SURAT KEPUTUSAN REKTOR
UNIVERSITAS ISLAM NEGERI SULTAN SYARIF KASIM RIAU
Nomor: 1167 /R/2015

Tentang
PENETAPAN PENELITIAN ISU STRATEGIS (UNGGULAN)
PADA LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
UIN SULTAN SYARIF KASIM RIAU
TAHUN ANGGARAN 2015

REKTOR UIN SULTAN SYARIF KASIM RIAU

Menimbang :

a. Bahwa dalam rangka untuk kelancaran pelaksanaan Penelitian Individual pada Lembaga Penelitian dan Pengabdian Kepada Masyarakat UIN Sultan Syarif Kasim Riau tahun 2015, maka dipandang perlu menetapkan Peneliti Penelitian Isu Strategis berdasarkan SK Rektor;
b. Bahwa mereka yang namanya tercantum dalam lampiran Surat Keputusan ini dianggap mampu dan cakap serta memenuhi syarat untuk melaksanakan tugas tersebut;
c. Bahwa berdasarkan pertimbangan sebagaimana di maksud dalam huruf a dan huruf b perlu menetapkan Surat Keputusan Rektor tentang penunjukkan sebagai peneliti pada Lembaga Penelitian dan Pengabdian Kepada Masyarakat UIN Sultan Syarif Kasim Riau tahun 2015

Mengingat :

1. Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional;
2. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
3. Undang-Undang Nomor 5 Tahun 2014 tentang Aparatur Sipil Negara;
4. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi;
5. Peraturan Menteri Agama RI Nomor 2 Tahun 2005 tentang perubahan IAIN Susqa menjadi UIN Sultan Syarif Kasim Riau;
6. Peraturan Menteri Agama RI Nomor 9 Tahun 2013 jo. Peraturan Perubahan Menteri Agama RI Nomor 74 Tahun 2013 tentang Organisasi dan Tata Kerja UIN Sultan Syarif Kasim Riau;
7. Peraturan Menteri Agama RI Nomor 23 Tahun 2014 tentang Statuta Universitas Islam Negeri Sultan Syarif Kasim Riau;
8. Keputusan Menteri Keuangan RI Nomor 77.KMK.05/2009 tentang Penetapan UIN Sultan Syarif Kasim Riau pada Departemen Agama sebagai Instansi Pemerintah yang menetapkan Pengelolaan Keuangan Badan Layanan Umum (BLU);
9. Keputusan Menteri Agama RI Nomor; B.II/3/13874 tanggal 18 Juni 2014, tentang Pengangkatan Rektor UIN Sulthan Syarif Kasim Riau masa bakti 2014-2018;
10. Surat Pengesahan DIPA Badan Layanan Umum UIN Sultan Syarif Kasim Riau Petikan Tahun Anggaran 2015 Nomor SP DIPA-025.04.2.424157/2015 Tanggal 14 Nopember 2014

MEMUTUSKAN

Menetapkan : **SURAT KEPUTUSAN REKTOR TENTANG PENETAPAN PENELITI PENELITIAN ISU STRATEGIS PADA LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT UIN SULTAN SYARIF KASIM RIAU TAHUN ANGGARAN 2015**

Pertama.....

Pertama : Menetapkan Peneliti Penelitian Isu Strategis pada Lembaga Penelitian dan Pengabdian Kepada Masyarakat UIN Sultan Syarif Kasim Riau tahun anggaran 2015 sebagaimana tercantum dalam lampiran yang merupakan bagian tidak terpisahkan dari surat keputusan ini.

Kedua Tugas Peneliti adalah:

1. Melakukan penelitian dengan baik ;
2. Melakukan kegiatan turun ke lapangan, perpustakaan dan atau ke laboratorium;
3. Menyusun draf penelitian dan membuat ringkasan hasil penelitian;
4. Mengikuti seminar hasil penelitian;
5. Menyusun laporan hasil penelitian;
6. Menyusun laporan penggunaan dana penelitian;
7. Mempublikasikan hasil penelitian;
8. Melaporkan hasil kegiatan kepada Rektor.

Ketiga : Biaya pelaksanaan dibebankan kepada DIPA BLU UIN Sultan Syarif Kasim Riau tahun anggaran 2015 DIPA-025.04.2.424157/2015 Tanggal 14 Nopember 2014 besaran dana perjudul terlampir.

Keempat : Surat Keputusan ini berlaku mulai sejak tanggal 1 Mei s/d 31 Desember 2015.

Kelima : Segala sesuatu akan diubah dan dibetulkan kembali sebagaimana mestinya, apabila terdapat kekeliruan dalam penetapan ini.

KUTIPAN Surat Keputusan ini disampaikan kepada Lembaga Penelitian dan Pengabdian Kepada Masyarakat UIN Sultan Syarif Kasim Riau untuk diketahui dan dilaksanakan.

