⁽ⁱⁱⁱ⁾ are marketed online at retail selling price ranging from USD 584 – USD 824 per package. Assuming this product is priced at a conservative low retail price of RM 500 per package, with a local market penetration of say, 10% with CAGR 5%, will give potential revenue of:

Year 1:	30,000 x 10% x RM500	=	$\mathbf{R}\mathbf{M}$	1.5	Million
Year 2 :	30,000 x 10% x 1.05 x RM500	=	RM	1.6	Million
Year 3:	30,000 x 10% x 1.05 x 1.05 x RM500	=	RM	1.7	Million

Funding Requirement

Key funding costs will be for the setup of the mass production facilities. Other costs are for the sales and marketing of the product, including working capital to get started.

Source: (i) How Common are Fungal Diseases?, Fungal Research Trust, Jun 18, 2011, updated Oct 8, 2011 [online] Last accessed 17 Oct 2012 at: http:// www.fungalresearchtrust.org/HowCommonareFungalDiseases2.pdf (ii) Systemic Fungal Infection Therapeutics Market: Number of SFI Patients and Prevalence (Malaysia), 2003-2012, Chart 3.1, Frost & Sullivan 2009 [online] Last accessed 17 Oct 2012 at: http://www.reportbuyer.com/samples/405ccc433 8a14d23a734fde494b41f44.pdf



Innovation Business Opportunity







Novel presentation of Islamic signages using LED



Aslyimage: Islamic Icons In Digital Form (3IND002)

Business Opportunity

The global population is expected to reach over 8 billion by 2030 and Muslim population will be accounting for 26.4% of the world population, reaching 2.2 Billion by 2030.⁽ⁱ⁾ Further, it is estimated that Islamic trade, the market for Shariah compliant products is currently worth over USD 2 Trillion.⁽ⁱⁱ⁾

Innovation/ Intellectual Property

The inventors turned each of the chosen words to symbols and modified them to 3D Islamic calligraphy art form which is followed by composition and introduction of various LED. ASLYIMAGE is protected globally by copyrights and registered as industrial design.

Industry Overview

The global Muslim population currently is nearly 1.6 Billion of the world population with a huge potential growth for brands and products from Muslim countries.⁽ⁱⁱⁱ⁾ By 2030, 79 countries are expected to have a million or more Muslims⁽ⁱⁱⁱ⁾, growing at a CAGR of 1.5%(iv). Majority of the Muslims, which is approximately over 60% of them will continue to live in Asia Pacific, 20% will live in Middle East and North Africa and the minorities will remain in Europe and America.⁽ⁱⁱⁱ⁾ Also, the worldwide packaged LED market is worth USD 12.5 Billion in 2011, growing nearly 10% from USD 11.3 Billion in 2010 and is expected to reach USD 13.3 Billion in 2013.^(v) Among the packaged LED, LED signs and channel letters accounted for 11% and was valued at USD 1.4 Billion in 2011.^(v)

Competitive Advantages

The signage can be customized to suit any logos and the designs are cost effective with discount for mass orders. All the products are designed and hand made in Malaysia with a unique code to detect counterfeits. Further, all the products are fitted with dustproof lens for long lasting protection and carries warranty for its original intact package.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this innovation globally to Islamic industry.

Project Challenges

One of the key challenges for this project is to gain recognition as most of the Muslims have their own traditional signage and they might be reluctant to buy an additional one. Thus, the best solution is to promote this product through government's encouragement campaign or innovative marketing strategy that can create public awareness.

Preferred Partner/ Collaboration

Islamic Associations such as Islamic Relief Malaysia (IRM) or Islamic shop/online shop such as Simply Islam will be the best choice to start promoting this product to a wider market as international associations and online shops can help to reach global Muslim customers. Hence, issues regarding promotion and marketing can be solved easily.

Innovation Business Opportunities

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Project Overview

Reverent words that are uniquely designed in 3D calligraphy to form handicraft signage and logo in colourful LED and elegantly framed with lens for long lasting protection.

Business Idea

To design, develop, produce, distribute and license ASLYIMAGE in a form that can be mass marketed across Islamic industry globally. This can be done by emphasizing the product's effort in glorifying ALLAH and ISLAM.

Competitor Analysis

Apparently, there are limited to even no commercial competitors currently developing industrial scale Islamic icon in digital form. However, this product will be competing with other Islamic related products.

Project Status

ASLYIMAGE has been developed and the inventor would like to speak to potential companies for joint venture or acquisition to further develop to its full universal potential.

Financials

The Muslim population in Malaysia is approximately 17.5 Million, which is 1.09% of the world Muslim population. Global LED signs and channel letters was valued at USD 1.4 Billion in 2011^(*), with Muslim users' market valued at USD 319.2 Million. Thus, the projected market size for Malaysia's Muslim population will be valued at USD 3.48 Million (RM 10.44 Million). With the growing Muslim populations, we are assuming 50% of the LED signs market will be Islamic related product and ASLYIMAGE is able to capture at least 30% of the market in 3 years' time with a global CAGR of 1.5%.

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      Year 1: RM 5.22 Million x 101.5% x 10% = RM 530 000

      Year 2: RM 5.22 Million x 101.5%2 x 20% = RM 1.08 Million

      Year 3: RM 5.22 Million x 101.5%3 x 30% = RM 1.64 Million
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Funding Requirement

The start-up process can be optimized by collaborating with existing Islamic product manufactures for industrial scale production know-how and infrastructure.

Source: (i) TIME NewsFeed (2011), 2.2 Billion: World's Muslim Population Doubles [online] Last accessed 7th January 2013 at: http://newsfeed.time. com/2011/01/27/2-2-billion-worlds-muslim-population-doubles/ (ii) KPJ Healthcare (2012), 2nd Oxford Global Islamic Branding and Marketing Forum 2012 12-13 July, Kuala Lumpur, Malaysia [online] Last accessed 8th January 2013 at: http://www.kpjhealth.com.my/event-detail.php?id=67 (iii) The European Financial Review (2011), Islamic Branding and Marketing: Opportunities and Challenges [online] Last accessed 8th January 2013 at: http://www. europeanfinancialreview.com/?p=3346 (iv) The Malaysian Insider (2011), Muslim Birth Rate Falls, population to grow more slowly [online] Last accessed 8th January 2013 at: http://www.themalaysianinsider.com/features/article/muslim-birth-rate-falls-population-to-grow-more-slowly (v) LEDs Magazine (2012), LED lighting market to grow while LED component market goes flat (MAGAZINE) [online] Last accessed 8th January 2013 at: http://ledsmagazine.com/features/9/3/2



Innovation Business Opportunity





My-Drgtm Software (1UM003)

Robust and comprehensive Hospital Information System (HIS)



My-Drgtm Software (1UM003)

Business Opportunity

Global hospital information systems (HIS) market is expected to reach USD 17 Billion by 2017 due to huge opportunities from huge underserved market that needs upgraded and integrated legacy healthcare IT systems with advanced automated systems.⁽ⁱ⁾

Innovation/ Intellectual Property

MY-DRGTM Software has adapted the creation of standard packages of treatment for patients and the mix of clinical conditions and treatments available, building upon international frameworks.

Industry Overview

The global HIS market is recovering healthily in 2010 due to the development and improvement enforced by the government in healthcare segment. Small private practices with 4-5 doctors are underserved by IT as they are often lack of resources to implement HIS.⁽ⁱ⁾ Thus, these are the perfect opportunity for HIS providers to tap on. On the other hand, over the next few years, healthcare industry will be focusing on addressing huge demand for affordable-yetquality healthcare services. Europe continues to be the largest regional market for HIS, while Asia Pacific represents the fastest growing regional market with a CAGR of 11% over the analysis period.⁽ⁱ⁾ Developing nations especially China and India will additionally contribute growth in the global HIS market. Since small private practices are the underserved market, clinical information system is expected to be the fastest growing market segment.⁽ⁱ⁾

Competitive Advantages

A core component of MY-DRGTM software, the "Case-Mix Grouper", is a software engine that takes all possible diagnoses and treatment options and then combines them into similar groups with customization features for composition groups in different countries. In addition, to the mix of diagnosis and treatments, Malaysian's healthcare payment system has been integrated into the software.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute MY-DRGTM within South-East Asia as a cost-efficient alternative and (2) license MY-DRGTM to other software company providers globally.

Project Challenges

Every hospital has their own HIS and their way of operating it. It will be a challenge to convince the hospitals to change to a new system. Thus, the best solution is to emphasize what MY-DRGTM can provide them and after sales service will be provided as well. E.g. Trained professionals will be sent to help them in integrating, implementing, supporting and educating their staff every single thing on MY-DRGTM.

Preferred Partner/ Collaboration

Columbia Asia Hospitals, Pantai Hospital, KPJ Hospital and etc. will be one of the best choices as they are all notable private hospitals with chains around Malaysia. In addition, Columbia Asia is an international chain hospital where this might provide MY-DRGTM an opportunity to enter into other developing countries.

Innovation Business Opportunities

Wealth for

Project Overview

A hospital management software to better assess cost effectiveness and to improve quality of care in Malaysia.

Business Idea

To design, develop, produce, distribute and license the software in a form that can be mass marketed across hospital globally emphasizing its potential in measuring cost effectiveness and quality of care at hospitals.

Competitor Analysis

HIS is a matured market in developed countries and there are many international players such as GE Healthcare, Philips Medical System, Siemens Healthcare and etc. operating and offering similar or advanced HIS globally. However, HIS is still new developing nations like Malaysia, China, India and etc.

Project Status

MY-DRGTM is now ready to be licensed for use in other countries, especially in developing countries with professionals trained to customize the system.

Financials

According to Inside Malaysia (2012), as of August 2011, there are 145 public hospitals in Malaysia and less than 10% are using information system (IS) tools. As MY-DRGTM is primarily targeting hospitals, clinics will not be included. MY-DRGTM will be priced at around RM 2.5 Million based on HIS for medium sized hospitals in US, with only 2 systems included, which are Clinical IS and case mix grouper system. MY-DRGTM will be growing at a CAGR of 11% matching Asia Pacific's market growth, targeting 3 hospitals per year due to resistant in changing to new system. In year 2, the business is expected to enter developing nations like China and India with at least 10 of MY-DRGTM will be sold per year and the market will be growing at a CAGR of 11%.

Year 1: RM 8.3 Million

Year 2: RM 9.2 Million + RM 27.8 Million = RM 37.0 Million **Year 3**: RM 10.3 Million + RM 30.8 Million = RM 41.1 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially expenses for training and support to healthcare professionals globally.

Source: (i) **GIA (2011), Hospital Information Systems (HIS)- A Global Strategic Business Report** [online] Last accessed 17th October 2012 at: http://www. strategyr.com/pressMCP-1617.asp (ii) **AHK (2011), "Market Watch 2011", The Healthcare Sector in Malaysia** [online] Last accessed 2012 at: http://malaysia. ahk.de/fileadmin/ahk_malaysia/Bilder/Others/Healthcare_2011_latest_3_- Michelle Lim.pdf



Innovation Business Opportunity







Vextra Tropical Dryer (3IND003)

Space-saving, effective and affordable indoor clothes dryer



Vextra Tropical Dryer (3IND003)

Business Opportunity

The VEXTRA Tropical Dryer has the potential to replace conventional dryers. It has a unique design that can also double up as a closet which can be used to store the clothes after drying. Compared to conventional dryers the VEXTRA takes a greener approach to artificial drying and the result is a more efficient system. A lot of emphasis and incentives have been given for Green technology used for development and application of products in Malaysia as well as Globally.

Innovation/ Intellectual Property

The VEXTRA dryer is built around the principles of Radiation, Evaporation, and Convection to circulate heated air which will proceed to dry clothes. SIRIM Safety Approval was obtained on 17th January 2002 (SIRIM EL20020004) and obtained approval from Suruhanjaya Tenaga Malaysia on 9th March 2002 with certificate number 000600/02.

Industry Overview

The global market for smart home appliances will likely reach USD 7.7 billion in 2012. Expansion through 2016 is expected to occur at a five-year CAGR of nearly 8% to reach USD 11.3 billion ⁽ⁱ⁾. India will be the world's fastest growing market followed by China, Africa/Mideast and Western Europe. Southeast Asia's emerging markets are in the process of rapid modernization and savvy consumers here are obviously eager to make new purchases or upgrade their existing appliances to better or greener technology. In first half of the year, consumers in Singapore, Malaysia, Thailand, Indonesia, Philippines and Vietnam spent over USD 3.5 billion on 11.7 million units of these large household appliances.⁽ⁱⁱ⁾

Competitive Advantages

The VEXTRA is compact and suitable for home use. It's priced at an affordable rate making it accessible to everyone and it's easy to use. It also built to operate with low power consumption and low maintenance. It consumes very little foot space and when it is not in use, it can be folded up and stored. Further, it has the ability to double up as a storage space.

Proposed Business Model

Two business models are proposed, (1) To design, develop, produce and distribute VEXTRA dryer in South-East Asia as a cost efficient alternative and (2) license VEXTRA dryer to suitable home appliance manufacturers.

Project Challenges

There is a perception that dryers are costly and require high maintenance and due to the tropical climate with plenty of sunshine, there isn't a need for a dryer. Most modern washing machines come with a built in dryer but they are very costly and are not affordable for everyone.

Preferred Partner/ Collaboration

Existing collaboration are with SIRIM Bhd, Kee Hin Industries Bhd (Khind), APM Trim Parts Sdn Bhd, Daycoins Technology Sdn Bhd, Formosa-Prosonic Sdn Bhd. Potentially, new partners or collaborators would ideally be those from electronics manufacturing industry.

Innovation Business Opportunities

Wealth for

Project Overview

Artificial drying device for a variety of articles that include clothes, shoes and bags. It is targeted for high rise buildings and designed mainly for use in tropical climates.

Business Idea

To manufacture and distribute the VEXTRA dryer locally to aid government efforts in beautifying urban areas, promote tourism as well as to promote a healthy/modern lifestyle.

Competitor Analysis

There are similar products such as the Air-O-Dry and Taiyohoshi. The operation capabilities and function are very similar and they are within the price bracket of RM 300 to RM 500. This product is in direct competition with conventional clothes dryer with established brand names such as Bosch, LG and Samsung. However, these brands are in a much higher price bracket and may not appeal to everyone.

Project Status

The project has been tested and verified by SIRIM and Suruhanjaya Tenaga Malaysia and is ready for large scale commercialization.

Financials

Based on the 11.7 Million units of large household appliances bought by South East Asian consumers in 6 months, Malaysia is assumed to have a 20% share of the washing machines sold, consuming 1.4 Million units for 2012. Assuming one tropical dryer got sold for every 100 units of washing machine sold; a total of 14,000 units of dryer are estimated to be sold. Thus, the potential market size for tropical dryers is estimated at RM 7 Million, with the estimated price per unit at RM 500⁽ⁱⁱⁱ⁾. With VEXTRA dryer's multi-purpose usage, it is assumed to capture at least 30% of the market share in 3 years' time, growing at a CAGR of 8%.

Year 1: 14,000 x 10% x RM500 x 1.08 = RM 756,000 Year 2: 14,000 x 20% x RM500 x 1.082 = RM 1.6 Million Year 3: 14,000 x 30% x RM500 x 1.083 = RM 2.7 Million

Funding Requirement

Funding is required for targeted marketing and to take the product to wide scale production capacity.

Source: (i) Washing Machines Lead \$7.7 Billion Smart Appliances Market, SBI Energy, [online] last accessed 14th December 2012: http://www.sbireports. com/about/release.asp?id=2903 (ii) Appliances boom in SE Asia, INSIDERETAIL.ASIA, [online] last accessed 14th December 2012: http://www.insideretail.asia/ InsideRetailAsia/IRNews/Appliances-boom-in-SE-Asia-6021.aspx (iii) 88DB.com [online] last accessed 14th December 2012: http://my.88db.com/malaysia/Kuala-Lumpur/Home-Services/Laundry-Services/ad-62829/



Innovation Business Opportunity

RM 30.6_{Million} Potential Yr3 Revenue



Algae Oral Vaccine Against White Spot Syndrome Virus (1UM014)

Food for shrimps with vaccine against WSSV



Algae Oral Vaccine Against White Spot Syndrome Virus (1UM014)

Business Opportunity

Shrimp industry is growing at a CAGR of 20% over the last two decades in Asia. However, White Spot Syndrome Virus (WSSV) has caused at least USD 1 Billion loss for the past 10 years.⁽ⁱ⁾

Innovation/ Intellectual Property

The recombinant DNA technology incorporates several DNA sequences of WSSV into the algae genome where expression of the viral protein produces antigens that trigger an immune response in prawns against WSSV. Patent applications covering immunization in shrimps and production of bioactive agents and vaccines against WSSV have been filed- PI 2010005261.

Industry Overview

World production of farmed shrimp fell 20% to 2.5 million tonnes in 2011⁽ⁱⁱ⁾ due to shortfalls in Asia, the biggest producer which accounted around 75% of the global farmed shrimp production.⁽ⁱⁱⁱ⁾ This is due to bad weather and production problems such as WSSV. Since 1992, WSSV caused major losses to shrimp industry globally. Ecuador, once the largest exporter of shrimp to USA, have declined their export from their highest peak in 1998 at 114 000 tons to just over 46 000 tons today due to WSSV.^(iv) China, recorded a 80% of loss in shrimp production, which is estimated to value at USD 1 Billion^(v) and Thailand's losses due to yellowhead disease and WSSV were estimated at USD 650 Million.^(vi) As for Malaysia, losses in Sabah alone were estimated to be in the region of RM 60 Million.^(v) Furthermore, in 2011, The Marine Affairs and Fishery Ministry in Jakarta has rejected and returned 13.04 tons of shrimp back to Malaysia due to WSSV.(vii)

Competitive Advantages

This invention has high potential as algae are commonly used as feed in aquaculture and it has been proven as bio-factory platforms. Further, it is cost effective as it can be easily grown in photo-bioreactors with high yields.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this vaccine within South-East Asia as a cost-efficient alternative and to (2) license this vaccine globally to shrimp farming industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's drug regulatory requirements. Preferred Partner/ Collaboration Biotech companies such as Biotech Corp, BioXCell, TPM Biotech Sdn Bhd and etc. will be the best choice to start on commercializing this vaccine as they are all established biotech companies where issues regarding production or regulatory can be solved easily.

Innovation Business Opportunities

Wealth for

Project Overview

A new, potential cost effective algae oral vaccine (AOV) against (White Spot Syndrome Virus) WSSV; the WSSV can cause 100% mortality rate in commercial shrimp farms.

Business Idea

To design, develop, produce, distribute and license this vaccine in a form that can be mass marketed across aquaculture industry globally. This can be done by emphasizing the vaccine's potential against WSSV.

Competitor Analysis

Apparently, there are limited to even no commercial competitors currently developing industrial-scale Algae Oral Vaccine against WSSV. However, Nomex® Antiviral, from Soley Biotech Institute (US), uses extract from some endemic herbal and algae as shrimp feed can as well cure WSSV.

Project Status

The algae oral vaccine for WSSV has been developed and tested by the project team. ady to be commercialized. The team would like to further collaborate with biotech companies for commercializing the vaccine.

Financials

In Malaysia, tiger prawns accounted for 17.4% of total shrimp production covering 1343.8 Ha.^(viii) According to a survey conducted in Thailand and Vietnam, the usage of probiotic for shrimp is 48.8kg/Ha/time and the price from Alibaba.com is USD 25. Assuming probiotic has the similar functionality as AOV, Malaysia's market for AOV is estimated at RM 4.8 Million, growing at a CAGR of 20%. On the other hand, the business will target Thailand's market in Year 2 where tiger prawns' market is estimated at RM 111 Million and it is assumed AOV is able to capture 20% of the market by Year 3.

Year 1: RM 4.8 Mil x 120%	Ď	= RM 5.8
		Million
Year 2: RM 4.8 Mil x 120%	2 + RM 111 Mil x 10	0% = RM 18.1
		Million
Year 3: RM 4.8 Mil x 120%	o3 + RM 111 Mil x 20	$0\% = RM \ 30.6$
		Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for drug regulatory control processes which must be completed before commercialization.

Source: (i) **BioSpectrum (2012)**, **BioValence targets next-gen antiviral technology** [online] Last accessed 8th October 2012 at: http://www.biospectrum. .com/biospectrum/news/760/developing-gen-antiviral-technology#.UHJUQq5cQwg (ii) **The Fish Site (2012)**, **FAO 2012 Global Shrimp, Shellfish & Mollusc Outlook** [online] Last accessed 8th October 2012 at: http://www.thefishsite.com/articles/1371/fao-2012-global-shrimp-shellfish-mollusc-outlook (iii) **Science Daily, Shrimp Farm** [online] Last accessed 8th October 2012 at: http://www.sciencedaily.com/articles/s/shrimp_farm.htm (iv) **Sannitree International (2012)**, **Sannitree for Shrimp Farms in Ecuador** [online] Last accessed 8th October 2012 at: http://sannitreeinternational.blogspot.com/2012/06/sannitree-for-shrimp -farms-in-ecuador.html (v) **UPM, Produk Penyelidikan Komersi** [online] Last accessed 8th October 2012 at: http://www.tefishsite.com/articles/12 at: http://www.tefishsite.com/articles/12 at: http://www.tefishsite.com/articles/896 / aquatic-animaldiseases-and-their-economic-impact (vii) **The Jakarta Post (2011), Gott Rejects 13 tons of bad Malaysia Shrimp** [online] Last accessed 8 October2012 at: http:// www.thejakartapost.com/news/2011/12/30/govt-rejects-13-tons-bad-malaysian-shrimp.html (vii) **Department of Fishery (2012), Fishery Statistie** [online] Last accessed 9 October 2012 at: http://www.dof.gov.my/html/themes/moa dof/documents/jadual pendaratan marin %20aquaculture.pdf



Innovation Business Opportunity





Mercury Absorbent In Fish (1UPM007)

Mercury-removing washing treatment for fish processing and canning industry



Mercury Absorbent In Fish (1UPM007)



Malaysia produces about 1.6 million tons of fish and seafood per annum. 89% of production comes from marine and inland capture. Marine fish in Malaysia are reported to be contaminated with high levels of mercury which leads to health risks associated with mercury intoxication which can affect fetuses, infants, and children. The primary health effect of methylmercury is impaired neurological development. This necessitates an artificial method of removing mercury from edible fish and make fish consumption safer.(i)

Innovation/ Intellectual Property

This product contains mercury removing agents including suitable pH, cysteine, EDTA, salt and time were optimized for 90% mercury removal from fish. The optimal condition was determined to be pH of 3.75, 1.25% cysteine, 275 (mg/L) EDTA, 0.5% NaCl and 18.17 (min) exposure time. ⁽ⁱ⁾ A PCT has been filed for this innovation with the application number PCT/MY2009/000049.

Industry Overview

According to the global market size of capture fisheries and aquaculture, it is to reach 137.8 million tons by 2015. In the Asia Pacific Region especially China, the average annual fish consumption per person was pegged at 34.2 kilogram, increasing by about 35% over an estimated 25.4 kilogram in 2008. ⁽ⁱⁱ⁾ Each person in Malaysia is expected to consume 55 kilograms of fish per year by 2020. A study done in 2000 found that the fish requirement for each person per year was only 45 kg and it increased to 50 kg in 2005. ⁽ⁱⁱⁱ⁾ The top four fishes with the highest mercury level are Tile Fish, Sword Fish, Shark and Mackerel King. ^(iv)

Competitive Advantages

The current solution for mercury contamination is the limited consumption of fish. Therefore, this product gives a direct solution to this problem by being the first mercury adsorbent mixture on sale that is easy to be used for all types of fish without changing its taste or colour and removes 90% of mercury content in fish with safe ingredients.

Proposed Business Model

Two business models are proposed – ⁽ⁱ⁾ to develop and distribute product. ⁽ⁱⁱ⁾ License the product to an interested manufacturer.

Project Challenges

Penetrating Mercury Absorbent Mixture into the large market size of fish industry by creating awareness to consumers of the health risk caused by mercury poisoning and also to get the consumers to gain trust of the usage of this product will continue to be the challenges in this project. Preferred Partner/ Collaboration Large scale fish processing manufacturers and fish canning industry will be a preferred collaboration partner as they will be the major user and will be able to give access to their dependent network.

Innovation Business Opportunities

Wealth for

Project Overview

The Mercury Adsorbent In Fish is applied as washing treatment to leach out mercury from fish and fish fillet; the fish flesh can be subsequently rinsed with water.

Business Idea

To produce, distribute and license the product that can produce a significant different to the fish consumption without any complication.

Competitor Analysis

This product is the first on Malaysian market since it uses different mercury absorbent agents which are more effective in removing mercury. However, there are many researches conducting research for the solution of mercury contaminated fish. This upcoming research is capable of being a potential competitor in the future.

Project Status

This product is available on market but in a very limited quantity. The team would like to propose this product to potential manufacturers emphasizing on the advantages of marketing fish with lower mercury content.

Financials

According to Fishery Department figures, in 2008 Malaysia produced about 1.5 million MT of fishery products annually of which about 85% are marine capture fish, the rest aquaculture production ^(v) and the market growing at 1.5% annually. The selling price for Mercury Absorbent Mixture is ranged at RM 200 for 4 litre of solution and can be used for 100 kg of fish or RM 2000 per MT of fish processed ^(vi). Assuming that about 5% of the fishery products produced annually (76,500 MT) is fish processed on a large scale and targeting a 1% market the first year growing to 3% by year 3:

Year 1 :	76,500 MT x 1% x RM 2000 =	RM 1.53 Million
Year 2 :	76,500 MT x 2% x RM 2000 =	RM 3.06 Million
Year 3 :	76,500 MT x 3% x RM 2000 =	RM 4.60 Million

Funding Requirement

The key costs for setting up a business based on this technology will include ⁽ⁱ⁾ initial certification costs – to certify or validate the effectiveness of this solution in the food industry ⁽ⁱⁱ⁾ Large scale production systems and ⁽ⁱⁱⁱ⁾ initially high marketing costs to reach the large scale processed fish manufacturers.

Source:(i)SUMOBRAIN [online] Last accessed 6th October 2012 at: http://www.sumobrain.com/patents/wipo/Mercury-absorbent-mixture/WO2010117254 .html (ii) Global Industry Analysts, Inc [online] Last accessed 5th October 2012 at: http://www.strategyr.com/pressGOS-142.asp (iii) NewStrattsTimes [online] Last accessed 5th October 2012 at: http://www.nst.com.my/latest/study-each-malaysian-to-consume-55kg-fish-per-year-by-2020-1.30923# (iv) U.S. Food &Drug Administration [online] Last accessed 5th October 2012 at: http://www.fda.gov/food/foodsafety/product-specificinformation/seafood/foodborne pathogenscontaminants/methylmercury/ucm115644.htm (v) World Fishing and Aquaculture - Malaysia [online] Last accessed 17th October 2012 at: http://www. worldfishing.net/features101/new-horizons/malaysia (vi) Biography (English) [online] Last Accessed 12th October 2012 at: http://www.rmc.upm.edu.my/borang_ download/pameran/s/prof_jinap.pdf



Innovation Business Opportunity





Rapid and sensitive Halal testing kit -HaFYSTM (1UPM010)

Efficient and easy-to-use Halal verification tool for food industry Rapid and sensitive Halal testing kit - HaFYSTM (1UPM010)

Business Opportunity

Halal industry is a rapidly expanding industry with 116,919 halal applications being certified for 2012. HaFYSTM test system will help to increase the frequency of tests of products to see if they meet the Halal requirements which can be carried out by the agencies or companies themselves.

Innovation/ Intellectual Property

The HaFYSTM test system consists of two components which is the portable PCR analyzer and the disposable test cartridge. Two Malaysian Patents have been filed (PI 20082327/ PI 2010700044) and a PCT has been filed (PCT/MY2009/000047).

Industry Overview

Globally the Halal market is valued at USD 2.1trillion dollars with 1billion of the 1.8 billion Muslim populations in the world living in Asia.⁽ⁱ⁾. Malaysia's total Export by Halal certified companies consisted mainly of food ingredients sector which lead with an export value of RM12.3 billion (35%), followed closely by food & beverages 11.9 billion (34%)⁽ⁱⁱ⁾. As at October 2012 there were a total of 114,257 Halal certified applications for halal product an 2,633 for food premises.

Competitive Advantages

The system consists of a portable PCR analyzer which is fully automated simple one touch operation, light weight and field deployable and the disposable test cartridges can be stored for years at ambient temperatures, contains no hazardous chemicals, meant for one off use with no contamination and are pocket sized with sealed cartridge.

Proposed Business Model

HaFYSTM system is used for halal verification of food products. Production of the HaFYSTM machine can be licensed to an appropriate manufacturing company or kept in-house. Sale can be focused on Halal centric countries such as Malaysia and Indonesia initially before expanding to general markets.

Project Challenges

The current Halal food verification process in the industry relies on laboratories. HaFYSTM system is more effective against traditional methods of testing. Halal verification in Malaysia has full Government support therefore ensuring that Halal verification agencies adopt the HaYFSTM system would be paramount as well as requiring the agencies to recognize the validity of the test so that Companies that require Halal verification could possible adopt the HaFYSTM themselves to enhance their own testing process.

Preferred Partner/ Collaboration

Collaborating with Department of Islamic Development Malaysia (JAKIM), Ministry of Trade and Industry (MITI) and Malaysian Industrial Development Authority (MIDA) would be vital to the widespread adoption and use of the HaFYSTM test kit. Retailer corporation operating in Halal centric countries can be targeted as they carry a large range of Halal food for example Carrefour, Tesco and Cold Storage.

Innovation Business Opportunities

Wealth for

Project Overview

HaFYSTM test kit was designed for speed, mobility and sensitivity of results in mind to further enhance the credibility and reliability of the Halal industry

Business Idea

To produce and distribute HaFYSTM test system to Halal verification agencies as well as companies across Malaysia and globally

Competitor Analysis

There are not many porcine detection kits in the market yet. Among the few are PrekinElmer's porcine detection kit which uses an immunochromatography process. Profound Kestral Laboratories porcine detection kit which is the most similar to HaFYSTM in using a Polymerase Chain Reaction method. The HaFYSTM system produces results in an hour is mobile and is easy to operate.

Project Status

The HaFYSTM system has been tested and developed to produce rapid, sensitive, quantitative and qualitative results. It is available with complete machinery, cartridges and tools required to conduct the test and they are willing to discuss with commercial partners to bring the product to wide scale use.

Financials

There were a total of 116919 Halal certified applications in Malaysia(iii). Projected growth rate is expected around 5% annually in Halal certified applications which would result in an increase of about 3 machines yearly. The HaFYSTM system price is RM 50,000 and the cartridge price is RM 200^(iv). Targeting 5% of the yearly applications in year 1, growing to 15% by year 3 and targeting a total of about 60 machines by year 3 -

Year 1 : RM 750,000 (machines) + RM 584,000 (cartridges) = RM 1.34 Million

Year 2 : RM 900,000 + RM 1.23 million = RM 2.13 Million **Year 3** : RM 900,000 + RM 1.94 million = RM 2.84 Million

Funding Requirement

The key cost component for the startup process will be the setting up of the manufacturing facility to mass produce the HaFYSTM system.

Source:(i) Halal Industry Development Corporation (October 2012) Market Information, [online] last accessed at 10th October 2012:http://www.hdcglobal .com/publisher/bhi_market_information(ii)Halal Media (2012), Halal is 5% of Malaysia's total export, minister announced [online] last accessed at 10th October 2012:http://halalmedia.net/halal-is-5-per-cent-of-malaysia-total-export-minister-announced (iii) Halal Idustry Development Corporation (October 2012) Halal Certified Statistic[online] last accessed at 10th October 2012:http://www.hdcglobal.com (iv) UPM Halal Products Research Institute – HaFYS [online] last accessed at 11th October 2012: http://www.halal.upm.edu.my/index.php?option=com_content&view=article&id=149



Innovation Business Opportunity

RM 6.06 Million Potential Yr3 Revenue



A Cholesterol-Lowering Bio-Oil Extraction Process (1UPM008)

Method to extract oil from kenaf seeds, high in antioxidants and anti-cancer properties



A Cholesterol-Lowering Bio-Oil Extraction Process (1UPM008)

Business Opportunity

The global heart health ingredients is projected to reach USD 15.2 Billion in 2018⁽ⁱ⁾ due to increasing number of health conscious consumers as heart diseases are one of the largest killer with 1.7 million death annually.⁽ⁱⁱ⁾

Innovation/ Intellectual Property

The researchers have developed a system based on the supercritical fluid extraction (SFE) process for extracting oil from kenaf seeds. The novel method developed ensures kenaf oil is produced with minimal environmental impact and free from any residual solvent contamination.

Industry Overview

Phytosterol (PS) market in US is estimated to reach USD 196.7 Million in 2012, doubling from USD 103.9 Million in 2005 by Frost & Sullivan.⁽ⁱⁱⁱ⁾ Further, European market is valued at USD 184.6 Million in 2005 and is expected to reach USD 395.2 Million in 2012 with 114% increase where part of the growth is driven by heart diseases.⁽ⁱⁱⁱ⁾ Thus, heart health ingredients like soy protein, PS, beta-glucagon and Omega-3 are performing well in the market.⁽ⁱ⁾ Asia-Pacific represents the fastest growing market with a CAGR of 15% due to active role played by Asian manufacturers.⁽ⁱ⁾ On the other hand, global vegetable oils market is expected to reach 169 Million Metric Tons by 2015 and over 85% of the world's edible oil consumption includes palm oil, soy oil, canola/rapeseed oil and sunflower seed oil. In terms of both production and consumption, Asia Pacific dominates the global vegetable oil market due to unprecedented rise of consumption in China and India.

Competitive Advantages

Kenaf oil that has high phytosterol content is beneficial to patient with autoimmune diseases. Besides, it is rich in Omega 3 & 6 which is a great ingredient in functional food and food products. Due to its high antioxidants and cancer chemopreventive properties, kenaf oil is a potential ingredient for pharmaceuticals and cosmetics industry.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this process globally to vegetable oil industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant food & drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's food & drug regulatory requirements.

Preferred Partner/ Collaboration

Archer Daniels Midland (ADM) Company, BASF SE, Cargill Inc. and etc. will be one of the best choices as they are all notable major players in global marketplace. Thus, issues regarding food & drug regulations can be solved easily by their professional located world widely.

Project Overview

A novel system for extracting kenaf oil using SFE process which opens up the use of kenaf oil in food industry, nutraceutical products and as a carrier for other compounds.

Business Idea

To design, develop, produce, distribute and license this product in a form that can be mass marketed across various industries globally. This can be done by emphasizing kenaf oil's potential against cholesterol and cancer.

Competitor Analysis

PS will be competing with other functional foods (FF) such as soy protein, omega 4, beta-glucagon and etc. These FF are first included in fats and margarines, but they are now included in new product categories such as beverages, diary products, nutrition bars, sauces and etc.

Project Status

The team has tested and finalized the extraction process for extracting oil from kenaf seeds and would like to discuss with food manufacturers and companies distributing health products for combining kenaf oil with their existing products.

Financials

The global market for soy protein ingredients is valued at USD 5.1 Billion in 2011 and it is expected to reach 9.09 Billion in 2017, growing at a CAGR of 10.4% from 2012 to 2017.^(*) Asia Pacific is estimated to capture 20% of the global demand and Malaysia's demand for soy protein will be assumed at around 3% of Asia Pacific's market demand. Thus, it will be valued at USD 30 Million (RM 90 Million), growing at a CAGR of 10.4%. Since Phytosterol (PS) is still new in the market, it is assumed that PS will capture 5% of Soy Protein's market demand in 3 years' time.

 Year 1: RM 90 Million x 110.4% x 1% = RM 0.99 Million

 Year 2: RM 90 Million x 110.4%2 x 3% = RM 3.30 Million

 Year 3: RM 90 Million x 110.4%3 x 5% = RM 6.06 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for food & drug regulatory control processes which must be completed before commercialization.

Source: (i) GIA (2012), Heart Health Ingredients: A Global Strategic Business Report [online] Last accessed 22nd October 2012 at: http://www.strategyr.com/ pressMCP-6752.asp (ii) NUTRA Ingredients (2011), Global Heart Health Markets in Rude Health [online] Last accessed 22nd October 2012 at: http://www. nutraingredients-usa.com/Industry/Global-heart-health-markets-in-rude-health (iii) EGE (2012), EGE's Food and Nutraceutucal Product Lines [online] Last accessed 22nd October 2012 at: http://egembrs.com/wp-content/uploads/2012/08/EGEs-Food-and-Nutraceutical-Products-and-Competitive-Advantages.pdf (iv) GIA (2012), Vegetable Oils- A Global Strategic Business Report [online] Last accessed 22nd October 2012 at: http://www.strategyr.com/pressMCP-2226.asp (v) Markets and Markets (2012), Soy Protein Ingredients market-worth USD 9.09 Billion by 2017 [online] Last accessed 24th October 2012 at: http://www. myprgenie.com/view-publication/soy-protein-ingredients-market-worth-909-billion-by-2017



Innovation Business Opportunity







A Natural Compound Treatment For Cervical Cancer (1UPM003)

Natural herb compound able to induce cancer cell death with minimal side-effects



Business Opportunity

Global cancer therapies market is expected to reach USD 225 Billion by 2017, growing at a CAGR of 25% due to increasing incidence of cancers worldwide.⁽ⁱ⁾ Across globe, one woman dies of cervical cancer in every two minutes.⁽ⁱⁱ⁾

Innovation/ Intellectual Property

The natural anticancer compound discovered can selectively induce apoptotic pathway (programmed cell death) in cancer cells and make them undergo cell death like a normal/ healthy cell.

Industry Overview

85% of countries ranked cervical cancer within top 3 most frequent cancers among women age between 15-44 years old. ⁽ⁱⁱⁱ⁾ The fatality rate of cervical cancer in Asia Pacific is one woman for every four minutes.⁽ⁱⁱ⁾ Cervical cancer was the 3rd main cancer among Malaysian women with nearly 18 incidents for every 100,000 women each year.^(iv) There was also an estimated of 613 deaths over 2,126 cervical cancer patients suffers in a year and the numbers is expected to increase to 3,502 women with 1,118 deaths in 2025.^(iv) Among 3 different major ethic groups in Malaysia, Indian women experienced the highest incidence rate in 2007 at 10.3 per 100,000 population, followed by Chinese and Malays at 9.5 and 5.3 respectively.^(v) Among all the age group, the highest incidence rate of cervical cancer in Malaysia is the age group of 55-64 years old at 60 per 100,000 populations.⁽ⁱⁱⁱ⁾

Competitive Advantages

The anti-cancer compound is a natural and pure compound of herbal origin which is safer with minimal expected sideeffects. Its efficacy is high as it specifically acts against cancer cells. This compound is a herbaceutical so the regulatory hurdles to its use are fewer than synthetic compounds. Besides, the compound is stable up to 6 months in solution at room temperature.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this vaccine within South-East Asia as a cost-efficient alternative and to (2) license this vaccine globally to pharmaceutical industry.

Project Challenges

One of the key challenges for this vaccine is to gain worldwide regulatory approvals from relevant food & drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's food & drug regulatory requirements.

Preferred Partner/ Collaboration

Established pharmaceutical manufacturers will be the best choice as they have all the manufacturing equipment as well as know-how in manufacturing. In addition, issues regarding food & drug regulations can be solved easily.

Innovation Business Opportunities

Wealth for

Project Overview

A natural and pure compound isolated from an herbal plant of Malaysian origin. A safe treatment for cervical cancer with high efficacy, specifically targeting the cancer cells while protecting the healthy cells and tissues.

Business Idea

To design, develop, produce, distribute and license this compound in a form that can be mass marketed across pharmaceutical industries globally. This can be done by emphasizing its safe treatment with high efficacy.

Competitor Analysis

This natural compound will be competing with natural food especially fruits and vegetables. This is due to numerous studies shown convincing evidence that diet and nutritional factors can prevent many types of cancer.

Project Status

The compound now needs to be further tested and developed into commercial product for the prevention and treatment of cervical cancer.

Financials

According to Department of Statistics (2010), the population of female from age group 10-14 is estimated at 1.35 Million and age group 15-19 is estimated at 1.4 Million. Since the vaccine will only be used on young teenage aged between 12-18 years old, the target population is assumed at 1.8 Million. As the government is allocating RM 50 Million for cervical cancer prevention,^(iv) it is assumed that the price for the vaccine will be RM 150 per dosage and only 1 dosage is needed for full prevention. Thus, around 20% of the young population will be protected by the vaccine, assuming government will further promote and subsidize this vaccine to secondary schools.

Funding Requirement

The key funding component is for pre-commercialization stage, especially for drug regulatory control processes which must be completed before commercialization.

Source: (i) GIA (2011), Cancer Therapies- A Global Strategic Business Report [online] Last accessed 24th October 2012 at: http://www.strategyr.com/ pressMCP-1551.asp (ii) The Malay Mail (2012), Cervical Cancer Can be Treated [online] Last accessed 24th October 2012 at: http://www.mmail.com.my/story/ cervical-cancer-can-be-treated-32242 (iii) JTM (2012), Program KPWKM Bagi Penwaksinan HPV untuk Golongan Wanita [online] Last accessed 24th October 2012 at: http://www.jtm.gov.my/BPL/HPV_LPPKN%20210.2ptX (iv) The Star Online (2011), 350,000 Women to get free HPV vaccination from early 2012 [online] Last accessed 24th October 2012 at: http://thestar.com.my/news/story.asp?file=/2011/10/9/nation/9663579&sec=nation (v) Venus (2012), Cervical Cancer the Third Most Common Cancer among Malaysian Women [online] Last accessed 24th October 2012 at: http://www.venusbuzz.com/ archives/15611/cervical-cancer-the-third-most-common-cancer-among-malaysian-women/

Year 1: RM 150 x 1.8 Million x 10% = RM 27.0 Million Year 2: RM 150 x 1.8 Million x 15% = RM 40.5 Million Year 3: RM 150 x 1.8 Million x 20% = RM 54.0 Million



Innovation Business Opportunity







Cost-effective, safe and scalable organic pesticide for agriculture industry



Baculovirus Biopesticide (1UPM006)

Business Opportunity

Biopesticides represent a strong growth area in the global pesticide market where demand for biopesticides for permanent crops is expected to grow at the fastest CAGR of 16.1% from 2012 to 2017.⁽ⁱ⁾

Innovation/ Intellectual Property

The development process for Baculovirus production should focus on optimization of conditions for growth in host insect cells propagated in large-scale bioreactors and development of improved insect cell culture media. A patent application covering the process of Baculovirus production has been granted in Malaysia- MY142163A.

Industry Overview

The global market for biopesticides was valued at USD 1.3 Billion in 2011 and it is expected to grow at a CAGR of 15.8% from 2012 to 2017, reaching USD 3.2 Billion in 2017. ⁽ⁱⁱ⁾ Biopesticides such as bacteria, protozoa, fungi and virus dominated over 63% of the global biopesticides market.⁽ⁱⁱⁱ⁾ US represent the largest market worldwide where North America dominated the global biopesticides market, accounting for around 40% of the global biopesticides demand in 2011.⁽ⁱⁱ⁾ Europe is expected to be the fastest growing market with a CAGR of 16% due to the stringent regulations for pesticides which results in growing demand for organic products.^(iv) This is followed by Asia-Pacific, one of the fastest growing markets, with at a CAGR of 14.2% as the region offers great opportunity for the use and development of microbial biopesticides.^(iv)

Competitive Advantages

The production process is cost effective, safe and scalable with high-yields of Baculovirus. There are no multiple serial passages of the virus in the process that could affect viral stability. Thus, the viral particles are stable at room temperature up to 2 years.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute Baculovirus within South-East Asia as a cost-efficient alternative and (2) license the production process of Baculovirus to other pesticide manufacturer globally.

Project Challenges

One of the key challenges for Baculovirus is to gain worldwide regulatory approvals such as the Environmental Quality Act or food & drug regulatory from relevant agencies. However, this might be a time consuming process in some cases. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory requirements.

Preferred Partner/ Collaboration

Biotech companies such as MG EcoTech, Biotech Corp, BioXCell, TPM Biotech Sdn Bhd and etc will be the best choice to start on commercializing this biopesticide as they are all established biotech companies where issues regarding production or regulatory can be solved easily.

Innovation Business Opportunities

Wealth for

alaysia

Project Overview

A cost-effective and scalable process for producing a biopesticide using insect larvae to grow Baculovirus, a safe and effective insect pest control with promising results by increasing the crop yield up to 30%.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally emphasizing its potential in cost-effective, safe and scalable with high yields.

Competitor Analysis

There are limited commercial competitors currently developing industrial-scale Baculovirus biopesticides (Bb) as most of them are still under development. However, Bb will be competing with chemical pesticides which are cheaper.

Project Status

A range of pests and crops have been tested and the research team is seeking for potential pesticide manufacturers for further developing and distributing Baculovirus across wider region.

Financials

Asia-Pacific's market for biopesticides is valued at RM975 Million, assuming it accounted for 25% of the global biopesticides market. As for Malaysia, the demand for biopesticides will be assumed at 3% of Asia Pacific's market, valuing at RM 29.3 Million with a global CAGR of 15.8%. Baculovirus biopesticides is assumed to capture at least 10% of biospesticides' market demand in 3 years' time due to its promising results of 30% increment on crop yield as well as government's enforcement in using non-toxic pesticides.

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Year 1: RM 29.3 Million x 115.8% x 3% = RM 1.0 Million
Year 2: RM 29.3 Million x 115.8%2 x 6% = RM 2.4 Million
Year 3: RM 29.3 Million x 115.8%3 x 10% = RM 4.5 Million
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Funding Requirement

The key funding component is for pre-commercialization stage, especially for drug regulatory control processes which must be completed before commercialization.

Source: (i) GlobeNewswire (2012), Biopesticides Market to Grow at a 15.6% CAGR [online] Last accessed 25th October 2012 at: http://www.globenewswire. com/news-release/2012/06/22/480113/260052/en/Biopesticides-market-to-grow-at-a-15-6-CAGR.html (ii) World Research Report (2012), Global Bio Pesticides Market [online] Last accessed 25th October 2012 at: http://www.worldresearchreport.com/global-bio-pesticides-market/ (iii) Market Research (2012), Global Biopesticides Market Trends & Forecast (2012-2017) [online] Last accessed 25th October 2012 at: http://www.marketresearch.com/MarketsandMarkets-v3719/ Global-Biopesticides-Trends-Forecasts-7030063/ (iv) GIA (2012), Biopesticides- A Global Strategic Business Report [online] Last accessed 25th October 2012 at: http://www.strategyr.com/pressMCP-1573.asp



Innovation Business Opportunity



(1UM005)

Low-cost simulation for the study of otology (medical training and examination of the ear)



Otology Cube (1UM005)

Business Opportunity

An opportunity to create a low-cost and practical simulation and training tool for otology (study of the normal and pathological anatomy and physiology of the ear) diagnosis and treatment for medical students, otolaryngology trainees or medical professors.

Innovation/ Intellectual Property

The innovation is based on the expertise and experience of the researcher in the field of medical examination of the ear, and the modeling of the ear for training purposes.

Industry Overview

The World Health Organization estimated that in 2004 ⁽ⁱ⁾, over 275 million people globally had moderate-to-profound hearing impairment, 80% of them in low-and middle-income countries. This figure is expected to grow to 700 million by 2015 ⁽ⁱⁱ⁾.

In Malaysia, the Department of Occupational Safety and Health reported that in 2010⁽ⁱⁱⁱ⁾, out of a total of 1,426 cases (compared with 791 cases in the previous year), a total of 467 cases investigated were of noise induced hearing loss.

The global market for audiological (hearing aid) devices market is forecast to reach USD 22 billion by the year 2015 ⁽ⁱⁱ⁾. North America and Europe represents the largest markets for hearing aids globally. However, Asia with more than half of the hearing impaired population represents the fastest growing market.

Competitive Advantages

The research team claims to have developed the first in the world's product for medical training and examination of the ear, with features that comprise:

- Disc of knowledge: including high-resolution images of otoscopy or endoscopic examination;
- Frames of motions: Clips of movies of ear-related procedures and operation
- Board of skills: including various lesions which require different intervention, and
- Bullets of fire: compatible for the use of laser treatment.

Proposed Business Model

The Otology Cube can be produced and marketed to otolaryngology practitioners, teaching hospitals and clinics that conduct ear testing and examination. Globally, licenses may be granted to regional or global medical equipment or bio-medical educational providers as resellers to various countries.

Project Challenges

The biggest challenge is for the project team to identify a process or means of protecting the design of the invention.

Preferred Partner/ Collaboration

This innovation may be of interest to medical schools, hospitals, medical equipment or bio-medical providers.

Project Overview

The design, development and mass production of a simulation model and training tool for hands-on ear examination and ear surgery.

Innovation Business Opportunities

Wealth for

Business Idea

To design, develop, produce and distribute a portable and multifunctional tool for otolaryngologists to examine and practice their diagnostic techniques and surgical skills, as well as for demonstration and educational purposes.

Competitor Analysis

The number of players that provide training tools or models for the ear is limited. Medtronic Inc, GE Healthcare and ENT Simulation Technologies Ltd offer computer 3D systems for imaging and modeling.

Companies like BioMedical Modeling Inc, Bio Medical Technologies Co, South Korea, Bio-Models LLC and many smaller players offer traditional physical solid models of the ear for training.

Otology Cube comprises a hybrid of traditional solid model with a database system of visual images and video clips.

Project Status

A prototype has been built with the designate functions and features. The prototype has been featured and exhibited in several local expos and has been awarded gold in the category of Medicine & Allied Health Sciences

Financials

In Malaysia, there are 138 government hospitals^(iv), 31 government medical teaching colleges and 40 private hospitals ^(v) offering Ear Nose and Throat facilities, giving a total of 209 potential target customers. Suppose it targets an initial penetration of 5% in Year 1, growing to 20% by Year 3, where each hospital may require 20 units (size of a typical classroom) will give the following potential revenue:

Year 1:	$209 \ge 20 \ge 5\% \ge RM \ 1,000 = RM \ 209,000$
Year 2:	209 x 20 x 10% x RM 1,000 = RM 418,000
Year 3:	209 x 20 x 20% x RM 1,000 = RM 836,000

Funding Requirement

The key funding requirement will be for the setup of mass production and marketing network of the Otology Tube.

Source: (i) Deafness and hearing impairment, World Health Organization, Fact sheet 300, Feb 2012 [online] Last accessed 24 Oct 2012 at: http://www.who.int / mediacentre/factsheets/fs300/en/index.html (ii) Global Audiological Devices Market to Reach US\$22 Billion by 2015, Electronics.ca publications, Mar 23, 2011 at: http://www.electronics.ca/presscenter/articles/1411/1/Global-Audiological-Devices-Market-to-Reach-US\$22-Billion-by-2015/Page1.html (iii) Occupational Diseases and Poisoning Investigation, Department of Occupational Safety and Health , Ministry of Human Resources, Malaysia at: http://www.dosh.gov.my/doshv2/index. php? option=com_content&view=article&id=392%3Aoccupational-diseases-and-poisoning-investigation&catid=148%3A occupational-health&Itemid=95&lang=en (iv) Portal Rasmi Kementerian Kesihatan Malaysia. at: http://www.moh.gov.my/gov_hospitals (v) Association of Private Hospitals of Malaysia website. at: http://www.hospitals-malaysia.org/portal/index.asp?menuid=3



Innovation Business Opportunity





Automated Thermocyclic Dipping Machine (1UM007)

Compact, versatile and fully-automated dental equipment
AutomatedThermocyclic Dipping Machine (1UM007)



Automatic Thermocyclic Dipping Machine (ATDM) stimulates the oral temperature changes. It is also applicable for coating and cleaning applications such as dip coating, nickel plating and electroplating.

Innovation Business Opportunities Wealth for

Business Idea

To design, develop, produce and distribute the product in a form that can be mass marketed across industries globally.

Competitor Analysis

Medes (M) Sdn. Bhd and Bumi Dental Suppliers Sdn Bhd is one of the top distributors for many worlds' renowned brand for dental equipment, instruments and supplies in Malaysia. There are several machines made in Malaysia and abroad which offer similar functions. However ATDM has its advantages as emphasized.

Project Status

Zecttron Sdn. Bhd is a spinoff company formed by UM Capital in order to commercialize ATDM. Zetron is in the state of manufacturing customized machines with the help of all the prototypes they have built. Zetron would like to interact with related organizations for selling and distributing ATDM to market outside Malaysia.

Financials

The potential USD 3 Million dental equipment market is estimated at 0.5% of the USD 600 Million medical device market. It is assumed that Automated Thermocyclic Dipping Machine would approximately be able to capture 15% of the market share by Year 3 with a growth rate of 5.8%:

Year	1 :USD 3.2 Million x 5 %	6 = USD 0.16 Million / RM 0.48
		Million
Year	2:USD 3.4 Million x 10%	% = USD 0.34 Million / RM 1.02
		Million
Year	3 :USD 3.6 Million x 15%	% = USD 0.54 Million / RM 1.62
		Million

Funding Requirement

The startup funding process for this project can be optimized by collaborating with companies that have access to the Network of potential customers outside the Malaysia's market.

Business Opportunity

Malaysia's medical device market, including dental equipment is estimated to be worth USD 600 million in the year 2011. ⁽ⁱ⁾ The dental industries are constantly seeking for greater reliable innovation and in conjunction to that Automated Thermocyclic Dipping Machine (ATDM) can be manufactured to the bespoken specification which gives high opportunity to take a place in this industry.

Innovation/ Intellectual Property

The research team has expertise and know-how as well as knowledge with regards to building ATDM machines as per custom specifications. A pattern for ATDM has been filed in Malaysia (PI 2010002659).

Industry Overview

The global market for home medical equipment (HME) was worth about \$16.8 billion in 2009. BCC expects the HME market to grow to \$23.8 billion by 2015, a CAGR of 6.1% over the next 5 years. ⁽ⁱⁱ⁾ Whereas, narrowing to the global market for dental equipment was valued at \$4.5 billion in 2011 and is expected to grow at a CAGR of 5.8% from 2011 to 2016. ⁽ⁱⁱⁱ⁾ The global dental equipment and consumables market is estimated to be \$26 billion by 2014, growing at a compound annual growth rate (CAGR) of 6.8%.^(iv) In 2011, Malaysia's medical device market, including dental equipment, is estimated to be worth US\$600 million.

Competitive Advantages

Though there are several machine in Malaysia that offer similar functions, ATDM stands out with its advantages of being compact, versatile, fully automated and also having the flexibility of manufacturing the machine to be spoken specifications.

Proposed Business Model

Two business models are proposed: 1) A manufacturing facility could be set-up, or else manufacturing could be outsourced 2) Distribution/marketing partners can purchase ATDM or be the distributors for markets in and outside of Malaysia.

Project Challenges

The main challenge of the project is penetrating into the already existing market by emphasizing on the advantages ATDM.

Preferred Partner/ Collaboration

Dentist with own dental clinics would be a preferred partners and also major dental equipment suppliers in Malaysia such as Bumi Dental Supplier would be an ideal collaborator to distribute ATDM to market outside Malaysia.

Source: (i) **Dental Tribune** [online] Last accessed 23rd October 2012 at: http://www.dentaltribune.com/articles/content/id/8514/scope/business/region /asiapacific (ii) **BBC Research** [online] Last accessed 23rd October 2012 at: http://www.bccresearch.com/report/home-medical-equipment-hlc054b.html (iii) **Markets and Markets** [online] Last accessed 23rd October 2012 at: http://www.bccresearch.com/Market-Reports/dental-equipments-market-784.html (iv) **Industry Growth Group** [online] 23rd October 2012 at: http://www.markets.andmarkets.com/Market-Reports/dental-equipments-market-784.html (iv) **Industry Growth Group** [online] 23rd October 2012 at: http://industrygrowth.net/news/dental-supply-industry-worth-\$26-billion-by-2014.html



Innovation Business Opportunity







Kardiomate - A Salt Replacement Seaweed Additive (1UPM019)

Natural herb-based food flavour enhancer for health-conscious consumers



Kardiomate - A Salt Replacement Seaweed Additive (1UPM019)

Business Opportunity

An opportunity to develop flavour enhancers / food seasoning made from seaweeds for the health conscious organic food consumers that have a global CAGR of 13% during 2010-2014⁽ⁱ⁾.