Ditetapkan di : Pekanbaru
Pada Tanggal : 26 Juni 2015

Rektor,

PROF. DR. H. MUNZIR HITAMI, MA
NIP. 195404221986031002

Tembusan Keputusan ini disampaikan kepada :

1. Sekretaris Jenderal Kementerian Agama RI Jakarta;
2. Direktur Jenderal Pendidikan Islam Kementerian Agama RI Jakarta;
3. Direktur Pendidikan Tinggi Agama Islam Kementerian Agama RI Jakarta;
4. Wakil Rektor di Lingkungan UIN Sultan Syarif Kasim Riau;
5. Dekan dan Direktur di Lingkungan UIN Sultan Syarif Kasim Riau;
6. Ketua Lembaga dan Kepala Pusat UPT di lingkungan UIN Sultan Syarif Kasim Riau;
7. Kepala Biro di lingkungan UIN Sultan Syarif Kasim Riau;
8. Kepala Kantor Pelayanan Perbendaharaan Negara Pekanbaru;
9. Kepala Bagian Keuangan dan Akuntansi UIN Sultan Syarif Kasim Riau;
10. Bendaharawan Pengeluaran DIPA BLU UIN Sultan Syarif Kasim Riau.

Lampiran SURAT KEPUTUSAN REKTOR UIN
SULTAN SYARIF KASIM RIAU
Nomor : 1167 / R / 2015
Tanggal 26 Juni 2015

KLUSTER PENELITIAN STRATEGIS UNIVERSITAS (UNGGULAN)
LPPM UIN SUSKA RIAU TAHUN 2015

No	Peneliti Utama	Anggota Peneliti	Tim Penunjang	Judul	Lokasi	Nilai
1	Alaiddin, Prof. Dr. MA	Dr. Zulkifli, M.Ag (197410062005011005) Fadhilah Syafria, ST, M.Kom Inggih Permana	wali saputra, SE.Ak, MA (198008162009011014) Surya Elhadi, ST (130012016)	WAKAF PRODUKTIF DI NEGARA SEKULER : (STUDI KASUS DI NEGARA SINGAPURA DAN THAILAND)	SINGAPURA DAN THAILAND	804
2	M. Nazir, Prof. Dr	Kunaifi, ST, PgDipEnst, M.Sc (197607242007101003) Aulia Ullah, ST, M.Eng () Dr. Harris Simare-mare, ST, MT (198306252008011008)		Development of an Early Warning System for Forest Fires in Riau Province: Social and Technological Approaches	Hutan Kampar dan Colmar Perancis	1092
3	Merry Siska, ST, MT	Eki Saputra. Kom.M.Kom. (198307162011011008) Reski Mai Candra, ST, M.Sc (8290) DEWI DINIATY, ST., M.Ec.dev (8309)	T.L.J. Ferris, Ph.D (-) Fanny Camelia, ST, M. App PrjMgmt (19800426 200501 2 005) Siti Fathonah (11052202035)	Improvement Capability of Riau Pineapple Small and Medium Enterprises (SMEs) Using System Engineering and Islamic Approach: Experience from South Australian SMEs	School of Engineering, University of South Australia, MLK-09, SCT2-45, Mawson Lakes Boulevard, Mawson Lakes, 5095, Australia.	1146

4	Mhd. Abdi Almaktsur, M.A	Khairil Anwar, MA (197407132008011011) Dr. Azni, S.Ag, M.Ag (197010102007011051) Mardiana, M.A (197404101990032001)	BUDI HAZMOR (197701162007101003)	PEMAHAMAN DAN KESADARAN TERHADAP PELAKSANAAN HUKUM JINAYAH DI ASIA TENGGARA (SUATU TINJAUAN PSIKO-SOSIO HUKUM ISLAM)	Brunei Darussalam, Malaysia dan Indonesia.	790
5	Raihani, S.Ag, M.Ed, Ph.D	Drs. H. Promadi, M.A. Ph.D (196408271991031009) Sopyan, M.Ag (197104131998031009) Amri Syarif Hidayat, M.Si (197501262009121001)		TEACHING DIVERSITY: Cultural Pluralism in Thai Madrasah's Islamic Studies	Thailand	820

Rektor,

PROF. DR. H. MUNZIR HITAMI, MA

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Improvement Capability of Riau Pineapple Small and Medium Enterprises (SMEs) Using System Engineering and Islamic Approach: Experience from South Australian SMEs

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DIPA UIN SUSKA RIAU 2015

LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
UIN SULTAN SYARIF KASIM RIAU
2015

Summary

Business processing pineapple (pineapple agro-industry) into chips has been developed in Riau. But they do still venture at household level and the difficulty of the problems faced in marketing, capital, etc. processing technology. Understanding of the issues and its potential are extremely important as the input for improvement capability of Riau pineapple SMEs. This research attempts to answer the fundamental question: Can system engineering and Islamic approach be developed to improve Riau pineapple SMEs capability?

There are many of pineapple chips SMEs in Kampar, such as Usaha Baru Ibu, Aroma Rasa, Dua Saudara dan Sampurna. The Problem that we find in this SMEs especially for marketing is the packaging of pineapple chips. Beside that, other problems that we find are energy, capital, raw material, machine, price of supporting material and market. Based on House of Quality in Table 4.4, the 3 top ranking for percentage are the taste of pineapple chips (9.13%), Printed out of packaging (7.97%) and the advertisement (6.91%).