Innovation/ Intellectual Property

The innovation involves a method to produce low sodium, high calcium, protein hydrolysate flavor enhancer with the key steps of hydrolyzing protein source in presence of catalysts and deactivating the catalysts in the hydrolysate.

Industry Overview

Global demand for salt will rise 2.9% annually from 284 million metric tons through 2015 to 327 million metric tons ⁽ⁱⁱ⁾. Global sales of food additives were estimated at USD 24.5 billion in 2010 with a forecast growth rate of 2.5% per annum⁽ⁱⁱⁱ⁾.

Diseases of the heart and circulatory system are the leading source of mortality in the UK^(iv), causing almost 200,000 deaths every year. About 48% of all deaths from Cardiovascular disease (CVD) are from Coronary Heart Disease and 28% are from stroke. CVD caused over 50,000 premature deaths in the UK in 2006 and cost the UK about £30 billion per year.

The low sodium alternative salt market has been growing as awareness of salt intake has increased. The Working Group on Sodium Reduction^(v) estimate a person's average consumption of salt intake to be about 3.4 gm per day, targeted to reduce by 5% per year to 2.3 gm by year 2016.

Competitive Advantages

KardioMate is made from tropical seaweeds and herbs extract. These extracts have many health benefits including the management of cancer, hypercholesterol, hypertension, hyperlipidemia, atherosclerosis, obesity, oxidative stress, prevent organ damage, assists healing and other ailments.

This food ingredient is available in the form of capsules or powdered seasoning or salt replacer/flavor enhancer.

Proposed Business Model

The proposed business is to design, develop and produce various product variants using the base technology and ingredients, specially targeting for the health conscious market, and to license the technology to other food producers.

Project Challenges

As this product is targeted for the consumer industry, the greatest challenge is to penetrate the market dominated by many large and established players in order to achieve an economy of scale to justify for production and mass marketing.

Preferred Partner/ Collaboration

Potential collaborators include food processing producers, food addictive producers and bio-technology companies.

Project Overview

A method to produce flavor enhancer using chemical reactions such as hydrolysis, catalysis, and filtration techniques to obtain the flavor enhancer.

Business Idea

KardioMate has the potential to be included in a very wide range of products, both as a seasoning and sauce and included in ready processed foods. The business idea is to develop and produce various products using this technology to penetrate into the large and growing health conscious consumer market.

Competitor Analysis

There are two categories of competitors: conventional salt producers and salt substitute food flavor / enhancers that uses alternative source of addictive. In the salt substitute food flavor / enhancer category, the major competition comes from products derived from potassium and lysine, seaweed extracts, herbs and spices. Popular salt substitute brands in the market are: AlsoSalt, Morton Salt Substitute, NoSalt, Nu-Salt, Sub4Salt, BonSalt,

Project Status

KardioMate has passed the toxicity test and proclaimed as an herbal supplement, not a drug product ^(vi). The product has received international recognition such as the gold medal in the International Exhibition of Inventions New Products Ideas 2008 in Nuremberg, Germany and the 18th International Invention Innovation Industrial Design and Technology Exhibition 2007.

Financials

Based on AlsoSalt's published retail price ^(vii): 70 gm bottle at USD 5.00 (RM 15), and 0.5gm packet of 100 packet at USD 6.00 (RM 18), and targeting say, 10% of the population of Malaysia's 28 million, the potential revenue are as follows:

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Year 1: 2.8 \text{ m x} (3.4/70) \text{ gm x RM15} = \text{RM } 2.04 \text{ Million}Year 2: 2.8 \text{ m x} 1.025 \text{ x} (3.4/70) \text{ x RM15} = \text{RM } 2.09 \text{ Million}Year 3: 2.8 \text{ m x} 1.051 \text{ x} (3.4/70) \text{ x RM15} = \text{RM } 2.14 \text{ Million}
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Funding Requirement

Funding requirements will include the cost of establishing manufacturing facilities, extensive marketing, branding and advertising effort.

Source: (i) Health-Conscious Consumers Fueling Organic Food Growth, Nov 8, 2010, source: Global market research firm RNCOS (online) [Last accessed: 27 Oct 2012 at: http://gmo-journal.com/index.php/2010/11/08/health-conscious-consumers-fueling-organic-food-growth/ (ii) World Salt to 2015 - Demand and Sales Forecasts, Market Share, Market Size, Market Leaders (online) at: http://www.freedoniagroup.com/World-Salt.html (iii) The Global Food Additives Market - 5th Edition, Leatherhead Food Research, Sept 2011 [online] at: http://www.leatherheadfood.com/global-food-additives (iv) Modelling the UK burden of cardiovascular disease to 2020, British Heart Foundation, September 2008 [online] at: http://www.bf.org.uk/plugins/PublicationsSearch Results/DownloadFile. aspx?docid=ad18e5a0-7da6-4c7c-8142-f68f27cde451&version=-1&title=Modelling+the+Burden+of+Cardiovascular+Disease+to+2020& resource=Z154 (v) How much sodium do I need? CBC News, Posted: Jul 23, 2009 [online] at: http://www.cbc.ca/news/health/story/2009/07/23/f-salt-reducing-health-risks.html (vi)Low sodium salt substitute; good for heart, diabetes and high blood patients, April 18, 2011 [online] at: http://phys.org/news/2011-04-sodium-salt-substitute-good-heart.html (vii) AlsoSalt's portal [online] at: http://www.alsosalt.com/buyalsosalt.html



Innovation Business Opportunity





Ergonomic, safe and versatile surgical training equipment



Business Opportunity

The surgical equipment industry is a billion dollar industry which is growing due to aging populations, advances in anesthetics, emerging economies, and technological innovation. The Laryngotracheal workstation will help to improve hands-on skills of medical students/surgeons and avoid unintended mistakes during training procedures.

Innovation/ Intellectual Property

The Laryngotracheal workstation is dual purposed as a teaching tool for conventional surgical instrument as well as using it with CO2 laser. Its aim is to help improve hands-on skills of medical students/surgeons and avoid unintended mistakes during training procedures. The research and development team has developed the know-how and expertise in producing this device.

Industry Overview

It is estimated that the surgical equipment industry will surpass USD 7 billion by 2016 with a CAGR of 6 % ⁽ⁱ⁾.Lasers account for almost 50% of the powered surgical device sub-segment. In Malaysia for every 100,000 population at least 0.2% has Larynx Cancer ⁽ⁱⁱ⁾. There are 138 government hospitals ⁽ⁱⁱⁱ⁾ and 113 private hospitals in Malaysia ^(iv) which could potentially get the workstation for their training purposes.

Competitive Advantages

The Laryngotracheal workstation is fully functional and has safety features for endolaryngeal and endotracheal surgical training as well as a laryngeal and laryngotracheal dissection box. It is ergonomic and stable with versatility of having uses for CO2 laser and conventional surgeries. It is laser safe and has a drainage box to collect fluid and secretions form specimen. It also has a cooling function to preserve the specimen.

Proposed Business Model

Production of the machine can be done in-house or licensed to a medical equipment company. Sale of machine can be focused on hospitals around the world as well as medical teaching facilities.

Project Challenges

The market size is limited because of the highly specialized nature of the device and because of that a balance between pricing and profit is vital. Use of device by medical institution has to be also recognized by teaching bodies to ensure its adoption.

Preferred Partner/ Collaboration

Suitable partners would consist of Malaysia Medical Device Association (MMDA) or Malaysian Medical Association (MMA), who can support the use of this device as a teaching aid and corporate partners such as Johnson & Johnson to provide technological expertise to manufacture this product.

Innovation Business Opportunities

Wealth for

Project Overview

A Laryngotracheal workstation that is capable of CO2 laser endolaryngeal surgical training and also capable of being a Laryngotracheal/ laryngeal dissection box.

Business Idea

To produce and distribute the Laryngotracheal workstation to medical teaching facilities and hospitals around the world to help medical professionals perform better.

Competitor Analysis

Immediate competitors would be similar surgical tools manufactures. However as this product is a new form function there are not many direct competitors however similar product are being made by Laedral which produces products for airway management ⁽ⁱⁱⁱ⁾.

Project Status

A prototype has been built with the full functions and an upgrade version will be completed soon, which is an automatic, air tight and topically sterilised box. The project team is ready to discuss with medical schools or hospitals, who are interested in this technology, and to medical equipment companies to commercialize the invention.

Financials

There are a total of 251 hospitals and 28 medical teaching facilities in Malaysia. Thailand and Indonesia have a combined total of 1510 hospitals and 71 treaching facilities. A market penetration rate of 1% for year 2 onwards for foreign markets is assumed. Local markets have a target of 10%, 15% and 20% for year 1, 2 and 3.estimated unit cost RM 6000.

Year 1: 153.5(units) x RM 6000	= RM 921,000
Year 2 : 249.75 X RM 6000	= RM 1.5 Million
Year 3 : 386.05 X RM 6000	= RM 2.3 Million

Funding Requirement

The funding requirement would be for the development of the manufacturing proses as well as well as for targeted marketing purposes as the target market is a very niche market.

Source: (i)Surgical Equipment Industry: Market Research Reports, Statistics and Analysis [online] last accessed at 22 October 2012 : http://www.reportlinker. com/ ci02256/Surgical-Equipment.html(ii)National Cancer Registry (2006) by Ministry of Health, [online]last accessed at 23 October 2012 : http://www.scribd. com/doc/45028125/Malaysia-Cancer-Statistics(iii)Portal Rasmi Kementerian Kesihatan Malaysia [online] last accessed at 23 October 2012 : http://www.noh.gov .my/gov_hospitals?offset=120 (iv) Association of Private Hospital of Malaysia [online] last accessed 23 October 2012 : http://www.hospitals-malaysia.org/portal/ index.asp?menuid=3 (iii) Laerdal@Airway Management Trainer,[online] last accessed 29th October 2012 : http://www.laerdal.com /my/doc/92/Laerdal-Airway-Management-Trainer



Innovation Business Opportunity







Food Additive to Reduce Oil Absorption & Fat Deterioration (1UPM021)

Reduces oil content in fried food and improves crispiness and taste



Food Additive to Reduce Oil Absorption & Fat Deterioration (1UPM021)

Business Opportunity

An excellent opportunity to introduce a natural food additive made from edible plant extract to be added into cooking oil, in a global food additive market estimated at USD 24.5 billion in 2012 with a forecast growth rate of 2.5% per annum⁽ⁱ⁾.

Innovation/ Intellectual Property

The following patents are filed in Japan (2010-537878), China (200880121248.6), Vietnam (1-2010-01463) and (EP2217082B1) in European Patent Office on 31 May 2010, granted on 27 June 2012 ⁽ⁱⁱ⁾.

Industry Overview

Leatherhead Food Research says that improving overall health and the desire for natural ingredients are key factors driving demand for additives including emulsifiers, hydrocolloids, sweeteners, vitamins and minerals, soya ingredients, omega-3 fatty acids, probiotics, prebiotics and plant stanol esters. There are concerns among consumers regarding such chemicals, as well as high fat content in some foods.

Chemical antioxidants have been allowed to use within legal limits in the food industry. The use of plant-derived antioxidants has been limited in industry due to the lack of understanding on the molecular composition, amount of active ingredients in the source material and the availability of relevant toxicity data. This has now been proven safe.

Food additives are the substances mainly used to retain and enhance flavor of the food. With more than 3000 food additives globally, and the drive towards natural additives, the market is expected to cross USD 30 billion mark by 2015 ⁽ⁱⁱⁱ⁾.

Competitive Advantages

This novel additive provide the following benefits: Reduce oil absorption in fried foo, have antioxidant properties, reduce fat deterioration during frying and storage, has antibacterial properties, significantly improve crispiness, taste and overall quality of fired products, and uses less oil in frying process.

Proposed Business Model

The proposed business is to design and develop various product applications using the base technology and method to produce various food additives to reduce oil absorption in food and prevent fat deterioration.

Project Challenges

As this product is targeted for the consumer food industry, the greatest challenge is to penetrate the market dominated by many large and established players. Aggressive marketing, branding and economy of scale production are required.

Preferred Partner/ Collaboration

Potential partners may be food processing companies, biotechnology companies and food additives producers.

Project Overview

A method to produce a novel food additive from edible plant extract that reduces oil absorption up to 85 % oil absorption in food, prevent fat deterioration and confer health benefits to the consumer.

Innovation Business Opportunities

Wealth for

Business Idea

To develop, produce and distribute an additive for edible oil made from an extract derived from plant parts of Rutaceae plant family to be incorporated into cooking oil for reducing oil adsorption into fried food.

Competitor Analysis

The food additives market is heavily fragmented with many medium-sized and regional Asian producers ^(iv), such as from China, Malaysia, Philippines and Taiwan. There is no one dominant player in the industry. Most of these companies are biotechnology-based niche companies that use various ingredients (eg: palm oil, seeds, vegetable, capsicum, ginger, etc) as its base ingredient.

Project Status

The project has been presented at the PECIPTA 2011 and they were awarded a Silver prize. The project team is ready to discuss with potential partners to commercialize this innovation.

Financials

Based on online retail price of vegetable oil additives, the average selling price is USD 150 – USD 200 (RM450) per kilogram ^(v). According to FDA's guidelines ^(vi), "the maximum concentration of food additive in food would be less than 0.1 mg per kg". With the world trade of oils and fats recorded at 63.34 million tonnes ^(vii) in 2009, suppose the business targets 1% of this market in the first three years, will give the following potential revenue:

Year 1:	15,835 kg x RM 450 = RM 7.13 Million
Year 2:	31,670 kg x RM 450 = RM 14.25 Million
Year 3:	63,340 kg x RM 450 = RM 28.50 Million

Funding Requirement

Funding requirements will include the cost of establishing the manufacturing facilities, extensive marketing, branding, promotions and advertising efforts.

Source: (i) **The Global Food Additives Market - 5th Edition**, Sept 2011. [online] (Last Accessed: 28 Oct 2012) at: http://www.leatherheadfood.com/globalfood-additives (ii) **Universiti Putra Malaysia website at:** http://www.rmc.upm.edu.my/upmip/index.php?content=getcluster&ipid=541&ipdetailid=530& projectlead=68&cluster=2; http://www.rmc.upm.edu.my/upmip/index.php?content=getrudata&statusip=3&countryfiling=0&yearfiled=2010 (iii) Food Additives: **Global Forecast and Winning Imperative Analysis** at: http://www.marketsandmarkets.com/Market-Reports/food-additives-270.html (iv) **Malaysia Business Directory**, [Online] at: http://www.infotoday.com.my/supplier/Food-Ingredients--Additives-c1681.html (v) **Alibaba.com trading portal** at: http://www.alibaba.com/ showroom/vegetable-oil-additives.html (vi) **Guidance for Industry: Preparation of Premarket Submissions for Food Contact Substances,** FDA. at: http://www. anericanpalmoil. com/publications/GOFB/GOFB_Vol7_Iss1-pullout1.pdf



Innovation Business Opportunity

RM 6.4 Million Potential Yr3 Revenue





Lighter, more sensitive nuclear machine for the diagnosis of cancer, cardiac diseases and neurological disorders



Wire-Mesh Gamma Camera Collimator (1UPM001)

Business Opportunity

With a growing industry for nuclear medicine the Wire-Mesh Gamma Camera Collimator is poised to be a significant improvement against existing Gamma Camera Collimator. Nuclear medicine is critical for the diagnosis of cardiac diseases, blood flow blockages, tumors, organ dysfunctions, and neurological disorders.

Innovation/ Intellectual Property

The Wire-Mesh Gamma Collimator is built using a configuration of wire mesh instead of a solid block of either lead or tungsten normally used in multihole collimator. A PCT application has been filed with application number - PCT/ MY2009/000223.

Industry Overview

Worldwide gamma/scintillation cameras and accessories market is expected to hit USD 820 million by the year 2015⁽ⁱ⁾. Key markets currently are in the USA and Europe with Asia-Pacific and Latin America being among the fastest growing regional markets for gamma cameras. As at January 2012 there are 4 government hospitals focusing on nuclear medicine which indicates that the local market has not been proliferated by the gamma camera therefore there is much room left for local growth ⁽ⁱⁱ⁾.

Competitive Advantages

Compared against conventional multihole collimators the wire mesh collimator has weight savings as much as 60% lighter. It is also proven to be 10x more sensitive than conventional collimators thus having the ability of making early detection of abnormalities (e.g. cancer cells) in the human bodies.

Proposed Business Model

The Wire-Mesh Gamma Collimator is used in gamma camera for cancer cells detection. The proposed business plan is to license out the technology to medical equipment manufactures or develop and produce the Wire-Mesh Gamma Collimator and market it to medical companies.

Project Challenges

The use of nuclear medicine is something that is growing in hand with the advancement of medical technology. Among the challenges faced would be to compete with existing medical companies that have large resources at their disposal. The relative cost of nuclear medicine might discourage early adoption however with an aging population worldwide it can be targeted to higher income countries.

Preferred Partner/ Collaboration

Ideal partners would be medical company specializing in manufacturing gamma camera equipment such as Philips Healthcare or Siemens Healthcare

Innovation Business Opportunities

Wealth for

Project Overview

The Wire-Mesh Gamma Collimator was designed to improve the sensitivity of the gamma camera as well with increased flexibility to detect early stage cancer.

Business Idea

To develop, produce, distribute and license the Wire-Mesh Gamma Collimator to medical equipment companies around the world to help early detection of cancer.

Competitor Analysis

Key players in the nuclear medicine industries would be Philips Healthcare who has a range of well-developed medical imaging devices and Siemens Healthcare where they have medical devices using multiple collimators to obtain a better result. Siemens and Philips Healthcare account for a major share of the global Gamma Camera market.

Project Status

The project has been extensively studied and proven with multiple wire mesh design is ready to be licensed to corporate partners in the field of nuclear medicine who are looking to improve the design and performance of their collimator

Financials

The global market size is at 20,000 units and 10% of this is assumed for the Asian region with initial market penetration of 5% and reaching 10% in year 3. Because of the rapidly expanding markets in the Asia-Pacific it is estimated that Asia will represent 10% of the global markets in the future. The cost of the wire mesh collimator is assumed at RM 32,000.

Year 1:[2000 x 5%] x RM 32,000 = RM 3,200,000 **Year 2**:[2000 x 7%] x RM 32,000 = RM 4,480,000 **Year 3**:[2000 x 10%] x RM 32,00 = RM 6,400,000

Funding Requirement

The research team in interested in licensing out the technology to medical equipment manufactures. The key cost involved would be the redesigning of manufacturing process for the wire mesh collimators and implementing it as to remain compatible with current design of gamma cameras.

Source: (i) Growing Collaboration Between Gamma Camera Makers & Pharmaceutical Companies, [online] last accessed 29th October 2012 : http://news. wooeb.com /NewsStory.aspx?ID=708144 (ii) DEPARTMENT OF NUCLEAR MEDICINE [online] last accessed 29th October 2012 http://www.hkl.gov.my/content/ deptintro. php?Did=21



Innovation Business Opportunity





Growth Promoting Metabolites In Animal Feed (1UPM015)

Animal feed additive that promotes growth and health in fish and poultry



Growth Promoting Metabolites In **Animal Feed**

Business Opportunity

An opportunity to produce feed additives, a USD 15.6 Billion industry in 2011, with a CAGR of 3.8%, is expected to penetrate the untapped developing markets of Asia and Latin America due to industrialization in meat production and increasing awareness towards meat quality and safety.(i)

Innovation/ Intellectual Property

An improved feed additives or food supplement formulation which is obtained from more than one strain of Lactic Acid Bacteria (LAB). This feed additive is used to feed monogastric animals such as avian and fowl.

Industry Overview

The global animal feed additives market is expected to value around USD 19.5 Billion by 2017, growing at a CAGR of 3.8%.⁽ⁱ⁾ Europe and North America dominated the global feed additives demand, accounting for more than 60% of the consumption.⁽ⁱ⁾ Europe is currently the leading market for animal feed additives, accounting for 35% of global market share in 2011 due to regulatory concerns and increasing per capita meat consumption.⁽ⁱ⁾ North America, the 2nd largest market in 2011, accounted for 28% of the global consumption. ⁽ⁱ⁾ The Asia-Pacific market is expected to be the fastest growing region and is expected to hold 28.5% of the global market share in 2016.⁽ⁱ⁾ Rising of meat production and increasing demand for meat products are expected to contribute to the region's growth. Besides, growth for animal feed additives market is expected to be high in emerging countries such as China, India and Brazil which contributed 23% in 2011 and is expected to contribute 39% in 2018.(ii)

Competitive Advantages

LAB has been shown to improve the growth performance for fish. With the increase in weight gain, specific growth rate and improved feed conversion ratio, the metabolites have been shown to improve the immune system of fish and their survival rate upon the challenge of microbial pathogen. Besides, they have also been shown to improve the gut health of poultry.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this product globally to fish and poultry farming industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant feed agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's feed regulatory requirements.

Preferred Partner/ Collaboration

Archer Daniels Midland (ADM) Company, BASF SE, Cargill Inc. and etc. will be one of the best choices as they are all notable major players in global marketplace. Thus, issues regarding feed regulations can be solved easily by their professional located world widely.

Innovation Business Opportunities

Wealth for

Project Overview

A novel metabolites produced by LAB could be used as animal feed additive in fish and poultry farming, replacing antibiotics, in order to prevent problems associated with the emergence of antibiotic resistance in pathogenic bacteria.

Business Idea

To design, develop, produce, distribute and license this product in a form that can be mass marketed across fish and poultry farming industry globally. This can be done by emphasizing the new animal feed additives' potential against pathogenic bacteria.

Competitor Analysis

LAB will be competing with other animal feed additives such as antibiotic, vitamins, antioxidants, amino acids, feed enzymes, feed acidifiers and others which are able to enhance animal nutritional growth and meat quality.

Project Status

The team has tested several strains of LAB and has optimized the processes for producing the feed additive. The research team is seeking for potential partners who are interested in commercializing and license this product.

Financials

According to IMR report by Protégé Associates, Malaysia's local animal health and nutrition market was valued at RM 529 Million in 2009.(iii) Assuming feed additives accounted for 30% of local animal health and nutrition market, the value for feed additives market is estimated at RM 158.7 Million. PeterLab, one of the major local players, accounted for 19.1% of the local animal feed additives market in 2010,(iii) with a value of RM 30.3 Million. Assuming the government will be enforcing stricter Feed ACT, this new product is expected to capture 5% of PeterLab's market share in 3 years' time, growing at a global CAGR of 3.8%.

Year 1: RM 30.3 Million x 105.8% x 3% = RM 0.96 Million Year 2: RM 30.3 Million x 105.8%2 x 6% = RM 2.00 Million Year 3: RM 30.3 Million x 105.8%3 x 10% = RM 3.60 Million

Funding Requirement

The key funding component for this will include the setup of the manufacturing facilities and setting up an extensive marketing network.

Source: (i) Companies and Markets (2012), Asia Pacific to Dominant the Animal Feed Additives Market [online] Last accessed 30th October 2012 at: http://www.companiesandmarkets.com/News/Agriculture-Farming-Raw-Materials/Asia-Pacific-to-dominant-the-animal-feed-additives-market/NI5513 (ii) SBWire (2012), Animal Feed Additives Market is Expected to Reach USD 17.5 Billion Globally I 2018: Transparency Market Research [online] Last accessed 30th October 2012 at: http://www.sbwire.com/press-releases/animal-feed-additives-market-is-expected-to-reach-usd-175-billion-globally-in-2018-transparency-marketresearch-165642.htm (iii) The Star Online (2011), Food Supplements is Good Business for PeterLabs [online] Last accessed 30th October 2012 at: http://biz. thestar.com.my/news/story.asp?sec=business&file=/2011/7/9/business/9060079



Innovation Business Opportunity





Tissue-engineered skin culture technology : MyDerm (1UKM011)

Less painful, fast-healing tissue-engineered skin cultivated from patients' own cells, lowering chances of rejection in skin-grafting procedures



Tissue-engineered skin culture technology : MyDerm (1UKM011)

Business Opportunity

Tissue engineering is a key part in the wound care market which is valued at EUR 13 billion globally ⁽ⁱ⁾. MyDerm is an advanced tissue-engineered skin which has a large range of uses cultivated from the patient themselves which reduces the chances of rejection. It has uses not only for wound care market but also for cosmetic surgery purposes which has an estimated market size of USD 40.1 billion in 2012 ⁽ⁱⁱ⁾.

Innovation/ Intellectual Property

MyDerm, a tissue engineered skin, uses the technique of producing autologous bilayer human skin using human keratinocytes and dermal fibroblasts cultured from a small sample of patient skin by mixing it with human plasma derivatives 9hpd. A Malaysian patent has been granted for this project (MY-137139-A) and a PCT has been filed (PCT/ SG2005/000208).

Industry Overview

Stem cell industry has stabilized with more than half (52%) of the companies comprising the tissue engineering and stem cell industries are revenue-generating, compared to about 21% four years ago⁽ⁱⁱⁱ⁾. The local market for wound care earned about USD 55.1 million in 2010 and is estimated to reach USD 87.1 million in 2017. In 2010 hospitals recorded USD 47 million from foreign patients involved in cosmetic and orthopedic surgeries. The medical tourism industry in Malaysia is envisioned to drive the growth of advanced wound care market in Malaysia ^(iv).

Competitive Advantages

MyDerm, offers the following advantages compared to existing solutions: ⁽ⁱ⁾ Autologous: which increases the acceptance of the new skin ⁽ⁱⁱ⁾ Bi-layered: contains dermis as well as epidermis ⁽ⁱⁱⁱ⁾ 3D: mimics natural skin. MyDerm technology offers less painful and faster healing skin culture and graft technology for greater patient satisfaction compared to conventional skin grafting methods.

Proposed Business Model

Two business models are proposed one is to design, develop, produce and distribute tissue engineered skin and secondly to license the technology and know-how to other manufactures.

Project Challenges

The clinical trials stage is one key are that is going to be a lengthy and time consuming process. Hospitals in Malaysia are not proactive in trying out new products which may be more effective and cost efficient. The lack of a comprehensive wound care management system lead to hospitals choosing the more inexpensive method regardless of its efficiency ^(iv).

Preferred Partner/ Collaboration

Preferred partners or collaborations could come from Tissue Engineering and Regenerative Medicine Society of Malaysia (TESMA) who could work with the Ministry of Health Malaysia to formulate more effective policies on wound management protocols. Ideal corporate partners would consist of specialized companies such as J-TEC, Japan Tissue Engineering Co.Ltd.

Innovation Business Opportunities

Wealth for

Project Overview

Technologically and clinically advanced tissue-engineered skin, MyDerm, has been developed by the project team to address a range of treatment needs in chronic ulcers, skin loss, and reconstructive and plastic surgery.

Business Idea

To design, develop, produce and distribute tissue engineered skin useful in the treatment of burn patient, chronic diabetic ulcer, pressure ulcers, skin disorders, reconstructive surgery and for plastic surgery or any other similar usages.

Competitor Analysis

Competing product's such as moist wound and silvers dressing; wound dressing spray and negative pressure wound therapy (NPWT) are being produced by 3M Healthcare, Glaxo Smith Kline, Johnson & Johnson and Pfzier.

Project Status

The research and developments process and the production facility of MyDerm have been well founded. The team is also targeting to complete the phase I and phase II within 2 years. A spinoff company, SupraCell Medical Technology Sdn. Bhd, has been setup to commercialize MyDerm and they are looking for potential users and partners to take this product to other markets.

Financials

It is assumed that the market rate for tissue engineered skin culture technology would be able to consist of 10% of the local wound care industry with a market penetration rate of 5%, 10% and 15%.