In Islam, Marketing is not confined with buying and selling or telling and getting profit or about goods and services under any business. All activities and transactions are considered as worship in Islam. Angas Park Dried Apricots make a tasty and nutritious snack. Like all dried fruit, apricots are high in fibre, low in fat and cholesterol free. Ausnat Fruits is Food Safe and HACCP Accredited, and packaging sizes, as well as gift baskets, can be made to suit individual client requirements

The breadth of areas of concern in systems engineering is considerably greater than in any other field of engineering, where the concerns are constrained by either a group of physical phenomena which form the basis of a class of technologies or an area of application concern. Islam attempts to synthesize reason and revelation, knowledge and values, in its approach to the study of nature. In general, every food is allowed for Muslims except what is prohibited either by the Holy Quran or by the Hadith. These rules of Shari'ah (Islamic law) bring freedom of choice for people to eat and drink anything they like as long as it is not haram (prohibited).

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Chapter 1
Introduction

1.1 The Research Background

Pursuant to data published by the Ministry of Cooperative and SMEs Republic of Indonesia data, one of the biggest contributions of Indonesian GDP is SMEs which shares 57.12% of GDP in year 2012 and the biggest Indonesian SMEs is home and small scale industry (equal to 98% from total number of SMEs in Indonesia) (Handayani, et. al., 2013). Small Medium Enterprises (SMEs) play a significant role in the business system of both developed and developing Countries (Ab-Rahman, 2012). The majority firms worldwide are SMEs, and they play a significant role in economy (Suliyanto, et. al., 2013).

Small Medium Enterprises (SMEs) in Indonesia is growing fast. In the period of 2011-2012, SMEs in Indonesia grew as much as 2.41% from total of 55.206.444 units (which composed by: Micro Businesses as much as 54.559.969, Small Businesses as much as 602.195 and Middle Businesses as much as 44.280) to total of 56.534.592 units (which composed by: 55.856.176 Micro Businesses, 629.418 Small Businesses, and 48.997 Middle Businesses). By these numbers, SMEs in Indonesia gives big contribution to create job employment. In 2011, for example, SMEs created jobs to about 97.24% (equal to 101.722.548 persons); and in 2012, SMEs had successfully created jobs to about 9.16% (equal to 107.657.509 persons). SMEs' contribution to the National GDP is also significant. In 2011, SMEs' contribution to National GDP was about 57.94% (or equal to IDR 4.303.571,5 Trillion) and it increased to 59.08% (or equal to IDR 4.869.568,1 Trillion) in 2012. These contributions have made SMEs become one of the key sectors to enhance Indonesian economy (Tambunan, 2013).

Moreover, related to export performance, SMEs in Indonesia give significant contributions to national export performance. In 2010, SMEs' contribution to national export performance is about IDR 175.894,9 Billion (or equal to 15.81%) and IDR 187.441,82 Billion (equal to 16.44%) in 2011. The

flagship export products for SMEs include: 30% of handicraft, 29% of fashion and accessories, 27% of furniture, 10% of food and beverage, and 4% of healthy and beauty products. These figures prevail despite wide range affirmative policy initiatives in developing SMEs launched by the Government of Indonesia (GOI). Based on their earnings and capability in facing economic crisis, Small and Medium Enterprises (SMEs) show better performance than that of big enterprises (Siringoringo, et. al, 2009)

Riau Province has the highest total GDP in the region of Sumatra as well as one of the highest GDP per capita in Sumatra (and any region outside Java Island). Riau Province also performed well (in the national level) in Human Development Index indicator. Riau Province has the 3rd Highest HDI in Indonesia right after DKI Jakarta and Sulawesi Utara. Riau province also has The Highest HDI level in Sumatra, Indonesia.

Lending to Micro, Small and Medium Enterprises (SMEs) by banks in Rupiah in the first quarter of 2013 reached 15.73 trillion rupiah, an increase of 0.64%. The share of loans reached 35.68% of the total commercial bank credit in Riau, relatively stable compared to 2012 (35.98%). Specifically, when viewed according to the scale of its business, loans disbursed largely absorbed by the small business with a credit score of 6,07 trillion rupiah, followed by medium-scale enterprises and micro respectively 5,69 trillion rupiah and 3,97 trillion rupiah (BI, 2013).

But the entrepreneurs of pineapple small and medium enterprises still venture at household level. The problems in pineapple small and medium enterprises based on the preeliminary survey (Appendix 1) on the customer and industry owners of pineapple chips and pineapple dodol are marketing, capital, people, price, quality product, machine. processing technology. As a result, many craftsmen who are still bound by the wholesalers at low prices, the difficulty of developing a business, product quality problems, etc. The focus in this research is how to improve the pineapple chips and pineapple dodol marketing in the today's competitive market.

Table 1.1 Development Data of Micro, Small and Medium Enterprises (SMEs) in the Province of Riau (December 2014)

NO	KAB/KOTA	JENIS			TOTAL	SEKTOR									JUMLAH
		USAHA MENENGAH	USAHA KECIL	USAHA MIKRO		PERTANIAN	PERTAMBANGAN & PENGGALIAN	INDUSTRI PENGOLAHAN	LISTRIK GAS AIR BERSIH	KONSTRUKSI	PERDAGANGAN HOTEL RESTORAN	ANGKUTAN KOMUNIKASI	KEUANGAN SEWA	JASA JASA	
1	Pelalawan	218	4.734	16.681	21.633	14.726	91	1.345	64	15	5.074	2	1	315	21.633
2	Indragiri Hilir	489	8.839	45.256	54.584	39.621	65	2.345	85	396	7.845	1.768	53	2.406	54.584
3	Kampar	566	10.406	42.335	53.307	35.263	260	1.256	27	98	11.074	1.796	96	3.437	53.307
4	Rokan Hilir	499	7.412	31.408	39.319	30.009	-	630	78	6	7.714	-	-	882	39.319
5	Siak	447	7.341	23.395	31.183	16.633	98	930	48	163	7.754	1.841	53	3.663	31.183
6	Bengkalis	236	7.990	38.501	46.727	965	112	764	120	129	34.735	1.081	85	8.736	46.727
7	Meranti	72	1.604	9.340	11.016	1.411	7	750	15	97	8.216	135	40	345	11.016
8	Pekanbaru	2.516	30.683	59.962	93.161	14.292	35	1.768	70	807	55.808	6.431	243	13.707	93.161
9	Kuantan Singingi	460	4.059	25.891	30.410	21.363	125	536	177	303	6.601	174	404	727	30.410
10	Dumai	1.021	14.704	29.638	45.363	7.817	-	7.137	-	1.424	17.443	5.003	6.380	159	45.363
11	Indragiri Hulu	400	43.714	27.643	71.757	61.832	412	1.047	-	-	5.831	709	-	1.926	71.757
12	Rokan Hulu	475	7.804	27.765	36.044	28.129	125	1.237	96	15	6.286	2	53	101	36.044
▶	JUMLAH	7.399	149.290	377.815	534.504	272.061	1.330	19.745	780	3.453	174.381	18.942	7.408	36.404	534.504

Table 1.2 Data of Small and Medium Enterprises (SMEs) in the Province of Riau (2010 - 2014)

NO	KAB / KOTA	2010	2011	2012	2013	2014
1	2	3	4	5	6	7
1	PELALAWAN	21.300	21.300	21.548	21.633	21.633
2	INDRAGIRI HILIR	54.522	54.522	54.584	54.584	54.584
3	KAMPAR	53.059	53.059	53.147	53.307	53.307
4	ROKAN HILIR	38.686	38.686	39.319	39.319	39.319
5	SIAK	30.994	30.994	31.157	31.183	31.183
6	KABUPATEN. BENGKALIS	39.300	39.300	39.406	39.573	46.727
7	MERANTI	10.898	10.898	11.016	11.016	11.016
8	PEKANBARU	93.095	93.095	93.161	93.161	93.161
9	KUANTAN SINGINGI	28.735	28.735	29.088	29.088	30.410
10	DUMAI	39.398	39.398	39.497	45.135	45.363
11	INDRAGIRI HULU	33.335	36.280	36.322	71.757	71.757
12	ROKAN HULU	35.926	35.926	36.044	36.044	36.044
	TOTAL	479.248	482.193	484.289	525.800	534.504

Business processing pineapple (pineapple agro-industry) into chips has been developed in Riau province. A lot of fresh pineapples are sold on both sides of the Pekanbaru-Bangkinang street, but all fresh pineapples still sold by put on fresh pineapples the ground, without having a good package.

Figure 1.1 Fresh Pineapples are Sold on Both sides of the Pekanbaru-Bangkinang street

If fresh pineapple prices is declined, then the farmers will produce pineapple chips, the pineapple that is used for pineapple chips are pineapples which are not sold anymore or have very ripe or nearly rot. It is certainly contrary to sanjai chips in West Sumatra where the raw materials are from special cultivication. If we compared with the sanjai chips, the price of pineapple chips in Riau is still too high at Rp. 30,000 for the size of 250 grams. While the average price of the sanjai chips at Rp. 12,000 for the size of 250 grams.

Figure 1.2 The Production of Pineapple Chips using Vacuum Frying Machine in Kualu Nenas

The high price of pineapple chips due to high production costs by frying process using an automated machine vacuum frying which is required considerable electrical energy. Where sanjai chips only using cauldron and wood as fuel. Marketing of chips pineapple or pineapple dodol in Dumai and Bengkalis are still very limited. Fresh pineapples are sold on roadsides Pekanbaru - Bangkinang. While the pineapple chips and dodol pineapple still sold in outlets that exist in the production and coupled with a few small shops. This is certainly going to be a very complicated problem because Riau does not have a variety of souvenirs if comparing with neighbour province.

Potential pineapple plantation in the district of Pekanbaru City, Riau Province reached 1,550 hectares, approximately 4.3 million trees, with a total production peak at 2,150 tons per year. Approximately 1,050 hectares located in the village of Kualu Nanas, with a total production reached 1,456 tons per year or 121 tons per month (Bisnis.com, 2013).