Year 1:RM 17.9 million x 5% = RM 898,722 Year 2:RM 19.1 million x 10% = RM 1.91 Million Year 3:RM 20.5 million x 15% = RM 3.07 Million

Funding Requirement

Funding is required to bring this product to commercialization stage and to enter other potential markets.

Source: (i)ONEMEDPLACE, Phytoceuticals, Ltd [online] last accessed at 31st October 2012 : http://www.onemedplace.com/database/list/cid/14603 (ii) Cosmetic Surgery Markets: Products and Services, BBC Research Market Forecasting, [online] last accessed at 31st October 2012 http://www.bcresearch.com/report/ cosmetic-surgery-markets-hlc061a.html(iii) Tissue Engineering Revenues Rise, Genetic Engineering and Biotechnology News [online] last accessed 31st October 2012: http://www.genengnews.com/gen-articles/tissue-engineering-revenues-rise/4155/?page=1 (iv) Wound Care Market Upbeat as Malaysia Emerges as a Hotspot for Medical Tourism, Frost & Sullivan [online] last accessed at 31st October 2012: http://www.frost.com/prod/servlet/pressrelease.pag?docid=24174 6780&gon11081=MDMI2



Innovation Business Opportunity

RM 1.60 Million Potential Yr3 Revenue





Palm Leaf Extract For Reproductive Organ Ailments (1UPM020)

Nutritional and pharmaceutical products extracted from palm leaves for the treatment of infertility, breast cancer and cardiovascular-related conditions



Palm Leaf Extract For Reproductive Organ Ailments (1UPM020)

Business Opportunity

An excellent opportunity to produce phytoestrogenic (plant-derived xenoestrogens) nutraceutical (nutritional pharmaceutical) products from palm leaf extracts for reproductive ailments, infertility, breast cancer and cardiovascular-related conditions.

Innovation/ Intellectual Property

The innovation involves a method Comprising the steps of pretreating foliages extracting the pre-treated foliages by using a polar solvent, removing the pre-treated foliages from the used polar solvent and concentrating the used polar solvent to acquire the herbal extract. A PCT has been filed with application number (PCT/MY2009/000040).

Industry Overview

The global nutraceuticals market is estimated at about USD 151 billion in 2011, to reach nearly USD 207 billion by 2016, with a projected compound annual growth rate (CAGR) of 6.5% between 2011 and 2016⁽ⁱ⁾.

Nutraceuticals include dietary supplements, functional foods and beverages. Nutraceutical beverages market is expected to experience the highest growth, at a CAGR of 8.8% from 2011 to 2016, valued at USD 57 billion in 2011 and nearly USD 87 billion in 2016. Nutraceutical food market is the second largest market, generating an estimated USD 49 billion in 2011, should reach USD 67 billion in 2016 with a CAGR of 6.4%.

The Malaysian nutraceuticals market relies heavily on imports, although local production is increasing. Market drivers towards healthy food choices, health supplements and natural products are clearly steering Asian businesses to look at local herbs, tropical plants and traditional approaches to nutraceuticals.

Competitive Advantages

The Oil Palm Fronds extract has been demonstrated to have phytoestrogenic properties that protect against oxidative stress, retarded hormone related cancer and prevent ailments or conditions resulting from a decrease in the female sex hormone estrogen. It has also been shown that it is effective against the following conditions: Reproductive organ related ailments, Infertility, Breast cancer and Cardiovascular ailments.

Proposed Business Model

The proposed business is to design and develop the ingredients and base product using this novel method, and to produce and license various food and beverages products based on it.

Project Challenges

As this invention is targeted for the healthcare, wellness and pharmaceutical industries, two major challenges exist: (a) approval from the relevant regulatory compliance agencies, and (b) competition from the many established competitors. **Preferred Partner/ Collaboration**

The ideal business collaborators are biotechnology companies

and nutraceutical companies.

Project Overview

This project is a method of extracting phytoestrogenic nutraceutical composition from palm leaf extract to produce products and ingredients for products. The palm leaf extract has been shown to have therapeutic and beneficial effects for reproductive ailments, infertility, breast cancer and cardiovascular-related conditions.

Innovation Business Opportunities Wealth for

Business Idea

To design, develop, produce and distribute phytoestrogenic nutraceutical ingredients and products that can be marketed and licensed globally as a therapeutic and beneficial product for reproductive ailments, cardiovascular and bone related conditions, cognitive function, urinary incontinence, body fat increase and post-menopausal syndromes.

Competitor Analysis

There are many major global established players in the likes of Solae, Cargill, DSM Nutritional Products, ADM Natural Health and Nutrition, BASF, Dupont, BioCorrex, Abbott Laboratories, Warner-Lambert, Johnson & Johnson, Novartis, Metabolex and many more. In the local Malaysian markets, companies like Oasis Prestige Sdn. Bhd, Furley Bioextracts, Palm Nutraceuticals Sdn. Bhd, Nutra Choice Sdn Bhd, TPM Biotech Sdn Bhd are also in this space.

Project Status

The palm leaf extract has been shown to have therapeutic and beneficial effects for reproductive ailments, infertility, breast cancer and cardiovascular-related conditions. The project team is ready to discuss with potential partners to commercialize this invention.

Financials

Assuming the business markets at least one food and one supplement product, with selling price of USD15 (RM45) and USD32 (RM96) respectively⁽ⁱⁱ⁾. Based on TPM BioTech Sdn Bhd ⁽ⁱⁱⁱ⁾, a company established in 2004 owned by a Malaysian government linked company, with annual revenue is USD 1 million – USD 2.5 million), using 10,000 units sales volume for Year 1, this business may target the following potential revenue with CAGR of 6.5%:

Year 1:	(45x10,000) + (96x10,000)	= RM 1.41 Million
Year 2:	(45x10,650) + (96x10,650)	= RM 1.50 Million
Year 3:	(45x11,342) + (96x11,342)	= RM 1.60 Million

Funding Requirement

Funding requirements will include the cost of establishing the manufacturing facilities, regulatory compliance testing, extensive marketing, promotions and advertising efforts.

Source: (i) Nutraceuticals: Global Markets and Processing Technologies, BCC Research, July 2011 [online] (last accessed: 31 Oct 2012) at: http://www. bcc research.com/report/nutraceuticals-markets-processing-technologies-fod013d.html (ii) Amazon Online portal for Nutraceuticals products at: http://www. amazon.com/s/ref=nb_sb_noss/175-8075981-5279756?url=search-alias%3Dhpc&field-keywords=nutraceuticals (iii) TPM Biotech Sdn Bhd Company Profile [online] at: http://www.alibaba.com/member/my117379020.html



Innovation Business Opportunity

RM 3.21 Million Potential Yr3 Revenue



A Natural Colourant For The Aquaculture Industry (1USM004)

Natural, low-cost and safe bio-based colourant for aquaculture, cosmetics and pharmaceutical industries



A Natural Colourant For The Aquaculture Industry (1USM004)

Business Opportunity

An opportunity to produce natural carotenoid astaxanthin, a highly-valued commercial product with a record price up to USD 7000 per kg, which is widely used in various industries like aquaculture, cosmetics and pharmaceuticals.⁽ⁱ⁾

Innovation/ Intellectual Property

ASTA-XMD20 is a potential natural red pigment resulted from a biological approach. It is extracted from mutant yeast Xanthophyllomyces dendrorhous m20 via a submerged fermentation process.

Industry Overview

Global commercially used carotenoids was valued at an estimated of nearly USD 1.2 Billion in 2010 and is expected to reach USD 1.4 Billion by 2018 with a CAGR of 2.3%.⁽ⁱⁱ⁾ This is due to growing interest in healthy diets which includes functional and processed food products. Astaxanthin, one of the carotenoids was estimated at about USD 257 Million in 2009 by BCC research, which was mostly used in fish colouration.⁽ⁱ⁾ As for human uses, the market is growing and is estimated at about USD 27-40 Million.⁽ⁱ⁾ However, some 90% of astaxanthin is chemically synthesized.⁽ⁱⁱⁱ⁾ Thus, the demand for natural astaxanthin is now emerging where the market size of animal feed colouring agents is estimated at USD 300 Million in 2009 and is expected to reach USD 800 Million in 2020. Further, the annual worldwide aquaculture market for this red pigment is estimated at USD 200 Million with an average price of USD 2500 per kg.⁽ⁱ⁾ In Malaysia, astaxanthin is widely used in aquaculture industry as a supplement in fish feeds which enhances the coloration of fish flesh and skin. The cost of imported astaxanthin is around RM 80-100 Million annually.^(iv)

Competitive Advantages

ASTA-XMD20 is a safe and toxic free product from a biological source. The operational cost is low as it can be easily scaled up for commercial production using well established fermentation technologies, which is environmental friendly. Further, the product can be used in different industries and it is also a good natural source of protein as it contains yeast.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this product globally to aquaculture or other industries.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant food & drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's food & drug regulatory requirements.

Preferred Partner/ Collaboration

DSM, BASF SE, Chr. Hansen and etc. will be one of the best choices as they are all notable major players in global marketplace with operation in Malaysia. Thus, issues regarding food & drug regulations can be solved easily by their professional located world widely.

Innovation Business Opportunities

Wealth for

Project Overview

ASTA-XMD20, a natural colourant obtained from a low cost biologically derived production system that uses yeast to produce astaxanthin, the highly valued natural red pigment.

Business Idea

To design, develop, produce, distribute and license this product in a form that can be mass marketed across aquaculture industry globally. This can be done by emphasizing ASTA-XMD20's potential as a highly valued natural red pigment which is safe and cost efficient.

Competitor Analysis

ASTA-XMD20 will be competing directly with synthetic astaxanthin which are widely available and much cheaper than the natural colourant. Further, families of carotenoids such as Beta-carotene, Lycopene, Canthaxanthin, Lutein and etc. will as well compete indirectly with ASTA-XMD20.

Project Status

This invention is now ready to be commercialized and the research team is seeking for companies and manufacturing companies who are involved in supplying materials to the aquaculture, pharmaceutical and cosmetics industries.

Financials

As some 90% of astaxanthin is chemically synthesized, only 10% of astaxanthin is assumed to be biologically synthesized. Among the RM 100 Million of astaxanthin imported in Malaysia annually, assuming only RM 10 Million are taken into account as natural astaxanthin. As ASTA-XMD20 will be using a cost efficient biological approach to produce, it is assumed that ASTA-XMD20 is able to capture at least 30% of Malaysia's natural astaxanthin market by Year 3. Thus, the financial revenue is as below, assuming this market is expected to grow at a global CAGR of 2.3%.

Year 1: RM 10 Million x 102.3% x 10% = RM 1.02 Million **Year 2**: RM 10 Million x 102.3%2 x 20% = RM 2.09 Million **Year 3**: RM 10 Million x 102.3%3 x 30% = RM 3.21 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for food & drug regulatory control processes which must be completed before commercialization.

Source: (i) oilgae (2012), Astaxanthin [online] Last accessed 1st November 2012 at: http://www.oilgae.com/non_fuel_products/astaxanthin.html (ii) Report Linker (2011) The Global Market for Carotenoids [online] Last accessed 1st November 2012 at: http://www.reportlinker.com/p096628-summary/The-Global-Market-for-Carotenoids.html (iii) NIKKEI.com (2012), JX Unit Looks to Net More of Seafood Colouring Market [online] Last accessed 1st November 2012 at: http://e. nikkei.com/e/fr/tnks/Nni20120918D18JSN01.htm (iv) Research (2006), A Natural Colourant for the Aquaculture Industry [online] Last accessed 1st November 2012 at: http://www.researchsea.com/html/article.php/aid/714/cid/2?PHPSESSID=92ae156683bf



Innovation Business Opportunity





Probiotic Composition For Nutraceutical Product (1UPM016)

Natural dietary supplement that promotes gut health



Business Opportunity

An opportunity to produce nutraceutical products, a USD 142.1 Billion industry in 2011, growing at an expected CAGR of 6.3%,⁽ⁱ⁾ driven primarily by the growing awareness and desires of consumers towards adopting a healthy lifestyle by avoiding the dependence on synthetic drugs.

Innovation/ Intellectual Property

A naturally occurring source of metabolites produced by a probiotics bacterial (Lactic Acid Bacteria- LAB) and the method of using this probiotic as a dietary supplement. Further, the invention has the ability to inhibit various foodborne pathogens and has health promoting effect.

Industry Overview

Global nutraceutical product market is expected to reach USD 204.8 Billion by 2017, growing at a CAGR of 6.3% from 2012 to 2017.⁽ⁱ⁾ North America is expected to dominate the largest market share by 2017, accounting for 39.2%; followed by Asia-Pacific with 30.4% of world's nutraceutical product consumption.⁽ⁱ⁾ In 2011, North America enjoyed the highest market share for nutraceutical products, valuing at USD 56.4 Billion.⁽ⁱ⁾ Further, functional food segment remained the fastest growing segment in North America with a CAGR of 6.5%.⁽ⁱⁱ⁾ Dietary supplements and functional food segment are an emerging market for Asia-Pacific's nutraceutical product market where Japan has the largest consumer, followed by China. As for Malaysia, nutraceutical product market is experiencing solid growth where Malaysia's market is valued around USD 165 Million in 2010, growing at a CAGR of 15%.⁽ⁱⁱⁱ⁾

Competitive Advantages

The metabolites/ probiotics mixture promote friendly gut flora which inhibit gut pathogens and enhance immune system and immune function. As a result, it improves gut health and has the ability to reduce serum cholesterol. Further, probiotics products produce consistent results and have longer shelf life as it is stable at room temperature. The production cost is low and the final form could be liquid or powder.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this product globally to nutraceutical or pharmaceutical industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant food & drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's food & drug regulatory requirements.

Preferred Partner/ Collaboration

Archer Daniels Midland (ADM) Company, BASF SE, Cargill Inc. and etc. will be one of the best choices as they are all notable major players in global marketplace. Thus, issues regarding food & drug regulations can be solved easily by their professional located world widely.

Innovation Business Opportunities

Wealth for

Project Overview

Healthy metabolites produced by LAB that could be used as a probiotic composition for nutraceutical products for human consumptions which promotes health benefits.

Business Idea

To design, develop, produce, distribute and license this product in a form that can be mass marketed across nutraceutical or pharmaceutical industry globally. This can be done by emphasizing the new metabolites' potential in improving immune functions and preventing infections.

Competitor Analysis

Probiotic (LAB) will be competing with other naturally derived functional food such as amino acids, soy-based, protein & peptide supplements and etc. which can be included in dietary supplements for weight control, diabetes control, sports nutrient, meal replacement and etc.

Project Status

This invention has been developed and the research team is seeking for potential partners who are interested in commercializing and license this product.

Financials

The world lactic acid market is expected to reach 259 thousand metric tons by 2012^(iv) and Malaysia is accounted for 0.12% of the global nutraceutical product market. Thus, Malaysia's lactic acid market for nutraceutical product will be assumed at 3,108 metric tons. According to alibaba.com, food grade lactic acid in powder form cost around USD 3600/metric ton. Hence, the potential lactic acid market for nutraceutical product is assumed to value at USD 11.2 Million, growing at a CAGR of 15%.⁽ⁱⁱⁱ⁾ This probiotic produce by LAB that uses new formula will be assumed to capture at least 10% of the market share in 3 years' time.

Year 1: RM 33.6 Million x 115% x 3% = RM 1.2 Million Year 2: RM 33.6 Million x 115%2 x 6% = RM 2.7 Million Year 3: RM 33.6 Million x 115%3 x 10% = RM 5.1 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for food & drug regulatory control processes which must be completed before commercialization.

Source: (i) Transparency Market Research Blog (2012), Nutraceuticals Product Market is Expected to Reach USD 204.8 Billion Globally in 2017 [online] Last accessed 30th October 2012 at: http://www.tmrblog.com/2012/03/nutraceuticals-product-marketglobal.html (ii) Transparency Market Research (2012), Nutraceuticals Product Market: Global Market Size, Segment and Country Analysis and Forecasts (2007-2012) [online] Last accessed 30th October 2012 at: http://www.transparencymarketresearch.com/global-nutraceuticals-product-market.html (iii) Natural Product Insider (2012), Vedic Life Sciences Eyes Malaysian Expansion [online] Last accessed 31st October 2012 at: http://www.naturalproductsinsider.com/news/2012/09/vedic-lifesciences-eyes-malaysianexpansion.aspx (iv) PRWeb (2008), World Lactic Acid Market to Reach 259 Thousand Metric Tons by 2012, According to New Report by Global Industry Analysts [online] Last accessed 31st October 2012 at: http://www.prweb.com/releases/lactic acid/cosmetics food/prweb1509794.htm



Innovation Business Opportunity





High Sensitivity, Low Cost Crack Monitoring Device (1USM012)

Inexpensive, accurate and robust device to detect cracks in concrete structures



High Sensitivity, Low Cost Crack Monitoring Device (1USM012)

Business Opportunity

An opportunity to produce crack monitoring device, an estimated expenditure of USD 1.6 Trillion was needed over the next 5 years to restore the infrastructure in the U.S to an average grade point of $C^{(i)}$

Innovation/ Intellectual Property

To create the new invention of crack monitoring device, the technique of Moire Patterns is used. These patterns can be matched to a reference of predetermined patterns to determine the precise distance and direction that the grids have moved relative to each other and hence, the movement of crack.

Industry Overview

According to the report from Vision 2020, the annual cost to owners for repairing, protecting and strengthening is estimated at a cost of between USD 18 Billion and USD 21 Billion in U.S alone.⁽ⁱ⁾ As for concrete contractors industry in U.S, the market value of the industry is reported at USD 34 Billion.⁽ⁱⁱ⁾ In 2005, American Society Civil Engineering (ASCE) estimated that up to 50% of concrete repair occurs during new construction. Concrete failure include inadequate cover for reinforcing steel, formwork movement, honeycombing, and other "just a few minor crack" or "close enough" situations. All the repairs will be made in any case. However, it is estimated that about 50% of the repairs to concrete fail.⁽ⁱ⁾ The failure rate will increased time to time as most of the repairs are less durable than the original concrete.

Competitive Advantages

The device is inexpensive, accurate, easy to read and robust. This device enables photos to be taken by anyone and anytime as each device has a unique identifying code for matching purpose. Thus, these photos can be kept as a permanent record for the movement over time. Further, photos can be read manually or interpreted by software that has already been developed to match patterns to the predetermined standards, which enable consistent measurements tracked.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this device within South-East Asia as a cost-efficient alternative and to (2) license this device globally to construction or building management industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant standard/ quality control agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory requirements.

Preferred Partner/ Collaboration

Established construction companies, structural repair companies or concrete contractors who have expertise in this highly technical aspect. Thus, issues regarding standard/ quality control regulations of the new device can be solved easily by their professionals.

Innovation Business Opportunities

Wealth for

lalaysia

Project Overview

A simple, inexpensive device for long term monitoring of crack growth in building structure which can be an early warning of structural problems.

Business Idea

To design, develop, produce, distribute and license the system in a form that can be mass marketed across construction or building management industry globally. This can be done by emphasizing the device's sensitivity in measurement as well as its low cost production.

Competitor Analysis

There are limited commercial competitor currently developing industrial-scale crack monitoring device for construction industry as the market is still new in Malaysia.

Project Status

This device is now ready to be commercialized and the research team would like to discuss with interested parties with available distribution networks to launch the device.

Financials

U.S construction was estimated at USD 410 Billion for 2011,⁽ⁱⁱⁱ⁾ while Malaysia construction sector during the first half of 2011 is RM 30.6 Billion^(iv) and the value for 2011 will be assumed at USD 21 Billion. Thus, Malaysia accounted around 5% of U.S construction sector and Malaysia concrete contractors will be assumed at USD 1.7 Billion (RM 5.1 Billion). Assuming the market for concrete contractors that deals with concrete crack will account only 5% of the market, the value of the market will be estimated at RM 255 Million due to human negligence on minor cracks. As Malaysia is focusing more on new construction, it is assumed that the new crack monitoring device will capture about 0.5% of the market value in 3 years' time.

Year 1: RM 255 Million x 0.1% = RM 255 000 Year 2: RM 255 Million x 0.3% = RM 765 000 Year 3: RM 255 Million x 0.5% = RM 1.3 Million

Funding Requirement

The key funding component is for setting up an extensive marketing network for reaching and convincing the construction companies and contractors. The manufacturing setup cost will also add to the funding requirement.

Source: (i) Goodwin, F. (2008), Renovation of The Concrete Repair Industry [online] Last accessed 7th November 2012 at: http://www.icri.org/ PUBLICATIONS/2008/PDFs/marapr08/CRBMarApr08_Goodwin.pdf (ii) **IBIS World (2012)**, Concrete Contractors in The US: Market Research Report [online] Last accessed 8th November 2012 at: http://www.ibisworld.com/industry/default.aspx?indid=200 (iii) **PR Newswire (2011)**, McGraw Hill Construction [online] Last accessed 9th November 2012 at: http://www.multivu.com/mmr/52705-mcgraw-hill-construction-2012-dodge-outlook-report (iv) The Star Online (2012), Buoyant First Half for Construction [online] Last accessed 9th November 2012 at: http://thestar.com.my/news/story.asp?file=/2012/9/28/ecoreport/12087545&sec =ecoreport



Innovation Business Opportunity



Cost-efficient and scalable method to produce carbon nanotubes, used in biosensors, lithium-ion batteries and white light sources



Business Opportunity

The carbon nanotube has unique and extraordinary properties which makes it an ideal candidate for chemical / electrochemical and biosensors, transistors, electron field emitters, lithium-ion batteries, white light sources, hydrogen storage cells, cathode ray tubes (CRTs), electrostatic discharge (ESD) and electrical-shielding applications⁽ⁱ⁾.

Innovation/ Intellectual Property

The carbon nanotubes are produced using a catalytic process which produces carbon nanotubes by the decomposition process of natural gas into carbon nanotubes. A PCT has been applied PCT/MY2008/000143.

Industry Overview

Carbon nanotubes have emerged as one of the important cases of Nano-materials which have the potential to spark the next industrial revolution due to its diverse range of application in various industries. The global CNTs industry turned over around USD 668.3 million in 2010 and is forecast to grow to USD 1.1 billion by 2016 at a Compound Annual Growth Rate (CAGR) of 10.5 %⁽ⁱⁱ⁾. Asia-Pacific represents the largest regional market for carbon nanotubes and major breakthrough in the field of carbon nanotube in countries such as China, South Korea and India are the key drivers which are propagating the consumption of carbon nanotubes in the Asia-Pacific region ⁽ⁱⁱⁱ⁾.

Competitive Advantages

The Continuous Production Method of Carbon Nanotubes Using Rotation Reactor is a breakthrough method in producing carbon nanotubes. The advantages of this production method is it utilizes a two-step process, uses methane which is available in abundance as feedstock, operates at atmospheric pressure contributing to costefficiency and is scalable to any production size limited only to the amount of resources available.

Proposed Business Model

Two business models are proposed firstly to design, developed and create a manufacturing proses for in-house production and secondly to license the technology and know-how to interested companies.

Project Challenges

The critical challenge would be to get existing users of carbon nanotube either for research or commercial purposes to believe that the quality of low cost carbon nanotube produced is of comparable quality to other carbon nanotubes manufactured. A secure chain of supply must also be established to ensure the business viability or a disruption in the supply chain will lead to clientele loss.

Preferred Partner/ Collaboration

Companies like Arkema, Bayer MaterialScience AG, Catalyx Nanotech Inc., Hanwha Nanotech Corporation, Hyperion Catalysis International Inc., Nanocyl S.A. and Nanoledge that fall into the competitor category would make ideal partners for collaboration as they will be able to provide technology oversight and knowledge into the mass production of carbon nanotubes.

Innovation Business Opportunities

Wealth for

Project Overview

The Nanotube production method is a catalytic process for producing carbon nanotubes by the decomposition of natural gas into carbon nanotubes and hydrogen.

Business Idea

To develop, distribute, produce or license the know-how to companies specializing in the production of carbon nanotubes to be used for either research purposes or for commercial reasons

Competitor Analysis

Arkema, Bayer MaterialScience AG, Catalyx Nanotech Inc., Hanwha Nanotech Corporation, Hyperion Catalysis International Inc., Nanocyl S.A. and Nanoledge are among the key players producing carbon nanotubes with production capacity of 5kg/day up to 1000kg/day. Certain manufactures such as Arkema produces the carbon nanotubes in order to aid their existing manufacturing process of other products.

Project Status

The team has built a lab-scale continuous production machines capable of producing 1kg of carbon nanotubes per day. The project is ready to be licensed to companies.

Financials

The expected production rate is 300kg/year with a market price of RM50, 000/kg. A market penetration rate of 5%, 10% and 15% is assumed with the CAGR to be at 10.5%.

 Year 1:300kg x 5 % x RM 50,000
 = RM750,000

 Year 2:[300kg x 1.105] x 10% x RM 50,000
 = RM 1.6 Million

 Year 3:[300kg x 1.105] x 15% x RM 50,000
 = RM 2.5 Million

Funding Requirement

The funding required would be for expanding current nanotube manufacturing capacity (iv) to a larger commercial scale and for marketing cost promoting the carbon nanotubes.

Source: (i)NANO WORK, Global carbon nanotubes market [online] last accessed 5th November 2012: http://www.nanowerk.com/spotlight/spotid=23118.php (ii)Ibid (iii)Global Carbon Nanotubes Market to Reach US\$7.72 Billion by 2015, According to a New Report by Global Industry Analysts, Inc, PR WEB, http://www.prweb.com/releases/carbon_nanotubes/nanotechnology/prweb4482634.htm (iv)BREAKTHROUGH FOR VARSITY, The Star Metro[online]last accesses 7th November 2012 : http://thestar.com.my/metro/story.asp?file=/2012/4/11/north/11080001&sec=north



Innovation Business Opportunity



Effective, low-cost and surgery-free method of removing dead flesh from wounds with no undesirable side effects



Business Opportunity

The wound care market is valued at EUR 13 billion globally⁽ⁱ⁾. The STERILARVAETM product is primarily poised to be used for the cleansing and removal of dead flesh from wound areas. Useful for a variety of conditions such as diabetic foot ulcers, pressure sores, leg ulcers and surgical wounds.

Innovation/ Intellectual Property

The fly larvae or maggots will secrete an enzyme that will only liquefy dead tissue and then proceed to consume this liquefied matter. The said enzyme also acts as a disinfectant to prevent infections.

Industry Overview

The industry on maggot debridement therapy is conflicted with practitioners on both sides of the fence. The perceptions of that maggot are normally associated with rotting and discarded materials may impede the view of that it may be of use in medical therapy. It is estimated that in 2011 about 50,000 treatments took place in the world ⁽ⁱⁱ⁾. It is most prevalent to being used for patients who develop diabetic ulcers. In Malaysia the cost for treating a diabetic ulcer is estimated to be about USD 3,000 while an amputation is estimated to be about USD 2,000 ⁽ⁱⁱⁱ⁾. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030 with Malaysia projected to represent 2.48 million cases ^(iv).

Competitive Advantages

Among the advantages of using the STERILARVAETM is that it is effective in removing the dead flesh around wounded areas, it is a low cost method compared to surgically removing the dead flesh around a wound, has no undesirable side effects, is proven to be save, is a painless procedure and is vital in preventing unnecessary amputation of limbs.

Proposed Business Model

Two business model is proposed firstly is by in-house development, production and distribution and secondly is by licensing the know-how and technology to create the STERILARVAETM product to 3rd party manufactures.

Project Challenges

Making health officials aware of this method of treatment is crucial in getting the health industry to adopt this method as a viable procedure for treatment of intractable wounds. Sufficient literature on the product must be made available to the general public for them to make informed decisions on the method of treatment available regarding STERILARVAETM.

Preferred Partner/ Collaboration

Preferred partners would consist of the Ministry of Health as they can in effect promote the use of STERILARVAETM as an alternative procedure for existing treatment of intractable wounds. Corporate collaborations are also ideal with medical companies as they have resources for mass production and a supply chain network which could prove to be useful.

Innovation Business Opportunities

Wealth for

Project Overview

Introducing live disinfected fly larvae into intractable wounds to help remove dead tissue and disinfect the wound simultaneously.

Business Idea

To develop, produce, distribute and market the STERILARVAETM product to the healthcare industry.

Competitor Analysis

There are no direct local competitors in the Asian region for STERILARVAETM product but in Europe there is a producer of larval for debridement therapy which is Biomonde Ltd. They have a choice of treatments of weather direct application or secondary contact method of application through a biobag.

Project Status

The project is ready to discuss with the healthcare industry in Malaysia and surrounding regions to accelerate the commercialization of the STERILARVAETM product

Financials

The projected number of diabetic patients for the current year is estimated to be at 1.39 million with a CAGR of 3.29%. out of these figures it is estimated that a total of 10% will develop diabetic ulcers which would require treatment of STERILARVAETM. Market breakdown for both products of STERILARVAETM is assumed to be 50% each with the average price per consumption for free range larvae is RM100 and the average price per consumption for the BioBag Larvae is RM150.

(Free Range Larvae + BioBag Larvae)

 Year 1: RM 347,500 + RM 521,250
 = RM 868,750

 Year 2: RM 717,865 + RM 1,076,798
 = RM 1.8 Million

 Year 3: RM 1,107,785 + RM 1,661,677 = RM 2.8 Million

Funding Requirement

The funding is required for marketing the STERILARVAETM to target the specific niche market in the healthcare industry and to help increase production levels in anticipation of increased demand.

Source:(i)ONEMEDPLACE, Phytoceuticals, Ltd [online] last accessed at 9th November 2012: http://www.onemedplace.com/database/list/cid/14603 (ii) Deserving of More Respect: Changing Attitudes toward Maggot Debridement Therapy, Wound Source [online] last accessed 9th November 2012 (iii) Commercial production of sterile maggots of Lucilia cuprina, Institute for Medical Research Malaysia [online] last accessed 9th November 2012: http:// www.imr.gov.my/research-a-publication/commercialised-product/33-commercial-production-of-sterile-maggots-of-lucilia-cuprina.html (iv)Diabetic Foot/Hand Disease, National Orthopedics Registry of Malaysia [online] last accessed 9th November 2012: http://www.acrm.org.my/norm/default. asp?page=/norm/diabeticFootHand



Innovation Business Opportunity





Meliodot - Melioidosis Diagnostic Kit (1USM007)

Rapid, highly sensitive method to detect deadly Burkholderia Pseudomallei bacterium **Meliodot - Melioidosis Diagnostic Kit** (1USM007)

$\left\{ \begin{array}{c} \text{Innovation} \\ \text{Business} \\ \text{Opportunities} \end{array} \right\} \quad \begin{matrix} \textbf{W} \\ \textbf{M} \end{matrix}$

Wealth for Malaysia

Business Opportunity

Malaysia's medical device market is valued at USD 900 million.⁽ⁱ⁾ Melioidosis has been recognized as a complex socio-ecological emerging infectious disease in Malaysia.⁽ⁱⁱ⁾ Even so, it is important to diagnose this disease at an early stage provides timely intervention in patient management to prevent disease progression and fatal complications. Melioidosis Diagnostic Kit has potentials to hit markets out of Malaysia since countries such as Northeast Thailand, Southern China, Singapore, Burma, Vietnam, Taiwan, Northern Australia, Hong Kong, Brunei, India, parts of South America, several countries in Africa and Bangladesh has higher incidence of Melioidosis recorded compared to Malaysia.

Innovation/ Intellectual Property

Meliodot is solely based on enzyme-linked immunosorbent assay (ELISA) for qualitative detection. Patent application number in Malaysia-PI2010003301.

Industry Overview

In 2012, the average size of the annual marketing budget of global medical device industry suppliers is US\$1.7 million, as compared with US\$1.9 million in 2011.⁽ⁱⁱⁱ⁾ Where else Asia Pacific medical device market is expected to account for 25% of global market share and reach US\$62.3 billion in revenue by 2012.^(iv) Though it may be among the smaller Southeast Asian countries, Malaysia has a developed medical device markets, with a market size of \$900 million. With more than 28 million people and a burgeoning middle class, Malaysia's medical device market is expected to grow 10-12 percent in the next five years.

Competitive Advantages

The traditionally used method for the detection of the deadly bacterium, Burkholderia Pseudomallei is complicated and time-consuming as it takes 4 days to obtain a result which is often inaccurate. Meliodot is rapid, highly sensitive, specific, prevents fatalities and can be further developed into a point-ofcare test.

Business Model

Two business models are proposed: (1) to commercialize the product to the Malaysian market and markets outside Malaysia (2) to design and develop the product with more advantages.

Project Challenges

The main challenge of this project is the process of penetrating the product into Malaysian market by emphasizing on the importance of early diagnosis for Melioidosis disease.

Preferred Partner/ Collaboration

Ranbaxy Malaysia, GSK Malaysia and any other medical device suppliers would be an ideal collaboration partner as it will be a stepping stone to penetrate through the Malaysian market and eventually touching the global market share.

Project Overview

The team's product is based on the enzyme-linked immunosorbent assay (ELISA) for qualitative detection of three types of antibodies in human blood which are produced by the body's immune system against certain cell surface structures of the infecting bacterium.

Business Idea

To design, develop, produce and distribute the product into the Malaysian market and gradually taking it globally.

Competitor Analysis

Diseases diagnosing tool kit is a matured industry in developed countries and there are many international players such as GSK, Ranbaxy and etc. operating and offering different types of diagnostic tool kits. However, Melioidosis Diagnostic Kit with the capability of diagnostic with rapid result and high sensitivity is still new in Malaysia.

Project Status

This project is a proof of concept data from clinical samples obtained from University Sains Malaysia and the kit is fully developed and commercial-ready.

Financials

Malaysia, even though being the smaller Southeast Asia countries has medical device market size worth of USD 900 million with 10% of it belonging to the In-vitro diagnostics industry. Thus, assuming that the team's product would be able to penetrate into the In-vitro diagnostics market size approximately 30% by the Year 3.

Year 1: RM 3.0 Million x 10% = RM 0.3 Million Year 2: RM 3.4 Million x 20% = RM 0.7 Million Year 3: RM 3.8 Million x 30% = RM 1.1 Million

Funding Requirement

The startup funding process for this project can be optimized by collaborating with existing medical device companies – their experience in operating in this domain and their existing network will support the commercialization process.

Source: (i) Medical Product Outsourcing [online] Last accessed 8th November 2012 at: http://www.mpo-mag.com/articles/2012/07/asia-news (ii Bicol Regional Training and Teaching Hospital [online] Last accessed 8th November 2012 at: http://brth.doh.gov.ph/index.php?option=com_content &view=article&id=40:lymphatic-filariasis&catid=8:health-topics&Itemid=13 (iii) Industry Review Report Store [online] Last accessed 8th November 2012 at: http://industryreviewstore.blogspot.com/2012/05/global-medical-devices-survey-20122013.html (iv) Medical Manufacturing Asia [online] Last accessed 8th November 2012 at: http://www.medmanufacturing-asia.com/home-about-mma.html



Innovation Business Opportunity







Rapid and easy-to-use tool to detect parasitic worm that causes the elephantiasis disease



Lymphatic Filariasis Diagnostic Kit (1USM009)

Business Opportunity

Malaysia's medical device market is valued at USD 900 million. ⁽ⁱ⁾ Lymphatic filariasis is a disease that appears to be a threaten to 1.3 billion people in 81 countries and 120 million people being currently infected, with about 40 million disfeatured and handicapped by the disease.⁽ⁱⁱ⁾ Thus it is important to diagnose this disease at an early stage and the test kit to diagnose lymphatic filariasis has huge market potential.

Innovation/ Intellectual Property

The newly developed diagnostic test is based on the detection of antibodies produced by the immune system in response to filarial infection. A patent has been granted in Malaysia with patent number - MY-144980-A.

Industry Overview

In 2012, the average size of the annual marketing budget of global medical device industry suppliers is US\$1.7 million, as compared with US\$1.9 million in 2011.⁽ⁱⁱⁱ⁾ Where else Asia Pacific medical device market is expected to account for 25% of global market share and reach US\$62.3 billion in revenue by 2012.^(iv) Though it may be among the smaller Southeast Asian countries, Malaysia has a developed medical device markets, with a market size of \$900 million. With more than 28 million people and a burgeoning middle class, Malaysia's medical device market is expected to grow 10-12 percent in the next five years.

Competitive Advantages

Direct demonstration of the microfilariae in blood has been the traditional method of diagnosing filarial infection. However, this technique and other techniques such as PCR are not effective in diagnosing the disease as they severely lack sensitivity (25%-40%) and can therefore miss out many positive cases, due to their inability of detecting the presence of microfilariae during certain stages of development. The advantages of this test kit is, its rapid, specific, requires minimum training to perform the test and most of all can readily detect W. Bancrofti associated infection which is responsible for Lymphatic filariasis disease in 90% of the cases.

Proposed Business Model

Two business models are proposed: (1) to commercialize the product to the Malaysian market (2) to design and develop the product with more advantages.

Project Challenges

The main challenge of this project is the process of penetrating into the already existing Malaysian market by emphasizing on the key advantages.

Preferred Partner/ Collaboration

Ranbaxy Malaysia, GSK Malaysia and any other medical device

suppliers would be an ideal collaboration partner as it will be a stepping stone to penetrate through the Malaysian market.

Innovation Business Opportunities

Wealth for

Project Overview

A rapid and sensitive diagnostic test to detect Lymphatic filariasis that diagnoses suspected individuals, for accurate mapping of endemic areas, monitoring activities, certification of elimination, and post-elimination surveillance programed.

Business Idea

To design, develop, produce and distribute the product into the Malaysian market and gradually taking it globally.

Competitor Analysis

A rapid antigen-based test kit is currently commercially available for bancroftian filariasis but the USM rapid test is antibody-based which is ideal for certification and postelimination surveillance programmes.

Project Status

This project is ready to be commercialized and it can also be further developed to satisfy more requirements in Lymphatis filariasis diagnosing process.

Financials

Market share for the medical device industry in Malaysia is USD 900 Million with 12% growth rate. 19% from the whole market share belongs to the electro-medical equipment which can be sub-sectored into two sectors; monitoring machines and diagnostic equipment which give 6% each from the electro-medical equipment market size. The team's product is assumed to penetrate 30% of market share from diagnostic equipment sub-sector by Year 3 with the market growing at 12% per year.

Year 1: RM 2.9 Million x 15% = RM 0.45 Million **Year 2**: RM 3.2 Million x 25% = RM 0.80 Million **Year 3**: RM 3.6 Million x 30% = RM 1.08 Million

Funding Requirement

The startup funding process for this project can be optimized by collaborating with existing medical device companies – their experience in operating in this domain and their existing network will support the commercialization process.

Source: (i) Medical Product Outsourcing [online] Last accessed 8th November 2012 at: http://www.mpo-mag.com/articles/2012/07/asia-news (ii) Bicol Regional Training and Teaching Hospital [online] Last accessed 8th November 2012 at: http://brth.doh.gov.ph/index.php?option=com_content &view=article&id=40:lymphatic-filariasis&catid=8:health-topics&Itemid=13 (iii) Industry Review Report Store [online] Last accessed 8th November 2012 at: http://industryreviewstore.blogspot.com/2012/05/global-medical-devices-survey-20122013.html (iv) Medical Manufacturing Asia [online] Last accessed 8th November 2012 at: http://www.medmanufacturing-asia.com/home-about-mma.html



Innovation Business Opportunity





Biolabisiatm An Extract For Post-Menopausal Heart Disease (1IMR002)

Herb solution to cardiovascular disease treatment







Business Opportunity

This product has an opportunity to penetrate a niche medical industry where herbal solutions are quietly growing at a local rate of 30% annually⁽ⁱ⁾. The World Health Organisation estimates 4 billion people use some form of herbal medicine, and the European market is currently worth about RM25bil.

Innovation/ Intellectual Property

A patent has been filed in Malaysia with the application number PI 20054784. Patents have also been filed in China, USA and Japan.

Industry Overview

In a study conducted by University of Alabama⁽ⁱⁱ⁾, USA, "women who go through menopause early, before age 46, have more than twice the risk of having a heart attack, stroke or other cardiovascular event later in life. Out of 2,500 women aged 45-84 years old studied, nearly 6% of women who went through menopause early had some sort of heart event, compared to 2.6% of women who had not gone through menopause".

Statistics department of Malaysia⁽ⁱⁱⁱ⁾ states, "women in the country had a higher life expectancy of 77 years compared with men at 71.9". In its Census 2010^(iv), Malaysia has a population of 27.56 million (14.11 million are males and 13.45 million are females), with average annual population growth rate at 2.17%, where 5.1% are above age 65. This means an estimated 667,831 females in Malaysia faces the risk of postmenopausal heart disease.

Competitive Advantages

This novel process of extracting Labisia Pumila is optimized and reproducible consistently by using high performance liquid chromatography. In pre-clinical trials the extract has demonstrated efficacy in the management of several risk factors associated with cardiovascular disease in estrogen depleted subjects including: weight gain; utilisation of glucose; levels of biochemical markers for lipids, apolipoproteins and endothelial functions; adipokine proteins and related genes.

Proposed Business Model

The proposed business is to develop and produce various product applications using the base technology (labisia pumila extracts) for the medicinal, wellness and healthcare industries.

Project Challenges

The use of Labisia Pumila extracts for medicinal value is a common traditional method. Besides extensive clinical trials needed, it faces the challenge to re-position this as a modern cure with state-of-the-art solution for the global market. **Preferred Partner/ Collaboration** Potential partners may include biotechnology companies and pharmaceutical companies.

Project Overview

A novel process for preparing a standardized extract of Labisia Pumila with beneficial health effects including cardioprotective properties.

Business Idea

To develop, produce and market this product as an extract as well as a medicinal product that can be used to treat and minimize the risk of post-menopausal heart disease.

Competitor Analysis

There are two categories of competitors for this innovation: (a) Companies (branded and generic) producing estrogen and progestin-containing drug products or postmenopausal hormone therapy for post-menopausal heart disease, and (b) Companies producing Labisia Pumila extracts for other medical or wellness purposes.

Project Status

The research team has conducted pre-clinical trials and in their pilot scale human toxicology studies, the product shows no adverse effects.

Financials

Based on published online drug retail prices^(v), a typical drug tablet for postmenopausal treatment ranges from USD 40-60 (RM120-RM180) per packet of 28.

Assuming a target penetration of 1% of women above 65 years old in Malaysia, with CAGR of 30% towards natural drugs, where each customer purchases on average 1 packet every two months, will give a potential revenue of:

 Year 1:
 6,678 x RM120 x 6 = RM 4.8
 Million

 Year 2:
 8,681 x RM120 x 6 = RM 6.25
 Million

 Year 3:
 11,285 x RM120 x 6 = RM 8.13
 Million

Funding Requirement

The development and production costs are the key costs to be considered for funding requirement. These include the cost of the clinical test, FDA approval and regulatory compliance for this new drug.

Source: (i) Growing our herbal industry, The Star, 5 December 2011 (online) [last accessed: 6 Nov 2012] at: http://thestar.com.my/lifestyle/story.asp?file= %2F2 011%2F12%2F5%2Flifefocus%2F9771018 (ii) Early menopause raises heart disease risk -study, Reuters, Jun 21, 2010 (online) at: http://www.reuters.com/ article/2010/06/21/heart-menopause-idUSN2124623420100621 (iii) Chinese women have highest life expectancy in Malaysia, New Straits Times, 23 Dec 2011 (online) at: http://www.nst.com.my/top-news/chinese-women-have-highest-life-expectancy-in-malaysia-1.23148#ixzz2BiwrciaA (iv) Department of Statistics, Malaysia, official website at: http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=350%3Apreliminary-count-report-populationand-housing-census-malaysia-2010&ccatid=130%3Apopulation-distribution-and-basic-demographic-characteristic-report-population/bostime-opausal-2010&Itemid=154&lang=en (v) Postmenopausal Symptoms Medications, Drugs.com portal (online) at: http://www.drugs.com/condition/postmenopausalsymptoms.html; http://www.pharmacychecker.com/compare-drug-prices-online-pharmacies/Ortho-Novum+1&25235-1+mg&25235mg+mg/25856/191040/



Innovation Business Opportunity



Effective, rapid and low-cost tool to detect insecticide poisoning

RM

fillion





Business Opportunity

An opportunity to introduce a simple yet effective test kit to detect insecticide poisoning based on saliva testing, especially in developing countries where mortality can be 99% due to insecticide poisoning⁽ⁱ⁾.

Innovation/ Intellectual Property

Patent granted in Malaysia (MY-137266-A) on 30 Jan 2009 – with status "Published As Lapsed", in United Kingdom (UK-GB2397125) on 22 Nov 2003, in Vietnam (7615) on 25 May 2009, and pending status in China and Indonesia (ID 0 019241) filed on 7 May 2007.

Industry Overview

In a report prepared for FAO, UNEP and WHO⁽ⁱⁱ⁾, an estimated 1 million to 5 million cases of pesticide poisonings occur every year, resulting in 20,000 fatalities among agricultural workers – estimated at as many as 25 million⁽ⁱ⁾ in the developing world. According to Freedonia⁽ⁱⁱⁱ⁾, the world demand for pesticides is projected to increase 2.9% per year to USD 52 billion in 2014.

The current diagnosis of insecticide poisoning is based on the symptoms and description of the events surrounding the poisoning. Currently blood tests are used to confirm organophosphate or carbamate poisoning. Blood is tested for the presence of an enzyme called acetylcholinesterase (ACE).

There currently exist other rapid test kits for the detection of ACE in water and in the environment.

Competitive Advantages

The discovery of ACE in human saliva by the research team led to the development of a rapid, sensitive and cost-effective saliva-based test to determine the ACE level due to insecticide poisoning that outweigh the disadvantages of collecting and testing blood samples. Since saliva is much easier to collect, large populations can be easily screened rapidly within a short period of time.

Proposed Business Model

The proposed business model is to develop, mass produce and to license this method of rapid testing globally via reseller channels or to medical accessory providers of test kits, specially targeting the developing countries.

Project Challenges

One of the major challenges is to maintain the costeffectiveness and consistent accuracy of this rapid test kit, as compared with the current approach of blood tests. This can only be achieved be ensuring mass production and distribution of this product globally.

Preferred Partner/ Collaboration

Potential collaborators are biotechnology companies, existing producers of medical test kits and providers of life sciences and diagnostic solutions. Eg: MP Biomedicals LLC, AB SCIEX, Leica Microsystems, Beckman Coulter Inc, etc.

Project Overview

A rapid test kit to detect poisoning due to organophosphate and carbamate based insecticides in humans. The test does not require invasive collection of blood samples and relies entirely on saliva samples collected.

Business Idea

To design, develop and produce a cost-effective saliva-based testing method of detecting insecticide poisoning in humans, especially in developing and agricultural industries.

Competitor Analysis

Two categories of competitors are identified, both of which are indirect competitors where their methods and products are not identical. (a) Producers of rapid test kits for detection of ACE in the water and environment, and (b) laboratory testing of blood samples for presence of ACE.

In the first category, the test kits are used to detect water toxicity, presence of ACE in fruit and vegetables. The tests can be done in the field and results known within minutes. In the second category, the blood sample has to be sent back to the laboratory and results known after several days.

Project Status

Samples are available, all research work is completed, and the project team is ready to discuss with interested parties in developing, producing and marketing the kit.