Like USA, Canada, UK, Sweden, Australia and Singapore, Indonesia has provided some support to the SMEs. There are many ways to improve Riau pineapple SMEs capability: supply chain optimization, organizational change management, technology adoption management, business process engineering, and improvement in skills, technologies, processes, methods and tools. This research here focuses on the improvement capability of Riau pineapple SMEs using system engineering and Islamic approach (Tran, ET, al, 2008).

Systems engineering is a branch of engineering which addresses a wide diversity of matters including technical, management and product appropriateness issues associated with the design, development, delivery, sustainment and retirement of product systems that need to provide service in diverse application including both technical and human contexts. The breadth of areas of concern in systems engineering is considerably greater than in any other field of engineering, where the concerns are constrained by either a group of physical phenomena which form the basis of a class of technologies or an area of application concern (Ferris, 2009).

SE provides engineers with an approach based on a set of concepts (i.e., stakeholder, requirement, function, scenario, system element, etc.) and generic

processes. Each process is composed of a set of activities and tasks gathered logically around a theme or a purpose. A process describes "what to do" using the applied concepts. The implementation of the activities and tasks is supported by methods and modeling techniques, which are composed themselves of elementary tasks; they describe the "how to do" of SE (SEBOK, 2013). A concise definition of systems engineering is needed as well as a framework, or model, with which to show the incorporation of the elements of QFD. The primary tool used in QFD is the house of quality. The house of quality translates the voice of the customer into design requirements.

Besides produce chips, Riau pineapple SMEs also produces Natta de vine, jam and syrup. Improving the quality of products produced by pineapple SMEs is the initial focus, the drying process efficiency, so that the resulting chips tasted more savory, delicious, and durable. If associated with Islam, the resulting product must be halal.

Halal is an Arabic word which means permitted, allowed, lawful, approved and legal. This Quran term used to describe the permitted things as "Halal". Opposite of Halal is Haram (forbidden or prohibited). There is a clear boundary between Halal and haram. While the things with no clear status is termed as "MacBook" (doubtful). The basic principles are revealed by Almighty and explained by tradition of Prophet (Hadith). Other sources of Jurisprudence used to determine the permissibility of food not explained in Quran and Hadith are Ijtihad to solve the problem either by (1) Ijma, consensus of opinion or (2) Qiyas, analogical reasoning or by combination of both (Khattak, et., al, 2011).

In general, every food is allowed for Muslims except what is prohibited either by the Holy Quran or by the Hadith. These rules of Shari'ah (Islamic law) bring freedom of choice for people to eat and drink anything they like as long as it is not haram (prohibited).

إِنَّمَا حَرَّمَ عَلَيْكُمُ ٱلْمَيْتَةَ وَٱلدَّمَ وَلَحْمَ ٱلْخِنزِيرِ وَمَآ أُهِلَّ بِهِۦ لِغَيْرِ ٱللَّهِ ۖ فَمَنِ ٱضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَآ إِثْمَ عَلَيْهِ ۚ إِنَّ ٱللَّهَ غَفُورٌ رَّحِيمٌ ﴿١٧٣﴾

He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah . But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], there is no sin upon him. Indeed, Allah is Forgiving and Merciful. (Quran 2:173)

يَٰٓأَيُّهَا ٱلرُّسُلُ كُلُوا۟ مِنَ ٱلطَّيِّبَٰتِ وَٱعْمَلُوا۟ صَٰلِحًا ۖ إِنِّى بِمَا تَعْمَلُونَ عَلِيمٌ ﴿٥١﴾

[Allah said], "O messengers, eat from the good foods and work righteousness. Indeed, I, of what you do, am Knowing. (Quran 23:51)

Most of Indonesian people use halal food, because 88 % Indonesian people are Muslims developing country (Okezone.com, 2013). There has been little research focused on developing countries about SMEs (Tambunan, 2013; Pandya, 2012). If we compared with other developed countries, such as Australia, Riau as one of potential province in Indonesia has to improve its capability in SMEs.

This 2013-14 South Australian State budget delivers support for small businesses (SMEs), helping people start, grow and sustain their operations. South Australia has approximately 140,000 small businesses (SMEs). They are often the backbone of a community, providing jobs and services to locals. To assist people looking to start a business and sustain their operations, the State government is investing $600,000 over two years, and $300,000 to assist businesses to bid for government work. In addition, businesses (SMEs) have been rewarded with payroll tax concessions, a cut in payroll tax for businesses (SMEs) with a payroll

of up to $1 million, in a temporary measure for two years which will provide a maximum saving of up to $9,800 (MYOB, 2013).

1.2 Problem Definition

Understanding of the issues and its potential are extremely important as the input for improvement capability of Riau pineapple SMEs. This research attempts to answer the fundamental question: Can system engineering and Islamic approach be developed to improve Riau pineapple SMEs capability?

1.3 Specific Objective

To answer the question, this research proposes to:

1. Find out facts related to the problems faced by Riau pineapple SMEs.
2. Do needs and requirements analysis by creating House of Quality (HOQ) as System Engineering tools to improve Riau pineapple SMEs capability.
3. Use Islamic approach to improve Riau pineapple SMEs capability.
4. Study of South Australian SMEs.

1.4 The Research Advantage

There are 4 (four) advantages gained from this research:

a. Provide a forum for research groups to develop our knowledge in the field of systems engineering in the world.
b. Foster self-confidence for every faculty researchers in order to enhance the ability of researchers to conduct cooperation in the field of research.
c. Motivating each faculty researchers for publication in international journals
d. Build and expand networks (networking) among UIN SUSKA's researchers with partners' lecturer at the University of South Australia.

1.5 The Research Urgency

By doing needs and requirements analysis in system engineering, we will understand the expectation of the people who are currently working in Riau pineapple SMEs. If the stakeholders are satisfied, the capability of Riau pineapple SMEs will be increased.

1.6 The Potential Output

This research will provide 3 (three) outputs:

1. The findings of the concept of needs and requirements in systems engineering analysis in Riau pineapple SMEs as scientific development engineering theory.
2. Establishment of networks (networking) and research cooperation between UIN Sultan Syarif Kasim Riau and School of Engineering, University of South Australia. This is evidenced by the availability of Professor Timothy Ferris-Research Education Portfolio Leader, School of Engineering, University of South Australia-become the advisor lecturer in this research collaboration.
3. This research is the kind of thing that might be publishable in international journal.

Chapter 2
Literature Review

2.1. Small and Medium Enterprises (SMEs)

Based on their earnings and capability in facing economic crisis, Small and Medium Enterprises (SMEs) shows better performance than large enterprise. There are plenty of SME business units still obtained high profit though the economic rate reached minus thirteen point four percent (-13.4%) in 1998 causing the number of SME business units decrease at two point ninety five million business units (Siringoringo, 2009)

Small Medium Enterprises (SMEs) play a significant role in the business system of both developed and developing Countries (Ab-Rahman, 2012). Small industry is part of national industry that has the primary mission is employment and business opportunities, improving coconut sugar entrepreneur welfare, the provision of goods and services as well as various compositions both for the domestic market and overseas market. The majority firms worldwide are SMEs, and they play a significant role in economy. The attention in researching small businesses is rapidly growing. Over past three decades it has become popular among academics to focus investigation on small and medium sized organization (Mc Larty.et al., 2012). Tripathi and Siddiqui (2012) state that main reason to focus on the SME sector is that this entrepreneurship influences society and contributes to the economic development of the region where it is located. They influence the activities of all kinds of firms, but there are special problems that affect SMEs more than larger businesses (Mc Larty et al., 2012).

The term “SME” encompasses a broad spectrum of definitions. The definition varies from country to country. Generally these guidelines are based upon either headcount or sales or assets. Egypt defines SMEs as having more than 5 and fewer than 50 employees. Whereas Vietnam considers SMEs to have between 10 and 300 employees. However the Inter-American Development Bank defines SMEs as having a maximum of 100 employees and less than $3 million in revenue. In Europe, they are defined as having manpower fewer than 250 employees and United States define them with employees less than

500. As general guidelines, the World Bank defines SMEs as those enterprises with a maximum of 300 employees, $15 million in annual revenue, and $15 million in assets (Pandya, 2012).

Kachembere (2011) notes that SMEs are playing pivotal role in promoting grassroots economic growth and equitable sustainable development. It is not only the fact that high rates of economic growth contribute to economic and social development and poverty reduction. However, it depends on the quality of growth. Quality of growth includes the composition of growth, its spread and distribution and most importantly the degree of sustainability. Hence it becomes important to understand various factors responsible for quality growth through the route of SMEs.

2.2. System Engineering

Systems engineering is a branch of engineering which addresses a wide diversity of matters including technical, management and product appropriateness issues associated with the design, development, delivery, sustainment and retirement of product systems that need to provide service In diverse application including both technical and human contexts. The breadth of areas of concern in systems engineering is considerably greater than in any other field of engineering, where the concerns are constrained by either a group of physical phenomena which form the basis of a class of technologies or an area of application concern (Ferris, 2009).

Systems engineering integrates all the disciplines and specialty groups into a team effort forming a structured development process that proceeds from concept to production to operation. Systems engineering considers both the business and the technical needs of all customers with the goal of providing a quality product that meets the user needs. (INCOSE 2012).

Specified needs, generally called system requirements, are the translation of the stakeholder requirements to represent the views of the supplier, keeping in mind the potential, preferred, and feasible solutions. Consistent practice has shown this process requires iterative and recursive steps in parallel with other life cycle processes through the system design hierarchy (ISO/IEC/IEEE 29148 2011).

2.3. House of Quality (HOQ)

The primary planning tool used in QFD is the house of quality. The house of quality translates the voice of the customer into design requirements that meet specific target values and matches that against how an organization will meet those requirements. Many managers and engineers consider the house of quality to be the primary chart in quality planning.