Financials

Based on existing rapid test kits for humans^(iv) and the need to be low cost for developing countries, assume the selling price is USD200 (RM600) for 100 tests, and a penetration of 5% of the total agricultural workers in developing countries, with CAGR 2.9% will give potential revenue:

```
Year 1: 1.25 million x (RM600 / 100 tests) = RM 7.5 Million
Year 2: 1.29 million x (RM600 / 100 tests) = RM 7.7 Million
Year 3: 1.33 million x (RM600 / 100 tests) = RM 8.0 Million
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Funding Requirement

In addition to the initial capital investment of producing the product, other funding requirements will include the cost of regulatory compliance, marketing (promotions via distribution of free samples in developing countries), educational programs, and cost of trademarking.

Source: (i) Acute pesticide poisoning: a major global health problem, Jeyaratnam, J, World Health Stat Q, 1990. 43(3): p. 139, (ii) Childhood pesticide poisoning: Information for advocacy and action, prepared for the United Nations Environment Programme, Published in May 2004, Dr Lynn Goldman, Professor, Environmental Health Sciences, John Hopkins School of Hygiene and Public Health [online] (last accessed: 10 Nov 2012) at: http://www.who.int/oeh/publications/ pestpoisoning.pdf (iii) World Pesticides, Freedonia Group Inc, Aug 1, 2010 at: http://www.marketresearch.com/Freedonia-Group-Inc-v1247/Pesticides-2785223/ (iv) BioAssay Systems, company website at: http://www.bioassaysys.com/products.php?q=enzyme; MediBena, company website at: http://www.medibena.at/ quantichrom-acetylcholinesterase-assay-kit.html



Innovation Business Opportunity

RM 10.04 Million Potential Yr3 Revenue



Passive Network-Security Monotring Software (1USM016)

Cross-platform, comprehensive and high-speed network security monitoring



Passive Network - Security Monotring Software (1USM016)

Business Opportunity

There are about 52% of enterprises are planning to increase their network equipment spending in the short term to medium term, which poses huge opportunity for this software to be further develop and commercialized.⁽ⁱ⁾

Innovation/ Intellectual Property

Current software can be run on a central server or a simplified version can run on a laptop to be plugged into any Ethernet segment for immediate monitoring. An international patent has been filed to protect key aspects of this invention and the software is protected by copyright.

Industry Overview

Global market for Information Technology & Communications (ICT) Networking equipment/ products is expected to reach USD 214.2 Billion by 2015 as there are strong demand especially from emerging markets like Asia-Pacific, Latin America and Eastern Europe.⁽ⁱ⁾ According to IDC, network management software and appliance market is worth USD 2.5 Billion in 2011, growing at a CAGR of 9.1% over 2010 and the market is expected to reach USD 4 Billion in 2017, growing at a CAGR of 7.5%.⁽ⁱⁱ⁾ CA technologies, NetScout and IBM are the 3 market leaders in 2010, accounting for 36.9% of the market where there is a significant increase from 30.7% market share in 2009.⁽ⁱⁱ⁾ Healthcare, financial services and the government sector will be the major target markets for network equipment vendors as they will remain as the major big spenders due to rapid proliferation of internet across business and geographies as well as growing concerns against terror strikes for worldwide public and private properties.

Competitive Advantages

The software can be used across different platforms with its three new patented concepts which work in real time passive network monitoring: (1) 3-tier monitoring architectureprovides complete coverage of a network (2) innovative buffering- handle high speed network traffic without losing packets (3) distributed passive data gathering and processingdata collected at each point is pre-processed to reduce bandwidth consumption.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this software within South-East Asia as a cost-efficient alternative and to (2) license this system globally to software or security companies

Project Challenges

Every company has their own network monitoring system and it will be a challenge to convince them to adapt to a new system. Thus, one of the key solutions is to provide alternative options. E.g. Integrate this software to the current system.

Preferred Partner/ Collaboration

IBM, HP, CA Technologies and etc. will be one of the best choices as they are all notable major players in global marketplace. Thus, issues regarding system integration can be solved easily by their professional located world widely.

Innovation Business Opportunities

Wealth for

Project Overview

Software for distributed network monitoring across multiple platforms and protocol which monitors the performance and security of a network, whilst minimizing the creation of additional network traffic.

Business Idea

To design, develop, produce, distribute and license the software in a form that can be mass marketed across the globe. This can be done by emphasizing three patented concepts that can be used across different platforms and technical support to clients will be provided.

Competitor Analysis

The network management and monitoring market is highly fragmented with various providers with different products. However, there are no dominant market players in the industry. Thus, there are opportunities for new entrants to offer network administrators additional functionality as well as good product support.

Project Status

This product has been fully developed and is ready to be commercialized. It is currently being used to monitor several networks and the research team is able to demonstrate the use of this software to potential customers.

Financials

The financial is built based on one-stop service package which assumed to be cost RM 69,000 and the services included are installation/integration, configuration, training and support services. As of 2011, there are 972,500 companies were registered.⁽ⁱⁱⁱ⁾ 30% of the companies are assumed to be medium-large scaled companies and 52% of them, which is 151,710 companies, are willing to increase their spending on network equipment. As the number of companies is currently too huge to be handled and assuming majority of the companies are resistant to change, targeting 150 mediumlarge scaled companies by Year 3.

Year 1:	RM 69 000 x	30 = RM	2.1 Million
Year 2 :	RM 69 000 x	80 = RM	5.5 Million
Year 3:	RM 69 000 x	150 = RM	10.4 Million

Funding Requirement

The key funding requirement will be for further developing this software into various forms and functionalities for easier integration to existing monitoring system used by other companies.

Source: (i) **GIA (2012), Networking Hardware and Software Industry- A Global Outlook** [online] Last accessed 12th November 2012 at: http://www.strategyr. com/pressGOS-030.asp (ii) **IDC (2012), Market Analysis** [online] Last accessed 12th November 2012 at: http://www.ca.com/us/~/media/files/industryanalystreports/ idc-network-mgmt-excerpt.aspx (iii) **SSM (2012), Total of Registered Companies and Business** [online] Last accessed 12th November 2012 at: http://www.ssm. com.my/en/statistic-total-business-companies?field_date_year_value[value][year]=&=Search



Innovation Business Opportunity



Ecologically-friendly and non-toxic palm-oil based material used in oil drilling
Visco Ligno: 4-In-1 Drilling Agent Solution (1USM011)

Business Opportunity

An opportunity to produce Visco Ligno, utilizing the latest innovation at a relatively lower cost compared to existing oilfield specialty chemicals. This can be seen from one of the examples, Scomi Group Bhd, winning RM 130 Million drilling fluids contract from Qatar Petroleum which are supported by its Research Centre in Malaysia.⁽ⁱ⁾

Innovation/ Intellectual Property

Visco Ligno is made from the lignocellulosic waste from oil palm production. It acts as a viscosifying, gelling, pHcontrolling and rust retardant agent and it is particularly useful in deeper hydrocarbon wells.

Industry Overview

Global market for oilfield specialty chemicals reached nearly USD 16 Billion in 2010 with U.S and Canada dominated the world demand, accounting for 52%.⁽ⁱⁱ⁾ This is followed by Latin America with nearly USD 1.8 Billion sales where most of the demand came from Brazil.⁽ⁱⁱ⁾ Further, the global demand is expected to reach USD 19 Billion by 2015, growing at a CAGR of 3.5%.⁽ⁱⁱ⁾ Although global economic has been uncertain recent years, the oilfield chemical market is experiencing growth for the past 4 years. Europe's oil field production is slowing down due to aging wells and restrictions on many chemicals formally used. Asia Pacific it is expected to show strong growth in the drilling, cementing and stimulation market. However, the production of chemicals will experience slower growth due to much of the new development are focusing on shale gas fields.

Competitive Advantages

Visco Ligno is an ecologically friendly non-toxic material that derived from palm oil waste. Its operational functionality and stability is resistant to 200°C, drilling up to 10km depth. Visco Ligno's good drilling and viscosifying characteristics can even work at low dosages such as 0.5% w/w. Further, Visco Ligno can as well control the acidity level of the drilling mud in the range of pH8 to pH 10 at various temperatures.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute Visco Ligno within South-East Asia as a cost-efficient alternative and (2) license Ligno Zorp to oil and gas industry or construction drilling industry.

Project Challenges

One of the key challenges for Visco Ligno is to gain worldwide regulatory approvals such as the Environmental Quality Act of 1974 from relevant agencies. However, this might be a time consuming process in some cases. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory requirements for environment.

Preferred Partner/ Collaboration

Established oil and gas organization such as Petronas, ExxonMobil, Shell, Scomi and etc. will be the best choice as they are all notable big players in global marketplace with operation in Malaysia. Thus, issues regarding Environmental Quality Act of 1974 or other regulations can be solved easily by their professional located world widely.

Innovation Business Opportunities

Wealth for

Project Overview

The Visco Ligno total drilling solution that acts as a viscosifying, gelling, pH-controlling and rust retardant agent and is thermally stable up to 200° C.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally emphasizing its potential in turning palm oil waste into a 4-in 1 functional drilling agent at low cost.

Competitor Analysis

VIsco Ligno will be competing directly with formulated drilling chemical agent such as carboxymethyl cellulose, xanthan and guar gum which are already widely used and available in the market.

Project Status

The invention has been filed tested and developed. The research team is looking for commercial partners to participate in marketing Visco Ligno as well as manufacture it in commercial quantities.

Financials

There are 140 oil wells were drilled between 2004 and 2008(iii) and it is estimated that 20,000 lbs (approx. 9072kg) of guar gum is need to frac one oil well.^(iv) Assuming 9072kg of Visco Ligno can frac one oil well, the potential market value will be RM 381 Million with a markup price of Visco Ligno at RM300/kg. With Visco Ligno's low cost production, it is able to capture at least 30% of the market share, assuming government will enforce regulations towards ecofriendly drilling agent. Thus, the projected financials will be as below, assuming the market is growing at a global CAGR of 3.5%.

Year 1: RM 381 Million x 103.5% x 10% = RM 39.4 Million Year 2: RM 381 Million x 103.5%2 x 20% = RM 81.6 Million Year 3: RM 381 Million x 103.5%3 x 30% = RM 118.3 Million

Funding Requirement

The key funding requirement is for industrial scale equipment for scaling up the production and for setting up an extensive marketing network.

Source: (i) The Star Online (2012), Scomi Wins RM 130 Million Contract [online] Last accessed 14th November 2012 at: http://biz.thestar.com.my/news/story. asp?file=/2012/8/24/business/11905113&sec=business (ii) Oil & Gas Journal (2012), IHS: Shale Plays Driving Demand for Oilfield Chemicals [online] Last accessed 14th November 2012 at: http://www.ogj.com/articles/2012/02/ihs-shale-plays-driving-demand-for-oil-field-chemicals.html (iii) FMT (2012), What Happen When Our Oil Wells Run Dry? [online] Last accessed 14th November 2012 at: http://www.freemalaysiatoday.com/category/opinion/2012/09/12/what-happens-whenour-oil-wells-run-dry/ (iv) Texas A&M System (2012), Guar in West Texas [online] Last accessed 14th November 2012 at: stream.loe.org/images/120413/Guar%20 West%20Texas%202012.ppt



Innovation Business Opportunity





5 In 1 Machinery For Paddy Field Land Preparation (4SME001)

Multifunctional machine for ploughing, harrowing, tillaging, soil-leveling and pesticide/herbicide spraying in rice fields

5 In 1 Machinery For Paddy Field Land Preparation (4SME001)

Business Opportunity

There is an opportunity to produce this multifunctional machine where in 2012, only 71% of the rice is being produced in Malaysia and the yields are still low due to high cost production and relatively unproductive agricultural system.⁽ⁱ⁾

Innovation/ Intellectual Property

A 5-in-1 multifunctional machine that can perform all the five steps of land preparation for the paddy field which will greatly reduce the work load. This invention is protected through patent granted in Malaysia (MY-146322-A).

Industry Overview

FAO estimated that the rice paddy production in 2012 will fall by 7.8 Million tons to 724.5 Million tons due to India's below-average monsoon rains.⁽ⁱⁱ⁾ Asian countries are expected to register production gains reaping up 657 Million tons in 2012, growing 0.4% from the strong performance in 2011.⁽ⁱⁱ⁾ As a result, the global trade in 2012 is expected to decline 1 Million tons to 34.2 Million tons.⁽ⁱⁱ⁾ However, paddy production in Malaysia is shrinking due to diminishing paddy planted area. As of 2009, there are around 172,000 paddy farmers in Malaysia utilizing 674,928 hectares of land: 76% from Peninsular Malaysia, 18% from Sabah & Sarawak and 6% from the total hectarage respectively.⁽ⁱⁱⁱ⁾ In 2010, Malaysia produced 2.55 Million MT of paddy with a value of USD 683 Million.(iv) The value Malaysia gained from paddy exports is USD 422, 000 with 670 Tons of paddy in 2011.^(v) Singapore appears to be the major country that imports 86% of Malaysia's paddy export.(v)

Competitive Advantages

This 5-in-1 multifunctional machine for paddy fields works integrated working system such as ploughing, harrowing, subsurface tillage, subsoil leveling, pesticide control and herbicide control. It is estimated that with the use of this machine, the overall cost of preparing the land would reduce around 30% where traditionally, different machines are required to perform 5 different tasks.

Proposed Business Model

Two business models are proposed: (a) to design, develop, produce and distribute this machine within South-East Asia as a cost-efficient alternative and (b) license this machine to agriculture industry or original equipment manufacturers.

Project Challenges

Most of the agriculture activities in Malaysia are using traditional techniques and are still developing. Thus, the major challenge that might be faced is convincing and educating the farmers on how to use this multifunctional machine.

Preferred Partner/ Collaboration

Kubota or SIME Kubota (Malaysia's operation), the trusted brand worldwide which has earned its global leadership will be the best choice to start on manufacturing and commercializing this machine. Besides, issues regarding convincing, training and supporting the local traditional farmers can be solved easily with its established brand.

Innovation Business Opportunities

Wealth for

Project Overview

A multifunctional machine for paddy field works that can integrate tasks such as ploughing, harrowing, subsurface tillage, subsoil leveling and pesticide and herbicide spraying.

Business Idea

To design, develop, produce, distribute and license the machine in a form that can be mass marketed across agriculture industry globally emphasizing its potential in reducing 30% of the cost for paddy field land preparation.

Competitor Analysis

There are limited commercial competitors currently developing industrial-scale 5-in-1 paddy field land preparation machine as most of them are still under development. However, this machine will be competing with other paddy related multifunctional machine.

Project Status

Initial R&D has been completed and the functional prototype is ready. The inventor would like to discuss with potential companies that can manufacture, sell and distribute this machine through licensing.

Financials

Assuming the 5-in-1 multifunctional machine cost around USD 4000, the potential market size for the machine with 172,000 paddy farmers will be estimated at USD 688 Million (RM 2.1 Billion). This machine is expected to capture 5% of the market share by Year 3 as it can help farmers to reduce 30% of the cost for preparing the paddy land. Moreover, traditional paddy farmers started to shift towards mechanized rice production.

Year 1: RM 2.1 Billion x 1% = RM 21 Million **Year 2**: RM 2.1 Billion x 3% = RM 63 Million **Year 3**: RM 2.1 Billion x 5% = RM 105 Million

Funding Requirement

The start-up process can be optimized by collaborating with existing agriculture product manufactures for production know-how and infrastructure.

Source: (i) The Malaysian Insider (2012), Agriculture in Malaysia's Economic and Social Transformation- Colin Barlow [online] Last accessed 15th November 2012 at: http://www.themalaysianinsider.com/litee/print/sideviews/agriculture-in-malaysias-economic-and-social-transformation-colin-barlow/ (ii) FMT (2012), Global Rice Supply Outstrips Demand [online] Last accessed 15th November 2012 at: http://www.freemalaysiatoday.com/category/business/2012/08/08/ global-rice-supply-oustrips-demand/ (iii) UMT (2012), Impact of Price Support Policy on Malaysian Rice Industry [online] Last accessed 15th November 2012 at: http://fullpaperumtas2012.unt.edu.my/files/2012/07/PM15-ORAL-PP799-804.pdf (iv) FAO (2010), Top Production- Malaysia- 2010 [online] Last accessed 15th November 2012 at: http://faostat.fao.org/site/339/default.aspx (iv) Trade Map (2011), List of Importing Markets for the Product Exported by Malaysia in 2011 [online] Last accessed 15th November 2012 at: http://www.trademap.org/Country SelProductCountry.aspx



Innovation Business Opportunity





An Innovative Dual-Locking System For Motorcycles (1USM014)

Convenient and effective motorcycle-immobilising anti-theft device



An Innovative Dual-Locking System For Motorcycles (1USM014)

Business Opportunity

An excellent opportunity to provide an innovative dual locking system for motorcycles, where the global demand for motorcycles is forecast to grow 6% annually, representing USD 49 billion⁽ⁱ⁾ in manufacturers' sales in 2011.

Innovation/ Intellectual Property

Patent granted in Malaysia (Patent No. MY-144136-A) on 10 Aug 2011 for Throttle And Brake Lock.

Industry Overview

For 2011⁽ⁱⁱ⁾, the domestic sales of motorcycle in Malaysia stood at 407,567 units for all classes of motorcycles. Export for 2011 was recorded as 520,368 units (valued at USD 4.79 billion including vehicle and parts), compared with 493,143 units for 2010 (USD 4.47 billion), an increase of 27,225 units or 5.5%.

According to the General Insurance Association of Malaysia (PIAM)(iii), the total number of motorcycles reported stolen in 2010 for all states in Malaysia was 27,034, compared with 30,533 for the previous year.

Global Industry Analysts, Inc^(iv) forecasts that global motorcycles, scooters & mopeds market may reach 75 million units by 2015, driven by growing urbanization, rising population, government policies, fuel efficiency and pricing.

Competitive Advantages

This product immobilises the motorcycle from the handlebar to avoid the user having to bend down to secure the bike. A device was designed that prevents the throttle being turned or the brake being used, making the motorcycle unusable.

The throttle lock design includes a dual locking system to increase the resistance of the lock to being broken, reducing the risk of theft by increasing the time required to free the bike. The dual locking system designed by the bike consists of password lock and round lock. The design also features a flexible gripping system that enables it to be used on most types of motorcycles and mopeds.

Proposed Business Model

The proposed business is to design, develop and produce various models of this product to appeal to consumer preferences – colour, shape, aesthetic design, etc for sale to channel resellers and original equipment manufacturers (OEM)

Project Challenges

The biggest challenge is to brand, market and distribute this globally, targeting the luxury and premium motorcycle owners, rather than the mass market of low-end users.

Preferred Partner/ Collaboration

Potential collaborators are the motorcycle accessories manufacturers, security system providers.

Project Overview

A new and innovative mechanical device to immobilize a motorcycle to prevent theft that operates by preventing the throttle and brake being used.

Innovation Business Opportunities Wealth for

Business Idea

To design, develop, produce and distribute this product globally targeting the luxury high-end superbike class (over 250cc) of motorcycle owners, and the middle category motorcycle owners (125 - 250cc).

Competitor Analysis

There are two categories of competitive products ^(v) in the market. (a) Physical locking devices made of various types of materials that come in different shapes, sizes and prices. Many of these are manufactured in China, (b) Motorcycle alarm systems that come with one-way transmitter and remote control up to a specific distance, with ID code to lock/unlock, and may come with GPS tracking systems.

Project Status

The researchers have developed a CAD design and also have manufactured a prototype to demonstrate the functionality of the product. Further development would include product engineering and product development to suit specific needs.

Financials

The higher brand models of motorcycle security alarm systems (eg: CycloneTM, Talon, Scorpio, SteelMate) ranges from USD 199 – 380 (approx. RM 600 – 1,200). Assume the price of this product at RM 800, targeting 1% of domestic sales and global exports of 125 cc and above motorcycle owners with CAGR 5.5%, will give potential revenue:

Year 1:((55,066x1%)+(454,350x1%))xRM800 = RM4.1 Million Year 2:((58,095x1%)+(479,339x1%))xRM800 = RM4.3 Million Year 3:((61,290x1%)+(505,703x1%))xRM800 = RM4.5 Million

Funding Requirement

In addition to the initial capital investment for the manufacturing, funding may be required for further product development and engineering to suit the specific marketing needs and customization of the product, and the branding, marketing and promotion to target for the high (superbikes) and middle level (125-250cc) motorcycle owners.

Source: (i) Global Motorcycle Demand to Exceed 59 Million Units in 2011, Freedonia Group, Inc, Feb 07, 2008 (online) [Last accessed: 14 Nov 2012 at: http:// www.marketwire.com/press-release/global-motorcycle-demand-to-exceed-59-million-units-in-2011-818672.htm (ii) Fiscal Year 2011 Automobile & Motorcycle Statistics and Summary, Malaysia Automotive Institute website at: http://www.mai.org.my/ver1/index.php?option=com_content&view= article&id=2074:march-2012-and-fiscal-year-2011-automobile-a-motorcycle-statistics-and-summary&catid=34:asian&Itemid=163 (iii) Insurance Industry Statistics on stolen vehicles, Table 8.1: Motorcycle Theft 2010, General Insurance Association of Malaysia at: http://www.piam.org.my/news/piamnews/ p014e.htm (iv) Global motorcycles, scooters & mopeds market to reach 75 million units by 2015, Global Industry Analysts, Inc. Oct 26, 2010 http://www.prweb.com/releases/ motorcycles_scooters/mopeds_two_wheelers/prweb4695274.htm (v) Alibaba trading portal. at: http://www.alibaba.com/products/F0/motorcycle_security_systems. html?qrwKey=motorcycle_security_systems&oriKey=motorcycle_security_systems.providers&qrw=1



Innovation Business Opportunity





Rapid Test Kit For Insecticide Resistance Detection (1IMR004)

Cost-effective and rapid test kit for insect management in agriculture industry



Rapid Test Kit For Insecticide Resistance Detection (1IMR004)

Business Opportunity

An opportunity to offer an alternative cost-effective rapid test kit for testing insecticide resistance, where world pesticide usage was approximately 5.2 billion pounds in 2007⁽ⁱ⁾.

Innovation/ Intellectual Property

Patent granted in USA (US 7233555B2) on 29 May 2007, in China (ZL 02 1 58931.3) on 10 Jun 2009 and in Australia (PI 200224414) on 21 Nov 2008. Pending status in EU.

Industry Overview

Freedonia estimates the world demand for pesticides to increase 2.9% per year to USD52 billion in 2014⁽ⁱⁱ⁾, and will approach USD57 billion in 2016. Central and South America is projected to offer the best growth opportunities through 2014. The Africa/Mideast region is also expected to post above average growth, but will remain the smallest regional market. The major players in the insecticides segment in the Asian market are China, Japan and India.

Demand for insecticides in the future will continue to be impacted by changing insect management practices, amid concerns about environmental and human health. Insecticide resistance management requires effective techniques for detecting resistance in its early stages of development so that necessary step scan be taken for insect control using alternate methods or chemicals. Detecting the level of the four major enzymes can determine the level of resistance

Competitive Advantages

This method and technology is based on using enzymes to perform the test. As such it is rapid (requires only 10-30 minutes to perform), cost-effective, requires minimum skills to administer the test, does not require any machines or equipment, can be done in the field and the results are based on colour development hence easy to read and to analyse.

Proposed Business Model

The proposed business model is to develop, mass produce and to license this method of rapid testing globally via reseller channels or to medical accessory providers of test kits, specially targeting the developing countries.

Project Challenges

One of the major challenges is to maintain the costeffectiveness and consistent accuracy of this rapid test kit under varied weather and environmental outdoor conditions.

Preferred Partner/ Collaboration

Potential collaborators are biotechnology companies, existing producers of medical test kits and providers of life sciences and diagnostic solutions.

Project Overview

The development of a low-cost and effective enzyme-based testing method to detect insecticide resistance. This test kit can be easily used in the field and does not require laborious, time-consuming methods to detect insecticide resistance in insects.

Innovation Business Opportunities Wealth for

lalavsia

Business Idea

To design, develop, produce and market a rapid and easy-toperform test for detecting insecticide resistance due to certain enzymes that insects produce.

Competitor Analysis

In the category of rapid test kits for insecticide resistance, there are a few similar products in the market using biochemical or bioassay methods. All uses similar tests to detect the presence of the enzymes to determine pesticide resistance. Eg: GT Test kit developed in Thailand, products from Premier Diagnostics Sdn Bhd,

Many of these rapid test kits are specific to the types of insects tested (eg: insecticide susceptibility test for adult mosquitos, for specific chemical resistance or for specific strains or species).

Project Status

Samples are available, all research work is completed, and the project team is ready to discuss with interested parties in developing, producing and marketing the kit.

Financials

Based on World Health Organisation's list of items for supplies for monitoring insecticide resistance in disease vectors ⁽ⁱⁱⁱ⁾, the average selling price for adult mosquito test kit is USD 60 (RM180) for 100 tests. Assume a total number of 10,000 tests is conducted a year, where approx. 65 series of tests is conducted a year ^(iv). If the business targets five countries in ASEAN by year 3, may give potential revenue:

Year 1: RM 180 x 100 x 65 x 1 country = RM 1.17 Million **Year 2**: RM 180 x 100 x 65 x 3 countries = RM 3.51 Million **Year 3**: RM 180 x 100 x 65 x 5 countries = RM 5.85 Million

Funding Requirement

In addition to the initial production investment, other funding requirements will include the cost of regulatory compliance, marketing and distribution.

Source: (i) 2006-2007 Pesticide Market Estimates: Usage, US Environmental Protection Agency [online] (last accessed: 11 Nov 2012) at: http://www.epa.gov/ pesticides/pestsales/07pestsales/usage2007.htm (ii) World Pesticides, Freedonia Group Inc, Aug 1, 2010 at: http://www.marketresearch.com/Freedonia-Group-Incv1247/Pesticides-2785223/ (iii) Supplies for monitoring insecticide resistance in disease vectors, World Health Organization, WHO.USM/00.2a and WHO. USM/00.2b (last accessed: 12 Nov 2012) at: http://www.who.int/whopes/resistance/en/WHO_CDS_CPE_PVC_2001.2.pdf, Insecticide resistance kits, page 19 at http:// www.who.int/ medicines/areas/access/AntiMalariaSourcesPricesEnglish.pdf (iv) 2007 Insecticide Resistant Test Results, page 9, at: http://www.actmalaria.net/ files/vector control/i resistance/Malaysia.pdf



Innovation Business Opportunity



Safe and environmentally-friendly method to remove ink from recycled paper

Green Process Of Deinking Paper (1USM003)

Business Opportunity

According to Malaysia Paper Merchants Association in 2009, Malaysia consumed about 380,000 tons of printing and writing paper annually, of which about 230,000 tons were imported. Malaysian industry players estimated that local paper consumption is currently close to a million tons each year.⁽ⁱ⁾ Although it is a profitable industry, the mechanism of recycling paper engages a process of deinking of paper that uses a large amount of chemicals, which is environmentally unfriendly and expensive. This has created a market demand for alternative eco-friendly deinking processes.

Innovation/ Intellectual Property

The process of deinking of paper introduced by the research team uses bioenzymes.

Industry Overview

The paper and paperboard industry is globally dominated by North America, Europe and Asia which stood at around 380 million tons in 2008 with US leading with over 100 million tons. In 2009, China consumed around 62 million tons of recovered paper, 27.5 million tons (44%) of which was imported.⁽ⁱⁱ⁾ The Indian paper industry's market size is valued at Rupees 195 billion in 2003-2004 to Rupees 321 billion in 2008-2009. The Indian paper industry growth is forecast at 8.4% annually, touching 11.5 million tons in 2011 to 2012 and 15 million tons by 2015.⁽ⁱⁱⁱ⁾ Malaysia's recycled paper industry is estimated to be worth some RM1.3 billion with an output of about 1 billion ton annually in 2012.i

Competitive Advantages

Traditionally, alkaline deinking process is considered efficient with respect to ink detachment but this method uses large amount of chemicals which is not environmentally friendly. This novel invention uses bioenzymes, which are cheap and do not pollute the environment.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute the product within as a cost-efficient alternative and to (2) license the formulation globally to recycling paper providers.

Project Challenges

One of the key challenges for this project is to gain regional regulatory and standards approvals from relevant agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory and standards requirements.

Preferred Partner/ Collaboration

Pascorp Paper Industries, Genting Sanyen Industrial Paper and Muda Holdings Berhad, the top 3 players in Malaysia will be one of the best choices as they are all notable paper mills where issues regarding international regulatory can be solved easily with professionals readily working for them.

Innovation Business Opportunities

Wealth for

Project Overview

This novel invention uses bioenzymes and furthermore, the fermentation process developed is a continuous system.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally. This can be done by emphasizing its environmentally friendly nature.

Competitor Analysis

There are about six main paper mills in Malaysia including Pascorp Paper Industries, Genting Sanyen Industrial Paper and Muda Holdings Berhad. However, bioenzyme using deinking process is still new in Malaysia.

Project Status

The process of continuous enzymatic deinking of waste paper is available to demonstrate. The team involved would like to discuss with companies involved in the paper recycling and printing industries.

Financials

For building the financials for this business an existing Malaysian paper mill company is taken as a case study. Muda Holdings made revenue of RM1.1 billion in 2011. Since this business will be newly entering the market it is assumed that it will reach 5% of the existing company's revenue by year 3. The projected revenue for the business is at below with 8.4% growth rate estimation annually by the Year 3.

 Year 1:
 RM 1.1 Billion x 108.4% x 1% = RM 12 Million

 Year 2:
 RM 1.2 Billion x 108.4% x 3% = RM 39 Million

 Year 3:
 RM 1.3 Billion x 108.4% x 5% = RM 70.5 Million

Funding Requirement

The startup process can be optimized by collaborating with existing paper mill companies in Malaysia who are interested in using this technology to improve their existing processes.

Source: (i) **THE STAR ONLINE** [online] Last accessed 14th November 2012 at: http://thestar.com.my/news/story.asp?file=/2012/5/28/metrobiz/ 11356922&sec=metrobiz (ii) **WRAP, MATERIAL CHANGE FOR A BETTER ENVIRONMENT** [online] Last accessed 14th November 2012 at: http://www2.wrap .org.uk/downloads/China_MSR_2011.af75a00d.10601.pdf (iii) **INDIAN INDUSTRY TRACKER** [online] Last accessed 14th November 2012 at: http://industry tracker.wordpress.com/2011/04/19/paper-industry/

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Innovation Business Opportunity



Plant-based product that accelerates healing in patients with diabetes or had underwent surgery



{Innovation Business Opportunities } Wealth for Malaysia

Business Opportunity

Chronic wounds represent one of the most significant challenges to healthcare systems as they take a long time to heal, and can lead to complications such as amputation and even death. Malaysia's Wound Care market value is estimated to reach USD 87.1 million in 2017.⁽ⁱ⁾ New product with more benefits and multiple advantages such as HealexTM would be able to penetrate into the Wound Care market easily.

Innovation/ Intellectual Property

Healex comprises an extract of vegetative parts of lpomoea, Arecaceae plant family and/or seaweed through extractions.

Industry Overview

Wound care is one of the most lucrative and rapidly expanding medical device market segments for both manufacturers and providers. Globally, the size of the Advanced Wound Care market was approximately USD 5.1 billion in 2009 and is estimated to be worth USD 5.5 billion in 2011 with 5% to 7% growth rate per annum.⁽ⁱⁱ⁾ Asia-Pacific, the fastest growing regional market for Wound Management Products, is projected to reach USD 644.7 million by the year 2015.⁽ⁱⁱⁱ⁾ New analysis from Frost & Sullivan states the Wound Care market in Malaysia earned revenues of USD 55.1 million in 2010 and is estimated to reach USD 87.1 million in 2017.⁽ⁱ⁾

Competitive Advantages

HealexTM accelerates wound healing in compromised patients with diabetes, those that have undergone surgery or subsequent to an accident and has the ability to reduce the time required for healing by 30%. Its composition of plant leaf extract has shown benefits to kidney function, liver and heart. Despite having a wound healing effect the product also promotes hair growth. The product can be consumed orally and topically.

Proposed Business Model

Two business models are proposed – ⁽ⁱ⁾ to develop and distribute product. ⁽ⁱⁱ⁾ License the product to an interested manufacturer.

Project Challenges

One of the key challenges for this project is to gain regional regulatory and standards approvals from relevant agencies. However, this might be a time consuming process.

Preferred Partner/ Collaboration

Companies like B. Braun who already have a well-known market in Malaysia dealing with wound healing products would be a potential partner and also ideal collaborators as they can help resolve challenges on regulations and standard approvals with their professional experience.

Project Overview

A composition to be orally administered and/or topically applied for enhancing wound healing, tissue repair and cardiovascular health protection comprising an extract of vegetative parts of Ipomoea, Arecaceae plant family and/or seaweeds through extraction using alcoholic solvent with or without combination with a co-solvent, which may be aqueous or organic as an active ingredient.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally. This can be done by emphasizing the product's potential in significantly accelerating wound healing process.

Competitor Analysis

There are many wound care products available commercially and also numerous researches related to wound healing process that might be similar to the team's product. HealexTM with its significant advantage would be able to stand out.

Project Status

The research team would like to discuss with companies interested in collaborating with the team to commercialize this invention as it is ready to be commercialized.

Financials

Global Advance Wound Care market was approximately USD 5.1 billion with estimated 5% to 7% growth rate per year while Malaysia's market value for Wound Care industry is USD55.1 million (RMXXX). Thus, assuming HealexTM would be able to penetrate into the Malaysia Wound Care Industry 10% by 3 years with 6% growth rate each year.

Year 1 : RM 175 Million x 2% = RM 3.50 Million **Year 2** : RM 186 Million x 6% = RM 11.2 Million **Year 3** : RM 197 Million x 10% = RM 19.7 Million

Funding Requirement

The startup funding process for this project can be optimized by collaborating with existing medical device companies – their experience in operating in this domain and their existing network will support the commercialization process.

Source: (i) **FROST & SULLIVAN** [online] Last accessed 14th November 2012 at: http://www.frost.com/prod/servlet/press-release.pag?docid=241746780&g on11081=MDMI2 (ii) **GAP573 FOR REGENERATIVE WOUND CARE** [online] Last accessed 14th November 2012 at: http://gap573.com/unmet-market-need.html (iii) **PRWEB, ONLINE VISIBILITY FROM VOCUS** [online] Last accessed 14th November 2012 at: http://www.prweb.com/releases/wound_care_products/ wound_ management product/prweb4466274.htm



Innovation Business Opportunity





Full Precast Reinforced Concrete: C-Channel (4CREAM001)

Lighter and more environmentally-friendly pre-shaped concrete components for construction industry



Full Precast Reinforced Concrete: C-Channel (4CREAM001)

Business Opportunity

There is an opportunity to produce C-Channel using Industrialized Building Systems (IBS) to reduce construction wastage which are being dumped illegally is causing risk to human health. E.g. A study done in Johor district alone, 42% of 46 illegal dumping sites are found to be construction waste.⁽ⁱ⁾

Innovation/ Intellectual Property

Producing various C-Channel Applications using IBS, a construction process that utilizes techniques, products, components or building systems which involve prefabricated components and on-site installation.

Industry Overview

Global construction spending is expected to reach USD 4.6 Trillion (RM 14.5 Trillion) due to urbanization in developing countries especially South-East Asia.⁽ⁱⁱ⁾ As for Malaysia, all the public sector projects are mandated by the government to attain at least 70% of IBS content and 50% for private sectors. ⁽ⁱⁱⁱ⁾ Thus, the total market which includes both public and private sectors of IBS is estimated to reach RM 84.24 Billion by 2015.^(iv) As of 2010, there are 129 IBS manufacturer in Malaysia producing 305 different types of IBS products. ^(iv) Besides, there are around 65,000 contractors in Malaysia and 70% of them are small and medium sized.⁽ⁱⁱⁱ⁾ Among those 65,000 contractors, only 1.4%, which is 678 contractors are registered with Construction Industry Development Board (CIDB), a regulatory body for Malaysia's construction development.^(iv)

Competitive Advantages

C-Channel allows full precast product using reinforced concrete having steel within allowable limit. It is less concrete, less embodied energy and less greenhouse gas emission from 35.34% to 47.8% compared to conventional floor. Besides, C-Channel is able to reduce the weight from 35.34% to 56.5%. It also has better sound insulation property and there were no water leaking or dripping effect.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia, the emerging market as a cost-efficient alternative and (2) license this product to construction equipment manufacturers, constructions companies as well as contractors.

Project Challenges

One of the key challenges for C-Channel is to gain worldwide recognition from the construction industry as IBS is not an internationally recognized or mandated by International Standards. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory requirements in construction standards.

Preferred Partner/ Collaboration

There are 129 IBS manufacturers in Malaysia and CREAM can collaborate with any one of them as they are all SIRIM accredited IBS manufacturers. Thus, issues regarding international standards can be solved by their professionals, who are more familiar with the processes and requirements.

Innovation Business Opportunities

Wealth for

Project Overview

C-Channel, an IBS product was developed with the objective to introduce the product which offers modularity, adaptability, portability and cost effective.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across industries globally emphasizing its potential in reducing embodied energy and greenhouse gas emission.

Competitor Analysis

Apparently, there are limited to even no commercial competitor currently developing industrial-scale C-Channel IBS application for construction industry. However, C-Channel will be competing against other IBS products.

Project Status

The product is fully developed and is ready to be marketed. CREAM would like to discuss with potential companies to manufacture and commercialized this product to the market through licensing.

Financials

Total project value for construction in Malaysia is RM 142.8 Billion in 2011 and IBS usage in building construction is estimated at an average of 33.8% of total construction. ^(iv) Thus, the estimated value of project using IBS application is RM 48.27 Billion. Frame and Upper Floors are estimated to contribute 9% to the total IBS project cost.^(v) Of this partial cost, it is assumed that 5% is contributed by the C-Channel floor panel, valuing at RM 217 Million. C-Channel with IBS application is assumed to capture 3% of the market share in 3 years' time, growing at 3.7%^(iv).

 Year 1: RM 217 Million x 103.7% x 1% = RM
 2.25 Million

 Year 2: RM 217 Million x 103.7%2 x 3% = RM
 8.70 Million

 Year 3: RM 217 Million x 103.7%3 x 5% = RM
 12.10 Million

Funding Requirement

Further funding will be needed for the pre-commercialization stage, especially to cover the expenses for international standard accreditation processes which will help in the commercializing this product.

Source: (i) UTHM (2012), Construction Waste Management: Malaysian Perspective [online] Last accessed 16th November 2012 at: http://eprints.uthm.edu. my/2530/1/Construction_Waste_Management_Malaysian_Perspective.pdf (ii) GIA (2012), Construction Industry- A Global Outlook [online] Last accessed 16th Nov 2012 at: http://www.strategyr.com/pressGOS-019.asp (iii) RISM (2010), Industrialized Building System and Application on Malaysian Construction Business Environment [online] Last accessed 16th November 2012 at: http://www.rism.org.my/ISMDoc/SEASC2011/1-CD%20SEASC/PAPER/TS1G/TS1G_ PAPER_2.pdf (iv) CREAM (2011), Business Strategies of Contractors in Industrialized Building Systems (IBS) Construction [online] Last accessed 16th November 2012 at: www.cream.com.my/index.php/publication/...a..ibs.../download (iv) Concrete Center (2010), School Construction [online] Last accessed 16th November at: http://www.irishconcrete.ie/downloads/Schools Construction Cost Comparison.pdf



Innovation Business Opportunity







High-visibility safety vest for night riding



Smart Motorcycle Safety Vest (2UTeM004)

Business Opportunity

An opportunity to provide an novel smart motorcycle safety vest for motorcycle owners, where the global demand for motorcycles is forecast to grow 6% annually, representing USD 49 billion⁽ⁱ⁾ in manufacturers' sales in 2011.

Innovation/ Intellectual Property

The project is at patent search stage and patent application is in progress.

Industry Overview

In 2011, the domestic sales of motorcycle in Malaysia⁽ⁱⁱ⁾ stood at 407,567 units for all classes of motorcycles. Export for 2011 was recorded as 520,368 units (valued at USD 4.79 billion including vehicle and parts), compared with 493,143 units for 2010 (USD 4.47 billion), an increase of 27,225 units or 5.5%.

UN ESCAP⁽ⁱⁱⁱ⁾ estimates that based on 2010 data, total number motorcycles are 9,368,454 and 120,156 involved in accidents. About 4,036 deaths (include motorcyclist and pillion rider) recorded. Malaysian Institute of Road Safety Research reported^(iv) that a higher number in motorcycle accidents were recorded at rural area (66.6%) as compared to city (4.6%), urban (11.5%) and built-up area (17.3%) from 2005 – 2010, where there may not be sufficient lighting and visibility is poor.

Competitive Advantages

The product is a new type of Smart Motorcycle Safety Vest which significantly increases the visibility of motorcycle riders, especially at night: This product vest is visible at 3 times the distance of an ordinary white T-shirt rider travelling at 90km/h, giving him 20 seconds (versus 6 seconds) to act before encountering the motorcycle.

The product incorporate a series bright yellow and red LED's in patterns which when illuminated provide additional signaling information for other road users. The product only requires a simple adaptation to the motorcycle to enable the signaling information to be wirelessly transmitted to the jacket.

Proposed Business Model

The proposed business is to design, develop and produce various versions of this product to appeal to consumer preferences – colours, shape, materials, aesthetic design, etc for sale to channel resellers and original equipment manufacturers (OEM).

Project Challenges

The biggest challenge is to promote this among the ordinary motorcycle owners, and to position its durability and effectiveness for night riders, rather than the mass users.

Preferred Partner/ Collaboration

Potential collaborators are motorcycle accessories producers, safety vest manufacturers and ICT and telecommunications service providers – providers of wi-fi, 3G, 4G and Broadband services.

Innovation Business Opportunities Wealth for

Project Overview

A safety vest with wireless system built in that communicate with a motorcycle rider where the safety vest is equipped with 3rd safety brake LED light, left and right signal and LED tailgate that is deemed to be more visible to road users.

Business Idea

To design, develop, produce and market a novel smart motorcycle safety vest that incorporates wireless system connected to the safety brakes, motorcycle signal lights that is visible to oncoming traffic users at a further distance than normal illuminated safety vests for night driving.

Competitor Analysis

The market is currently dominated by Made-in-China^(v) producers who sells motorcycle safety vest as a commodity product rather than its safety features. Most, if not all, features the reflective vests made with nylon (waterproof) or polyester materials.

A second category of motorcycle safety vests are those for protective purposes, containing shoulder pads, chests pads and functions like body armour.

Project Status

The project team have developed several prototype jackets and exhibited the product in Malaysia and in Europe.

Financials

Based on a typical reflective motorcycle safety vest costing RM 25-RM30, and a competitor brand with high visibility LED vest costing RM77, assumed price at RM65. Targeting 1% of the domestic and export market for 50cc & above motorcycles⁽ⁱⁱ⁾, with CAGR 5.5%, give potential revenue:

Year 1	: $((150,253 + 498,972) \times 1\%)) \times RM 65 = RM 421,996$
Year 2	: $((158,517 + 526,415) \times 1\%)) \times RM 65 = RM 445,206$
Year 3	$((167,235 + 555,368) \times 1\%)) \times RM 65 = RM 469,692$

Funding Requirement

In addition to the initial capital investment for the manufacturing, funding will be required for product and customization for consumer preferences, branding, marketing and promotion to the night motorcycle riders.

Source: (i) Global Motorcycle Demand to Exceed 59 Million Units in 2011, Freedonia Group, Inc, Feb 07, 2008 (online) [Last accessed: 14 Nov 2012 at: http:// www.marketwire.com/press-release/global-motorcycle-demand-to-exceed-59-million-units-in-2011-818672.htm (ii) Fiscal Year 2011 Automobile & Motorcycle Statistics and Summary, Malaysia Automotive Institute website at: http://www.mai.org.my/ver1/index.php?option=com_content&view= article&id=2074:march-2012-and-fiscal-year-2011-automobile-a-motorcycle-statistics-and-summary&catid=34:asian&Itemid=163 (iii) Status Paper On Road Safety In Malaysia (2010), UN Economic and Social Commission for Asia and the Pacific at: http://www.unescap.org/ttdw/common/Meetings/TIS/EGM-Roadsafety-2011/Status/Countries/ Malaysia-2010-Status.pdf (iv) Malaysian Institute of Road Safety Research, Adsa Fact Sheet Vol. 2 Dec 2011 at: http:// www.miros.gov.my/c/document_library/ get_file?uuid=e9c68b11-7e7b-4688-af02-325a020d1202&groupId=26426 (v) Alibaba trading portal, at: http:// www.alibaba.com/showroom/motorcycle-safety-vest. html; Global Sources at: www.globalsources.com/manufacturers/Motorcycle-Safety-Vest.html



Innovation Business Opportunity





High quality taste and fresh spice mix for convenient cooking



All Natural Spice Mix Recipes (4SME002)

Business Opportunity

Malaysia is one of the major producers of spice, being the world's 6th largest exporter of pepper and pepper related products including specialty peppers, processed pepper and pepper sauces. Besides pepper, other spices such as coriander, turmeric, lemongrass, cinnamon, clove and fennel are also being produced in Malaysia.⁽ⁱ⁾

Innovation/ Intellectual Property

The recipe was formulated by an individual inventor who is inspired by the famous kitchens of Moghul Emperors. This research took four and a half year to put into perfecting the taste, flavor and fragrance. This invention is a trade secret.

Industry Overview

World spices and seasonings market is expected to reach 5.3 Billion lbs. (pounds) by 2017. This market is driven primarily from demand for convenience foods, introduction to new spices and flavours and growing awareness on health benefits. Besides, growing fascination for ethic cuisine has driven the sales of food accompaniments including spices and seasonings. U.S currently is the largest importer and consumer of spices and seasonings worldwide, capturing a significant chunk of the global demand. This is due to growing popularity of cuisine from Thailand, India, Mexico and Korea. Asia pacific experienced the highest CAGR of 5.6% driven by markets of India, China, Vietnam, Indonesia and etc. India is the world's largest producer and exporter of spices with an exportation of over 180 kinds of spices in the international market. On the other hand, China is an emerging competitor to India in international market.

Competitive Advantages

This readily natural preservative spice mix recipe only uses fresh ingredients that will minimize turnaround time for cooking without sacrificing the taste and flavor of the dish. This is due to traditionally, spice mixes are blended spices or herbs which are more convenient to blend beforehand. However, it is time consuming. Further, instant spice mix does not taste as good compared to readily mix natural preservative mix recipe.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this recipe within South-East Asia as a cost-efficient alternative and to (2) license this recipe globally to food industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant food & drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's food & drug regulatory requirements.

Preferred Partner/ Collaboration

Ready-made spices and recipes companies such as Maggi, Alagappa, Baba and etc will be the best choice to start on commercializing this recipe as they are all established food industry companies where issues regarding production or regulatory can be solved easily.

Innovation Business Opportunities

Wealth for

Project Overview

All natural preservative free spice mix recipes that reduces time for cooking without affecting the taste, flavor, and fragrance of the dish.

Business Idea

To design, develop, produce, distribute and license this recipe in a form that can be mass marketed across food industry globally. This can be done by emphasizing the recipe's potential in minimize turnaround time for cooking without sacrificing the taste and flavor of the dish.

Competitor Analysis

Malaysia's spice mix recipes market is congested with different kinds of convenient ready-to-use recipes. However, natural products which are preservative free are in demand due to increasing health awareness among consumers.

Project Status

22 spice mix recipes have been developed and are ready to be marketed. The inventor is keen to discuss with interested industrial partner that can manufacture, sell and distribute the spice mix through licensing.

Financials

The financials will be built based on industrial market, the largest user of spices and herbs for food processing:

A local company produces 100,000 packets of curry paste per month and the cost for the curry paste is priced between RM 3 and RM 4.⁽ⁱⁱⁱ⁾ Thus, the potential revenue for the curry paste will be valued at RM 4.8 Million per year. As this new preservative free spice mix recipes are inspired by famous kitchens of Moghul Emperors, it is assumed that the new product will be able to achieve 30% of the local company's revenue in 3 years' time, growing at CAGR of 5.6%.

Year 1: RM 4.8 Million x 105.6% x 10% = RM 0.5 Million **Year 2**: RM 4.8 Million x 105.6%2 x 20% = RM 1.1 Million **Year 3**: RM 4.8 Million x 105.6%3 x 30% = RM 1.7 Million

Funding Requirement

The key funding component is for setting up the manufacturing and distribution facilities for the spice mixes. This can be optimized by collaborating with existing food processing companies.

Source: (i) **MIDA (2012), Industries in Malaysia- Food Industry** [online] Last accessed 18th November 2012 at: http://www.mida.gov.my/env3/index. php?page=food-industries (ii) **GIA (2012), Spices and Seasonings- A Global Strategic Business Report** [online] Last accessed 18th November 2012 at: http:// www.strategyr.com/pressMCP-1088.asp (iii) **The Edge (2012), Promoting Penang to the world through curry** [online] Last accessed 18th November 2012 at: http://www.theedgemalaysia.com/in-the-financial-daily/181944-promoting-penang-to-the-world-through-curry.html



Innovation Business Opportunity





An Effective Process For The Production Of L-Homophenylalanine (1USM005)

Low cost and environmentally-friendly method of producing chemical compound used in cardiovascular drugs





Wealth for Malaysia

Business Opportunity

An opportunity to produce L-Homophenylalanine chemical compound in a low-cost and efficient manner using a more superior biocatalytic method with a combination of enzyme and membrane technology.

Innovation/ Intellectual Property

Patent (MY-145258-A) filed on 06 July 2009 and granted in Malaysia on 11 Jan 2012 for "A system for producing l-homophenylalanine and a process for producing l-homophenylalanine"

Industry Overview

L-homophenylalanine is a chemical compound (CAS No: 943-73-7) that is used as a precursor in the production of ACEinhibitors - an important element used in the preparation of cardiovascular drugs such as enalapril, delapril, lisinopril, quinapril and others

Cardiovascular diseases (CVD) are ranked as the number one killer disease in the world claiming an estimated 17 million lives annually⁽ⁱ⁾. Over 80% of CVD deaths take place in lowand middle-income countries. By 2030, almost 23.6 million people will die from CVDs. In Malaysia, cardiovascular disease remains the number one killer claiming an estimated 40,000 every year⁽ⁱⁱ⁾, where the total number of deaths in government hospitals in 2008 was 45,936 of which 7,597 or 16.5% were caused by heart disease.

Competitive Advantages

The invention comprises a device and process for production of L-homophenylalanine in a reaction solution which occurs in a novel integrated membrane bioreactor for simultaneous reaction, and retention of biocatalysts.

Ultimately this integrated membrane biorector system leads to improved performance for L-homophenylalanine production by increasing the efficiency of enzyme-catalyzed bioconversions, high degree of operating flexibility, efficient, reduces costs and supports green technology.

Proposed Business Model

The proposed business is to develop and produce L-homophenylalanine chemical compounds using the base technology (integrated membrane bioreactor) for the production of ACE inhibitors and cardiovascular drugs.

Project Challenges

As this product is targeted as an ingredient for another industrial product (ACE inhibitors and cardiovascular drugs), the greatest challenge is acceptance by the drug industry, full compliance with regulatory controls and economy of scale to justify for mass production and low-cost production.

Preferred Partner/ Collaboration

Potential collaborators include pharmaceutical companies, biotechnology companies and medical research institutes that have interests in advancing drugs for the treatment of cardiovascular diseases.

Project Overview

A low cost, high-yielding and green process technology for the production of L-homophenylalanine, a precursor used in the production of therapeutic drugs for heart disease

Business Idea

To develop, produce and market this product as a chemical compound that can be used to further develop cardiovascular drugs and ACE-inhibitors.

Competitor Analysis

Competitors ⁽ⁱⁱⁱ⁾ for the production of L-homophenylalanine are mainly from China, USA and Japan. Eg: From China -Wisdom Pharmaceutical, AF Biochem, ALADDIN Reagent, Anhui Horae New Technology, Changmao Biochemical, Porton Corporation, Shanghai Qiude Biochemical, Stone Lake Pharma, Wanda Group, etc; from USA - Advanced Asymmetrics, CNH Technologies, Inc, Ivy Fine Chemicals, Wilshire Technologies, and from Japan - Watanabe Chemical.

Project Status

All research and development has been completed and a prototype is available as proof-of-concept. A pilot plant trial has been completed using the prototype bioreactor system. Next steps include clinical trials and field testing the L-homophenylalanine produced.

Financials

Based on published online competitive prices from a USA and China company^(iv), the average selling price of L-homophenylalanine are USD 285 for 100gm (RM 8,550 per kg) and USD 999 (RM 3,000) per kg respectively, assume this product is priced at RM 3,500 per kg. Targeting a minimum volume of 50kg per month (or, 600kg per annum), growing at 5% yearly, will give potential revenue as follows:

Year 1: RM 3,500 x 600 kg = RM 2.1 Million Year 2: RM 3,500 x 630 kg = RM 2.2 Million Year 3: RM 3,500 x 662 kg = RM 2.3 Million

Funding Requirement

Assuming the clinical trial is successful, the development and production cost are the major costs to be considered. The cost of the clinical test, FDA approval and regulatory compliance for this new chemical compound by itself will require significant long-term investment.

Source: (i) Global atlas on cardiovascular disease prevention and control, World Health Organization official website [Last accessed: 19 Nov 2012) at: http:// www.who.int/cardiovascular_diseases/en/ (ii) More young people getting heart attacks, 26 Oct2009, National Heart Association of Malaysia at: http://www. malaysianheart.org/article.php?aid=430 (iii) Online Database of Chemicals from Around the World at: http://www.chemblink.com/product Suppliers/943-73-7_ suppliers.htm (iv) Alibaba trading portal at: http://www.alibaba.com/trade/search?SearchText=+%09943-73-7&IndexArea=product_en&fsb=y; CNH Technologies Inc, USA at: http://www.chhechnologies.com/displayprod.php



Innovation Business Opportunity







Cost-effective and efficient method to extract biogas from Palm Oil Mill Effluent (POME)



Biogas Processing (1SIRIM003)



Wealth for Malaysia

Business Opportunity

It is estimated that in the year 2008 alone a total of 44 million tonnes of Palm Oil Mill Effluent (POME) was produced in Malaysia alone⁽ⁱ⁾. The most common methods of treating POME do not result in the utilization of the byproducts result of POME treatments. The system being developed would result in the utilization of biogas produced from the treatment of POME in a more efficient manner.

Innovation/ Intellectual Property

POME is a waste product from processing oil palm and must be treated before disposal to protect the environment. The biogas processing system will be able to process the POME to produce biogas. The intellectual property associated with this work is on track be protected as the process is scaled up and refined.

Industry Overview

Palm oil constitutes about 30% of total edible oils worldwide ⁽ⁱⁱ⁾. Malaysia and Indonesia constitutes the 2 largest oil palm producers in the world. Malaysia currently accounts for 39 % of world palm oil production and 44% of world exports ⁽ⁱⁱⁱ⁾. Being one of the biggest producers and exporters of palm oil and palm oil products, Malaysia has an important role to play in fulfilling the growing global need for oils and fats sustainably

Competitive Advantages

The biogas production system is imperative because it helps to create an alternative revenue stream from what would normally be a waste product. It also generates biogas at rates up to 3 times that of more conventional systems consumes a far less land area, requires a less intensive capital expenditure and the end product quality is more controllable.

Proposed Business Model

Two business models are proposed which is in-house production where the system is produced, manufactured and sold and a licensing option with the technology being licensed to oil palm mills to produce biogas.

Project Challenges

The biogas production system is a more complex system than conventional methods therefore proper training and handling protocols must be established. The end product which is mainly methane has a variety of uses with no specificity. A market use must be established clearly to ensure the methane produced is sold and there is no wastages.

Preferred Partner/ Collaboration

SIRIM is working with Sime Darby Research Sdn Bhd to develop this technology. Other preferred partners would be those operating in the oil palm industry such as Felda Holdings Bhd, IOI Corp, KL Kepong and IJM Plantations.

Project Overview

A method to create an enhanced approach for anaerobic digestion – reversible flow anaerobic baffled reactor (RABR) with a more compact form factor that consumes less time.

Business Idea

To design, develop, produce and distribute the biogas processing system to oil palm mills firstly in Malaysia and then proceed to other oil palm intensive countries.

Competitor Analysis

Keck Seng flow stirred tank reactor (CSTR) and Majurutera stirred tank reactor (CSTR) are similar technologies being utilized to produce biogas. QL Zero-waste Renewable Energy Oil Mill has the ability to process 50 million tonnes per hour producing 2 megawatt of power each hour ^(iv).

Project Status

The project is in its pilot stage at a commercial plant with system refinements taking place to obtain the best results. The project is partially operational.

Financials

From the FFB that is processed 65% are effluents produced which biogas can be produced at a rate of 28 cubic meters for each cubic meters of POME. An assumption of 20000 kilojoules of energy is produced for each cubic meter of methane and with a thermal efficiency of 30% and a utilization factor of 80% for 300 days is also used with the price for each kilowatt being at RM 0.21

Year 1:5,184,000 kWh/yr x RM 0.21/kWh =RM 1.09 million Year 2:10,368,000 kWh/yr x RM 0.21/kWh =RM 2.18 million Year 3:15,552,000 kWh/yr x RM 0.21/kWh= RM 3.27 million

Funding Requirement

The key funding component is for setting up a mass production facility based on the newly developed biogas processing system.

Source:(i)Pollution control technologies for the treatment of palm oil mill effluent (POME) through end-of-pipe processes, PubMed.gov, [online] last accessed 16th November 2012: http://www.ncbi.nlm.nih.gov/pubmed/20231054(ii) The global palm oil phenomenon, The Star Online [online] last accessed 16th November 2012: http://biz.thestar.com.my/news/story.asp?file=/2012/5/14/business/11275224&sec=business(iii) ONE OF THE WORLO'S LARGEST PALM OIL EXPORTER, Malaysian Palm Oil Industry, Malaysia Palm Oil Council (MPOC) [online] last accessed 16th November 2012: http://www.mpoc.org.my/ Malaysian_Palm_Oil_Industry.aspx (iv) Palm Oil Mill Effluent Biogas plant, QL Resources Sdn.Bhd [online] last accessed 16th November 2012: http://ql.com.my/environment/



Innovation Business Opportunity



Durable and high sulfuric acid-resistance concrete with low carbon dioxide emission during production



Environmentally Friendly Concrete (3UNIMAP004)

Business Opportunity

The global construction and engineering industry is expected to be worth over \$3,000 billion in 2015, increasing over 30% in a five-year period.⁽ⁱ⁾ Globally, the cement industry contributes around 6% of all man-made CO2 emissions and is consequently responsible for around 4% of man-made global warming. Carbon dioxide emission trading is likely to be of huge importance to the industry in the future.⁽ⁱⁱ⁾ Hence, it is desirable to find supplementary cementing materials to replace the current cement used for producing concrete and this gives the "Environmentally Friendly Concrete" also known as Geocrete an opportunity to replace the cement industry which appears to be one of the largest industrial market in the world.

Innovation/ Intellectual Property

Geocrete comprises of few mixture which one of it is a dried powder which is a made out of alkali hydroxide, sodium silicate, clay and a pozzolan material.

Industry Overview

It is expected that in a five year period, the global construction and engineering industry would increase up to 30% being worth over USD 3,000 billion in 2015.⁽ⁱ⁾ The Asia-Pacific construction industry market had grown at a CAGR of 17.0% to reach a market size of USD 83.9 billion in 2011 from USD 38.2 billion in 2006.⁽ⁱⁱⁱ⁾ In Malaysia, the construction industry grew from RM 54.3 billion in 2005 to RM 87.5 billion in 2011 based on total project value, recording a CAGR of 8.3%.^(iv)

Competitive Advantages

This invention introduces a method of producing an environmentally friendly concrete that emits low amount of carbon dioxide compared to other conventional concretes. In addition, the invention also has strong mechanical properties, durable, non-flammable and has great resistance to sulfuric acid attack.

Proposed Business Model

Two business models are proposed: (a) develop and produce the Geocrete, and (b) license the method to cement companies, ready-mixed concrete and manufacturer companies.

Project Challenges

This project involves many procedures before it hits the market and one of it will be the regulatory process that probably will be time consuming.

Preferred Partner/ Collaboration

Lafarge Malaysia, Green Packet Bhd and CSL Technologies (M) Sdn Bhd are one of the main companies that are very active in the environmentally friendly construction materials and they would also be able to provide solutions and speed up the regulatory processes.

Innovation Business Opportunities

Wealth for

Project Overview

The present invention relates to a method of producing a concrete comprising the steps of preparing a dried powder and reacting the dried powder with water in the presence of aggregate or plasticizer.

Business Idea

To develop and/or license and distribute a novel method of producing an alternative to existing cement with low emission of carbon dioxide.

Competitor Analysis

Currently, one of the main key players who is experimenting and investing on green materials for construction is Large Malaysia and YTL Corporation.

Project Status

Environmentally Friendly Geocrete is now ready for joint development and testing with a commercial partner, and is available to license to interested organizations.

Financials

According to Bursa Malaysia Announcement, the construction industry grew from RM 54.3 Billion in 2005 to RM 87.5 Billion in 2011 with a CAGR of 8.3%. Besides, Borneo Post Online stated that, 25% to 30% of the total Malaysian building construction market has been accounted for green elements by the year 2020. Assuming that green building market would penetrate into approximately 9% in 3 years of the total construction industry market and that Geocrete would share 30% of the green building market by Year 3 with a CAGR of 8.3%.

 Year 1:
 RM 3.53 Billion x 1% = RM 35.3 Million