The structure of QFD can be thought of as a framework of a house, as shown in Figure 2.1.

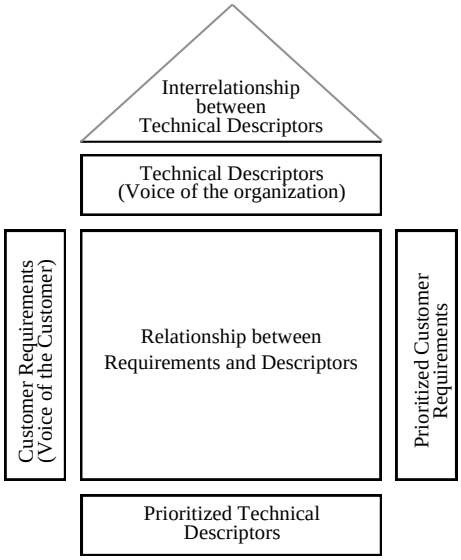

Figure 2.1 House of Quality (HOQ)

Reproduced with permission from James L. Brossert, *Quality Function Deployment—A Practitioner's Approach* (Milwaukee, Wisc.: ASQC Quality Press, 1991).

The parts of the house of quality are described as follows:

1. The exterior walls of the house are the customer requirements. On the left side is a listing of the voice of the customer, or what the customer expects in the product. On the right side are the prioritized customer requirements, or planning matrix. Listed are items such as customer benchmarking, customer importance rating, target value, scale-up factor, and sales point.
2. The ceiling, or second floor, of the house contains the technical descriptors. Consistency of the product is provided through engineering characteristics, design constraints, and parameters.
3. The interior walls of the house are the relationships between customer requirements and technical descriptors. Customer expectations (customer

requirements) are translated into engineering characteristics (technical descriptors).

4. The roof of the house is the interrelationship between technical descriptors. Tradeoffs between similar and/or conflicting technical descriptors are identified.
5. The foundation of the house is the prioritized technical descriptors. Items such as the technical benchmarking, degree of technical difficulty, and target value are listed.

This is the basic structure for the house of quality; once this format is understood, any other QFD matrices are fairly straightforward. The matrix that has been mentioned may appear to be confusing at first, but when it is looked at by parts, the matrix is significantly simplified. A basic house of quality matrix is shown in Figure 2.2. There is a considerable amount of information contained within this matrix. It is easier to comprehend once each part is discussed in detail.

2.3.1 Step 1—List Customer Requirements (WHATs)

Quality function deployment starts with a list of goals/objectives. This list is often referred as the WHATs that a customer needs or expects in a particular product. This list of primary customer requirements is usually vague and very general in nature. Further definition is accomplished by defining a new, more detailed list of secondary customer requirements required to support the primary customer requirements. In other words, a primary customer requirement may encompass numerous secondary customer requirements.

Although the items on the list of secondary customer requirements represent greater detail than those on the list of primary customer requirements, they are often not directly actionable by the engineering staff and require yet further definition. Finally, the list of customer requirements is divided into a hierarchy of primary, secondary, and tertiary customer requirements, as shown in Figure 2.2 and Figure 2.3. For example, a primary customer requirement might be dependability and the corresponding secondary customer requirements could include reliability, longevity, and maintainability.