 Year 2:
 RM 3.82 Billion x 3% = RM 114 Million

 Year 3:
 RM 4.14 Billion x 5% = RM 207 Million

Funding Requirement

Further funding will be needed to cover the expenses for regulatory processes before fully commercializing the project. During the commercialization stage the key cost will be for setting up the manufacturing facility.

Source: (i)Report Linker [online] Last accessed 19th November 2012 at: http://www.reportlinker.com/ci02286/Construction-and-Building.html (ii)Environmental Overview [online] Last accessed 19th November 2012 at: http://www.ecocem.fr/bibliotheque/bibliographie/ecologie/33_le_changement_climatique_et_l_industrie_ du_ciment_royaume_uni_en.pdf (iii)Market Research.com [online] Last Accessed 19th November 2012 at: http://www.marketresearch.com/AM-Mindpower-Solutions-v3771/Asia-Pacific-Construction-Machinery-Outlook-7158279/ (iv) Executive Summary Of The Independent Market Research Report [online] Last accessed 19th November 2012 at: http://announcements.bursamalaysia.com/EDMS/subweb.nsf/ 7f04516f8098680348256c6f0017a6bf/89a7b2be71e1687a48257a4e0 001c6af/\$FILE/PASUKGB-Page%20131%20to%20Page%20300%20(2.2MB).pdf



Innovation Business Opportunity





Anti-Cancer Bioactive Compound From An Asian Plant (1UM006)

Herb-based mixture with cancer inhibiting properties



Anti-Cancer Bioactive Compound From An Asian Plant (1UM006)



Wealth for Malaysia

Business Opportunity

Asian women, smoker or non-smoker, are more prone to develop lung cancer due to their genetic variations.⁽ⁱ⁾ Among 14,000 Asian women, 47% of them, which is 6,600 had lung cancer and there is still high unmet needs for lung cancer treatment despite extensive R&D and chemotherapy used.

Innovation/ Intellectual Property

The invention focuses on molecular-targeted therapy where the natural anti-cancer herb will target known cancerrelated genes. The mechanism of action is thought to be the interference of bioactive compounds from Eurycoma Longifolia (EL) in controlling cell proliferation, cell cycle progression and programmed cell death.

Industry Overview

Lung cancer is the worldwide leading cause of cancer deaths for men and the second leading cause for women which accounts for 1.6 Million new cancer cases annually.(ii) Approximately, 1.38 Million of people died from lung cancer and more and more non-smokers are included in this statistic. ⁽ⁱⁱ⁾ Lung cancer is expected to account around 12.5% of all new cancer cases in 2010, with the 2nd highest incidence rate. Moreover, Research and Markets estimated that there have been 488,400 new lung cancer cases occurred in 2010 and the number is expected to increase to 536,400 by 2012, growing at a CAGR of 2.9%. The rate of incidence per 100,000 is projected to increase from 66.4 in 2010 to 71.4 in 2015.(iii) In Malaysia, more than 80% of women with lung cancer are never smokers⁽ⁱⁱ⁾ and it is strongly suspected that genetics and environment factors such as secondhand smokers or exhaust from indoor cooking play a big role. Currently, the prevalence of lung cancer in Malaysia is around 18 per 100,000 of the population.⁽ⁱⁱ⁾ With 3,000 new patient diagnosed each year, the possibility of lung cancer is expected to rise.(ii)

Competitive Advantages

EL has the effects in irreversibly inhibiting cancer cell growth, reducing the multiplication of cancer cells and switching off genes that promote cancer cell growth.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this compound within South-East Asia as a cost-efficient alternative and to (2) license this compound globally to pharmaceutical industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant drug agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's drug regulatory requirements. **Preferred Partner/ Collaboration** Established pharmaceutical manufacturers will be the best choice as they have all the manufacturing equipment as well as know-how in manufacturing. In addition, issues regarding drug regulations can be solved easily.

Project Overview

A bioactive compounds originating from the native plant known in Malaysia as Tongkat Ali for cancers treatment.

Business Idea

To design, develop, produce, distribute and license this compound in a form that can be mass marketed across pharmaceutical industries globally. This can be done by emphasizing its safe treatment with high efficacy.

Competitor Analysis

This natural compound will be competing with majority of drug as well as radiotherapy used to treat lung cancer which is intensive. However, it is associated with undesirable and toxic effects on healthy cells of the body.

Project Status

Proof-of-concept work has been performed using human lung cancer cells and promising results have been obtained for further research and clinical validation. The research team is interested to discuss with potential companies for further clinical development as well as commercializing this product through licensing.

Financials

According to Department of Statistic Malaysia, in 2011, Malaysia has an estimated of 29 Million population. With the current prevalence of 18 per 100,000, the number of lung cancer patient is estimated at 5220. As the global CAGR for lung cancer is 2.9%, assuming 2.9% of 3000 diagnosed patient will become lung patient cancer annually. The price of drug for lung cancer is assumed at RM 552 for 30 tablets and a lung cancer patient is averagely assumed to take 3 tablets per day. Thus, the cost of drug per patient will be RM 1656. The projected financials is as below, assuming this bioactive compound is able to capture 30% of the market in 3 years' time due to its safe treatment and high efficacy.

Year 1: RM 1656 x 5220 x 10% = RM 0.86 Million Year 2: RM 1656 x 5307 x 20% = RM 1.76 Million Year 3: RM 1656 x 5397 x 30% = RM 2.68 Million

Funding Requirement

The key funding component is for pre-commercialization stage, especially for clinical trial processes which must be completed for commercialization.

Source: (i) philSTAR (2012), What Makes Asian Women More Prone to Lung Cancer [online] Last accessed 20th November 2012 at: http://www.philstar.com/ health-and-family/2012/11/14/866659/what-makes-asian-women-more-prone-lung-cancer (ii) The Star Online (2012), A Target to Aim For [online] Last accessed 20th November 2012 at: http://thestar.com.my/health/story.asp?file=/2012/9/16/health/12029493&sec=health (iii) Research and Markets (2010), Lung Cancer: Global Incidence, Prevalence and Mortality to 2015 [online] Last accessed 20th November 2012 at: http://www.researchandmarkets.com/reports/1267134/lung_ cancer global incidence prevalence and (iv)



Innovation Business Opportunity





Tcrapidtm Toxocariasis Diagnostic Test (1USM010)

Rapid and easy-to-use test kit to detect Toxocara, a parasite found in intestines of dogs and cats which causes illness in humans when infected





Wealth for Malaysia

Business Opportunity

Humans are accidental hosts of Toxocara, yet toxocariasis is seen throughout the world. Most cases of toxocariasis are seen in people under the age of twenty.⁽ⁱ⁾ However, Won et al. discovered that U.S. seroprevalence is actually 14% for the population at large.⁽ⁱⁱ⁾ In many countries, toxocariasis is considered very rare. Approximately 10,000 clinical cases are seen a year in the U.S., with 10% being Ocular larva migrans(OLM).⁽ⁱⁱ⁾ In extreme cases infection can lead to death, therefore, a method for diagnosis and detection of toxocariasis is crucial for its prevention and treatment. TcRapidTM has a wide opportunity in the medical device market.

Innovation/ Intellectual Property

A vector comprising a polynucleotide sequence encoding a polypeptide having an amino acid sequence of SEQ ID NO: 2 for detecting antibody against Toxocara spp. in a biological sample.

Industry Overview

The global PCR market is projected to reach around US\$38.2 billion by 2015, with a CAGR of 12.5% for the analysis period, 2009-2015. Europe and Asia-Pacific together account for approximately 55% of the global market share. Interestingly, Latin America is seen as the fastest growing market with a CAGR of 15.7%, to worth around US\$0.9 billion in 2015. Irrespective of the economic turmoil, Japan is expected to hold the second rank among the countries holding top-PCR market share, figured to claim nearly 15% of the global market in 2012 with a market value of US\$3.3 billion.

Competitive Advantages

Currently there are many diagnosing method used to diagnose human toxocariasis. TcRapidTM is a new diagnostic test that carries many advantages when compared to the existing diagnostic test. Several of its many advantages are it can be performed in 10 to 15 minutes, the test has higher specificity result, the test can be performed by relatively unskilled labour, the test is compact and requires no low temperature storage that makes it ideal for less developed areas usage.

Proposed Business Model

Two business models are proposed: (1) to commercialize the product to the Malaysian market (2) to design and develop the product with more advantages.

Project Challenges

The main challenge of this project is the process of penetrating into the already existing Malaysian market by emphasizing on the key advantages.

Preferred Partner/ Collaboration

Roche Diagnostics (M) Sdn. Bhd and any other medical device suppliers would be an ideal collaboration partner as it will be a stepping stone to penetrate through the Malaysian market.

Project Overview

Present invention provides a vector having polynucleotide from TES gene and the polypeptide of recombinant TES antigen which is derived from Toxocara larvae cultured in vitro. It also provides a method for detecting toxocariasis using the recombinant TES antigen.

Business Idea

To design, develop, produce and distribute the product into the Malaysian market and gradually taking it globally.

Competitor Analysis

Polymerase chain reaction (PCR) and serological method is one of the traditionally used methods for diagnosing human toxociarisis but TcRapidTM fast, reasonable in price and specific compared to the current methods used.

Project Status

This project is ready to be commercialized and it can also be further developed to satisfy more requirements in human toxocariasis diagnosing process.

Financials

For building the financials for TcRapidTM, an existing product for the same diagnostic function is taken as a case study. It is assumed that the cost of TcRapidTM will be similar to the existing product which is RM 1,603. Since Toxocariasis is mostly seen in people under the age of 20, the potential market size for TcRapidTM is determined by multiplying the product costing with the amount of population under the age of 20 in Malaysia. Assuming that TcRapidTM would capture only 30% of the whole market in 3 years due the government subsidization for hospital uses, the market size for TcRapidTM is projected at below:

 Year 1:
 RM 17 Million x 10% = RM 1.7 Million

 Year 2:
 RM 17 Million x 20% = RM 3.4 Million

 Year 3:
 RM 17 Million x 30% = RM 5.1 Million

Funding Requirement

The startup funding process for this project can be optimized by collaborating with existing medical device companies – their experience in operating in this domain and their existing network will support the commercialization process.

Source: (i) Centers For Disease Control And Prevention [online] Last accessed 15th November 2012 at: http://www.ccd.gov/ncidod/dpd/parasites/toxocara/ Toxocara_announcement.pdf (ii) Huh, Sun and Sooung Lee. eMedicine from WebMD. "Toxocariasis." [online] 15th November 2012 at: http://emedicine. medscape.com/article/229855-overview (iii) Polymerase Chain Reaction (Pcr) – An Analytical Report, 2009-2015 [online] Last accessed 20th November 2012 at: http://www.marketreports.com/toc/axis_research_mind/pcr.pdf



Innovation Business Opportunity





Fast Track Wall System For Low Cost Housing (1UTM004)

Time- and cost-saving method to build affordable yet high-quality homes



Fast Track Wall System For Low Cost Housing (1UTM004)

Business Opportunity

An opportunity to contribute towards nation-building by offering a time and cost saving method to build affordable housing in the developing world.

Innovation/ Intellectual Property

Patent (No. PI 20090172) filed in Malaysia on 15 Jan 2009 for "A formwork system of forming concrete wall for a building forming a foundation which includes a beam and ground slab, thereafter forming concrete wall by setting up formworks on top of the foundation"

Industry Overview

In Malaysia, since 1982, the government had imposed a 30% low-cost housing quota upon private sector developers as a social obligation to complement government efforts to provide affordable housing⁽ⁱ⁾. According to the 1Malaysia People's Housing Scheme (PR1MA), a total budget of RM 500 million has been allocated to build 80,000 units in collaboration with private housing developers in major locations nationwide⁽ⁱⁱ⁾.

At the Fifth Asia Pacific Urban Forum 2011⁽ⁱⁱⁱ⁾, ESCAP estimated that 34.7% urban population (or, 72.52 million) of South East Asia countries excluding Brunei, Singapore, Malaysia and Timor-Leste, are living in slums.

World Bank^(iv) estimates that in South Asia (continent of India), there is a shortage of more than 38 million housing units in the region. Taking into account average household size, this translates to 212.5 million homeless people or 14% of a total population of 1.5 billion.

Competitive Advantages

Houses built using this method are of high quality finish to external and internal surfaces, has superior strength to withstand earthquakes compared with block/brick work, reduces materials wastage and utilizes low skill level labour.

Proposed Business Model

The business model proposed is for the project team to be engaged as technical consultants and advisors, and to license the method and process to housing developers, in exchange for a percentage fee of the total value of housing project.

Project Challenges

The major challenges are twofold: (a) The ability to replicate this process quickly across many developing countries, considering the unfavourable economic factors in building low-cost housing, and (b) to protect this method and process from being copied without the consent of the project team.

Preferred Partner/ Collaboration

Low-cost housing construction companies, property and housing developers.

Project Overview

A construction process and methodology to significantly reduce the cost of manufacturing of concrete housing that also improves the strength and comfort of the dwelling.

Innovation Business Opportunities

Wealth for

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Business Idea

To develop and produce a design and construction process for low-cost concrete houses that creates a monolithic design. ie. the four house walls are constructed from a single concrete casting. This overcomes known problems with concrete houses of water ingress where concrete slabs are joined. It also creates a stronger building and is resilient to strong earthquakes.

Competitor Analysis

There currently exist several other techniques and technology for low-cost housing developed by various reputable organisations. Eg: The Council for Scientific and Industrial Research (CSIR), the RoadPacker Clay Brick Stabiliser method by RoadPacker Group Ltd, Canada and the Mojadi housing technology.

Almost all these companies claim to be rapid, low-cost, brickless and targeted to the developing countries in the African, Indian continent and the South East Asia countries.

Project Status

Since 2007, ten buildings have been constructed with a partner consultant-contractor for two or three bedroom houses. The partner is in the process of bidding to build 100 of these houses on a single site.

Financials

Using Malaysia's definition, a low cost housing comprising a 2-3 bedroom house, sells for RM 35,000 or less^(*). Assuming the project team charges a 1% technical advisory fee of the value of the house, targeting 1% of Malaysia's PR1MA in its first years, with growth of about 20% yearly, will give potential revenue as follows:

Year 1:	800 units x RM 350	=	RM 280,000
Year 2:	960 units x RM 350	=	RM 336,000
Year 3:	1.152 units x RM 350	=	RM 403.200

Funding Requirement

The key funding component for the startup process will be the manpower costs for maintaining a core technical team.

Source: (i) Real Estate and Housing Developers' Association Malaysia, official website (online) [Last Accessed: 21 Nov 2012] at: http://www.rehda.com/ industry/lchp/index.html (ii) Affordable Housing Boon, New Straits Times, 05 Oct 2012 at: http://www.nst.com.my/nation/general/affordable-housingboon-1.152803 (iii) Urban Challenges in Southeast Asia, Paper presented at the 5th Asia-Pacific Urban Forum organized by the UN Economic and Social Commission for Asia and the Pacific (UN ESCAP), 22-24 June 2011 at: http://www.unescap.org/apuf-5/documents/updates/Southeast-Asia-Second-Draft.pdf (iv) Expanding Housing Finance to the Underserved in South Asia, The World Bank, official website, Last updated: 2010-10-12 [Last Accessed: 21 Nov 2012] at: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,.contentMDK:22703706~pagePK:146736~piPK:226340~theSitePK:223547, 00.html (v) Rumah Mampu Milik Programme , FAQ, Syarikat Perumahan Negara Berhad at: http://www.spnb.com.my/eng/corporate/faq.htm



Innovation Business Opportunity





Fibre-Granule Board From Empty Fruit Brunch (3UMS001)

Environmentally-friendly alternative to natural wood, made from empty oil palm fruit bunch





Fibre-Granule Board From Empty Fruit Brunch (3UMS001)

Business Opportunity

Malaysia produced 80 Million tonnes dry weight of oil palm biomass in 2011. This reflected the importance and significant potential in biomass where there are is still an excess of biomass, especially in utilizing the empty fruit bunches, while further enhance the palm oil mill effluent management.⁽ⁱ⁾

Innovation/ Intellectual Property

The invention is to provide a broad that is strong in flexural, high impact resistance, sound insulation, non-heat conductor, low thermal conductivity, water resistance, nailing property, strength, lightness, aesthetic values and etc.

Industry Overview

Wood demand is mostly consumed by construction industry where recoveries in the housing sector and rapid industrialization in developing nations are increasing the growth in wood industry. As a result, the global plywood market is projected to exceed 85 million cubic meters by 2018.⁽ⁱⁱ⁾ China dominates the global consumption market for plywood and it has now become the largest producer as well as the largest exporter in the world. Asia Pacific, excluding China is expected to experience the fastest CAGR over the years and demand for wood products in Japan is expected to increase as the country is rebuilding the earthquake devastated area. In 2011, export of Malaysia's plywood fell around 15% to 3.17 Million m3 due to China's rapid growing exportation.⁽ⁱⁱⁱ⁾ However, the export value only slipped 1%, valuing at RM 5.1 Billion as there is a significant rise in plywood prices in 2011.⁽ⁱⁱⁱ⁾

Competitive Advantages

There is no health hazard during handling this fibre granule board and it is easy to handle and store. Besides, there is no degradation on resulting product or environment where this product is invented to preserve the natural wood resources from being depletion. As a result, this product is environmental friendly, renewable and sustainable for production.

Proposed Business Model

Two business models are proposed: (1) to design, develop, produce and distribute this product within South-East Asia as a cost-efficient alternative and to (2) license this product globally to construction or furniture industry.

Project Challenges

One of the key challenges for this project is to gain worldwide regulatory approvals from relevant standard/ quality control agencies. However, this might be a time consuming process. Thus, the best solution is to employ relevant professionals to deal with each potential country's regulatory requirements. Preferred Partner/ Collaboration Established construction companies who have high usage of wood or wood manufacturing companies who have expertise in technical know-how. Thus, issues regarding standard/ quality control regulations of the product can be solved easily by their professionals

Innovation Business Opportunities

Wealth for

Project Overview

The present invention relates to a fibre-granule board utilizing agricultural solid waste for use in the construction and the like industries.

Business Idea

To design, develop, produce, distribute and license the product in a form that can be mass marketed across construction or furniture industry globally. This can be done by emphasizing the product's environmental friendly and no health hazard characteristic.

Competitor Analysis

Apparently, there are limited to even no commercial competitor currently developing industrial-scale fibre granule board for construction industry. However, this product will be competing with other wood such as plywood or timber which is already well established in the market.

Project Status

The product is fully developed and the research team is interested to discuss with potential users who would like to invite industries to manufacture and distribute this product globally through licensing.

Financials

As most of the plywood is used for structural application, the financials will be built based on construction industry. Malaysia's plywood export was valued at RM 5.1 Billion in 2011 and assuming 46% of the plywood is used in construction industry.^(iv) Thus, the potential market for fibre granule broad will be RM 2.3 Billion. With fibre-granule's low cost production using empty fruit bunches, it is assumed it is able to capture at least 1% of plywood's market in the first year and reach 3% by the 3rd year, growing at 7%, the growth rate of Malaysia's building and construction sector in 2012.

 Year 1: RM 2.3 Billion x 107% x 1% = RM 24.6 Million

 Year 2: RM 2.3 Billion x 107%2 x 2% = RM 52.7 Million

 Year 3: RM 2.3 Billion x 107%3 x 3% = RM 84.5 Million

Funding Requirement

The key funding component is for setting up the manufacturing and distribution facilities for the fibre granule boards.

Source: (i) The Star Online (2012), Malaysia Produced SOM Tonnes Oil Oil Palm Biomass in 2011 [online] Last accessed 21st November 2012 at: http:// biz.thestar.com.my/news/story.asp?file=/2012/9/21/business/20120921133814&sec=business (ii) GIA (2012), Plywood- A Global Strategic Report [online] Last accessed 21st November 2012 at: http://www.strategyr.com/pressMCP-1558.asp (iii) EUWID (2012), Malaysia: Decline in Plywood Exports Continues [online] Last accessed 21st November 2012 at: http://www.euwid-wood-products.com/news/wood-based-panels/single/Artikel/malaysia-decline-in-plywood-exports-continues. html (iv) Wood Consumption, Using Less Wood in Buildings [online] Last accessed 21st November 2012 at: http://www.woodconsumption.org/products/ annedminster.html (v) GreenBuild (2012), Malaysia's Construction Sector to Grow by 7% in 2012 [online] Last accessed 21st November 2012 at: http://www. greenbuildasia.org/news-marketupdate.html



Innovation Business Opportunity

RM 1.62 Million Potential Yr3 Revenue Pinapaper And Pinaplastic (1UTM001)

Paper and bio-plastic products made from pineapple industry biomass



 $\left\{ \begin{array}{l} \text{Innovation} \\ \text{Business} \\ \text{Opportunities} \end{array} \right\}$

Wealth for Malaysia

Business Opportunity

An excellent opportunity to create higher value products from biowaste from the pineapple production industry, where worldwide production is 19.4 million tonnes⁽ⁱ⁾ in 2010, that generates 40-50%⁽ⁱⁱ⁾ waste (pineapple leaves, peels and core).

Innovation/ Intellectual Property

The team has developed a process for producing a biocomposite comprising the steps of extruding a homogeneous mixture of high density polyethylene and powder of dried agro based fibers to form pellet; coating the formed pellet with a liquid chemical mixture and molding the coated pellet to produce the bio-composite.

Industry Overview

Malaysia produces a total of 416,070 tonnes pineapple, and is ranked 11th in the world by production quantity, having grown from a total production of 299,318 tonnes in 2006 (or, approx. 27.8% growth yearly).⁽ⁱ⁾ The global paper industry is expected to continue its growth momentum, reaching approximately USD 256 billion in 2017 with a CAGR of 5.9% over the next five years (2012-2017)⁽ⁱⁱⁱ⁾. APAC dominates this industry and was the major contributor with a 42% growth rate in 2011 due to improvement in lifestyle of consumers, urbanization, and rise in disposable income. From 2009 to 2010, the global production of plastics^(iv) increased by 15 million tonnes (6%) to 265 million tonnes, with growth of almost 5% per year over the past 20 years. The total worldwide use of bioplastics^(v) is valued at 571,712 metric tons in 2010, and is expected to grow at a 41.4% CAGR till 2015.

Competitive Advantages

The range of paper products can be produced with different grades and qualities made from waste pineapple leaf. The raw product has a distinct and robust appearance and is suitable for craft and decorative applications. Finer milled paper has a good quality finish suitable for writing and drawing. This technology can be applied to make a range of material with differing properties ranging from films for food packaging, to silicone-like materials, to fillers for rigid cross-linked polymers.

Proposed Business Model

The proposed business is to design and develop the raw material that can be supplied to paper and plastic producers to be made into paper or plastics product applications.

Project Challenges

Some of the major challenges are the assurance of consistency and quality of the raw material in a mass-production environment, the cost effectiveness element compared with use of conventional petrochemicals, fossil fuel materials, forest trees, and the durability of the end consumer product. **Preferred Partner/ Collaboration**

Potential collaborators include decorative paper producers

(eg: Munksjö AB - a leading global player in decor paper), conventional plastic producers seeking an a greener alternative source and biotechnology companies.

Project Overview

A novel process that reduces the time to create value from waste products from the pineapple industry and other biowaste.

Business Idea

To design, develop and produce a range of paper and biocomposite products from a range of agricultural waste materials. These products have the potential to reduce dependence on materials made from fossil fuel sources

Competitor Analysis

Generally there are two categories of competitors: (a) Conventional paper and plastic raw material suppliers that uses depleting fossil fuel and non-green technology, and (b) Alternative suppliers that uses various forms of biocomposite and substitute materials to supply to the paper and plastic production industry. This category includes biotechnology companies, specialty minerals companies, recycle companies, etc.

Project Status

The project team has successfully created a range of paper of different grades and qualities suitable for craft and decorative applications.

Financials

Using a China-produced wood recycled pulp^(vi) as a benchmark, the selling price for one roll of recycled pulp is retailing at USD 200 (RM 600) per roll of estimated 1 tonne each. Assuming the business prices its product at RM 600 per tonne, and can generate 200 tonnes per month, at CAGR 5.9%, will give a potential revenue of:

Year 1: 2,400 tonnes x RM 600 = RM 1.44 Million **Year 2**: 2,542 tonnes x RM 600 = RM 1.52 Million **Year 3**: 2,692 tonnes x RM 600 = RM 1.62 Million

Funding Requirement

In addition to the initial capital investment for the production of the product, additional funds will be required for further development and customization of the invention for various paper and plastics-based product applications. Extensive tests are required to ensure the durability and quality of the material for various applications.

Source: (i) Food and Agriculture Organization of the United Nations, statistics for 2010 (online) [Last Accessed: 21 Nov 2012] at: http://faostat.fao.org/ site/567/ DesktopDefault.aspx?PageID=567#ancor (ii) Biotechnology opportunities in waste treatment and utilization for the food industries, Buckle K A 1989 In: Rogers P L (ed.) Biotechnology and the food industry. Breach Science Publishers, New York. Pp 261-277 (iii) Global Paper Industry 2012-2017: Trends, Profits and Forecast Analysis, Research and Markets, June 2012 at: http://www.researchandmarkets.com/research/287619/global_paper_indus (iv) Plastics - the Facts 2011, Plastics Europe, Association of Plastics Manufacturers. at: http://www.plasticseurope.org/documents/document/20111107101127final_pe_factsfigures_uk2011_lr_041111.pdf (v) Bioplastics: Technologies and Global Markets, BCC Research, Sept 2010. at: http://www.bccresearch.com/ report/bioplastics-technologies-markets-pls050a.html (vi) Alibaba trading portal. at: http://www.alibaba.com/product-gs/672634509/Economically_and_low_price _Recycled_Pulp.html



Innovation Business Opportunity



Low cost and environmentally-friendly food drying system that can operate even at night



Modular Solar Assisted Food Dryer (1UKM010)

Business Opportunity

The V-Groove solar assisted food drying system developed by the project team has the potential to enter the RM 3.2 billion (2011)⁽ⁱ⁾ Malaysian dried processed food market by providing a low cost and standardized solution to food drying. Globally and also in Malaysia a lot of emphasis and incentives have been given for Green technology used for development and application of products, equipment and systems that conserve the natural environment and resources.

Innovation/ Intellectual Property

V-groove solar assisted drying design comprises of a V-groove solar air collector, blower and auxiliary-heater and drying chamber. This system has been tested to be effective in the drying of chillies, seaweeds and green tea. A patent has been filed in Malaysia with the patent application number PI 20091614.

Industry Overview

In Malaysia there is a high demand for dried salted seafood such as squids, prawns, fish, shellfish and anchovies as well as chillies, seaweed, and green tea. It is estimated that the total market of processed food and beverages in Malaysia is about USD 6 billion. Processed foods represent about USD 1.5 billion of this market. The market has been steadily growing over the last decade by 20% annually.

The worldwide market for desiccant compressed air and gas dryers was valued at USD 175 million in 2007 and had a forecast compound annual growth rate of 2.18% for the period 2002-2012.⁽ⁱⁱ⁾

Competitive Advantages

The benefits as compared to using traditional dryers are:

- A low cost solution for drying foods.
- The quality of the dried produce can be accurately controlled by maintaining chamber temperature.
- The solar dryer can be built as stand-alone device or as an auxiliary to the diesel-powered plant;
- The solar dryer can be enhanced to store energy to be used in the afternoon when the sunlight is less intense; it can be further enhanced to operate at night.

Proposed Business Model

Two business models are proposed: (1) To design, assemble and install (mass production or custom built) the solar food dryer for the food processing industry. (2) To license the technology to existing industrial food dryer manufacturers.

Project Challenges

The key challenge faced by the V-Groove dryer is that in order to totally replace the existing industrial dryers it has to provide a robust auxiliary drying system. Further for SMEs using open air drying techniques convincing them to invest in the dryer will be a challenge.

Preferred Partner/ Collaboration

Current industrial dryer manufacturers can be targeted as the manufacturing set-up cost could be reduced drastically. Further tie ups with processed food manufacturers can be established to build and install the customized dryers.

Innovation Business Opportunities Wealth for

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Project Overview

The project involved designing and developing a high performance, modular solar-assisted dryer enabling the high quality drying process of marine and agricultural produce.

Business Idea

To design, manufacture and/or market solar dryers that are cost competitive, hygienic and reliable for drying foodstuff seafood, fruits and vegetables - to tap on the renewable energy which is the direction that every country is moving towards in the future.

Competitor Analysis

There are a number of solar food dryers available in the market mainly in Europe, US, China and India. There is no manufacturer currently in Malaysia. The direct competitors for this would be the conventional industrial dryer currently available in the market.

Project Status

The project team has successfully produced and tested prototypes of the solar dryers. Currently two units of Solar Dryers for fishery products have been set up, one at Islamic Youth Club in Kuala Terengganu, while the other is a seaweed dryer in Tawau, Sabah, that was a joint effort with SIRIM and the Sabah Fishermen Association.

Financials

The cost recovery or payback period for a solar dryer is two to three years, depending on the products to be dried and preserved. The market is expected to grow at a CAGR rate of 8.48% with a targeted market penetration of 5%, 10% and 15%. For large commercial companies the cost of setting up a unit is estimated to be RM 250,000 and for small and medium sized enterprises its estimated to be RM 50,000. The target market is based on estimated 69 new food processing projects each year and 138 existing projects refurbishing.

Year 1: $(9 \times RM 50,000) + (3 \times RM 250,000)] = RM 1.2$ Million Year 2: $(19 \times RM 50,000) + (5 \times RM 250,000) = RM 2.2$ Million Year 3: $(32 \times RM 50,000) + (8 \times RM 250,000) = RM 3.6$ Million

Funding Requirement

The key funding required for this business will be the cost of the various components of the assembled solar dryer system. These components will vary in size and cost based on individual projects' requirements.

Source: (i) Euromonitor Internantional - Dried Processed Food in Malaysia [online] Last accessed 14th Nov 2012 at: http://www.euromonitor.com/driedprocessed-food-in-malaysia/report (ii) Developing a Solar Drying Machine for Agricultural Products - Australian Government - Rural Industries Research and Development Corporation [online] Last accessed 14th Nov 2012 at: https://rirdc.infoservices.com.au/downloads/09-026 (iii) "Market Watch 2012" The Malaysian Food Industry, The German Chamber Network[online] last accessed 20th November 2012: http://www.malaysia.ahk.de/fileadmin/ahk_malaysia/Market_ reports/The_Malaysian_Food_Industry.pdf



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3501, Level 3 Quill Building 3 Jalan Teknokrat 5 63000 Cyberjaya Selangor Darul Ehsan Malaysia.

Tel +603-8319 3116 Fax +603-8319 3499 talktous@innovation.my

www.innovation.my