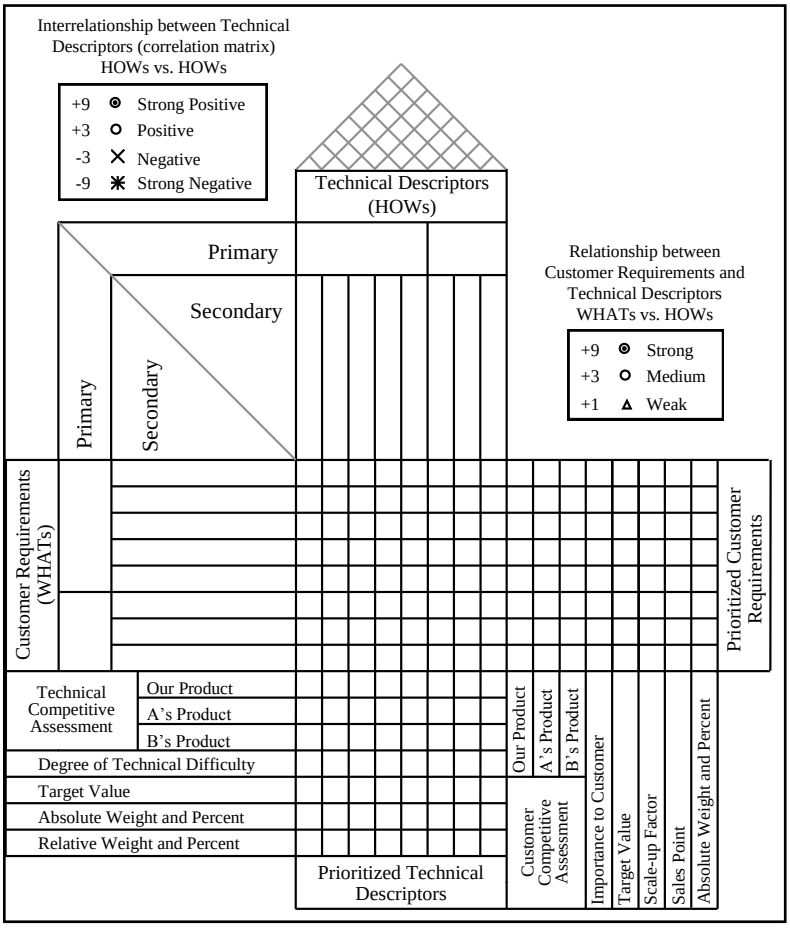

Figure 2.2 Basic House of Quality Matrix

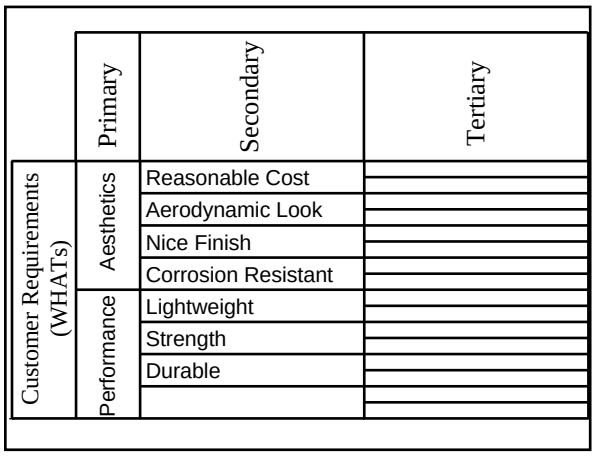

Figure 2.3 Refinement of Customer Requirements

2.3.2 Step 2—List Technical Descriptors (HOWs)

The goal of the house of quality is to design or change the design of a product in a way that meets or exceeds the customer expectations. Now that the customer needs and expectations have been expressed in terms of customer

requirements, the QFD team must come up with engineering characteristics or technical descriptors (HOWS) that will affect one or more of the customer requirements. These technical descriptors make up the ceiling, or second floor, of the house of quality. Each engineering characteristic must directly affect a customer perception and be expressed in measurable terms.

Implementation of the customer requirements is difficult until they are translated into counterpart characteristics. Counterpart characteristics are an expression of the voice of the customer in technical language. Each of the customer requirements is broken down into the next level of detail by listing one or more primary technical descriptors for each of the tertiary customer requirements. This process is similar to refining marketing specifications into system-level engineering specifications. Further definition of the primary technical descriptors is accomplished by defining a list of secondary technical descriptors that represent greater detail than those on the list of primary technical descriptors. This is similar to the process of translating system-level engineering specifications into part-level specifications. These secondary technical descriptors can include part specifications and manufacturing parameters that an engineer can act upon. Often the secondary technical descriptors are still not directly actionable, requiring yet further definition. This process of refinement is continued until every item on the list is actionable. Finally, the list of technical descriptors is divided into a hierarchy of primary, secondary and tertiary technical descriptors, as shown in Figure 2.4.

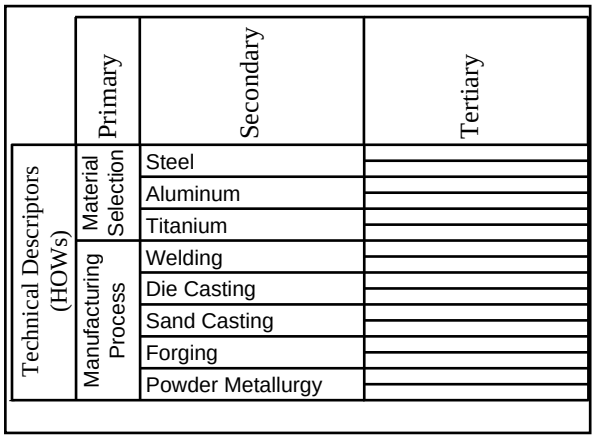

Figure 2.4 Refinement of Technical Descriptors

This level of detail is necessary because there is no way of ensuring successful realization of a technical descriptor that the engineering staff does not know how to accomplish. The process of refinement is further complicated by the fact that through each level of refinement, some technical descriptors affect more than one customer requirement and can even adversely affect one another. For example, a customer requirement for an automobile might be a smooth ride. This is a rather vague statement; however, it is important in the selling of an automobile. Counterpart characteristics for a smooth ride could be dampening, anti-roll, and stability requirements, which are the primary technical descriptors. Brainstorming among the engineering staff is a suggested method for determining the technical descriptors.

2.3.3 Step 3—Develop a Relationship Matrix between WHATs and HOWs

The next step in building a house of quality is to compare the customer requirements and technical descriptors and determine their respective relationships. Tracing the relationships between the customer requirements and the technical descriptors can become very confusing, because each customer requirement may affect more than one technical descriptor, and vice versa.

The inside of the house of quality, called the relationship matrix, is now filled in by the QFD team. The relationship matrix is used to represent graphically the degree of influence between each technical descriptor and each customer requirement. This step may take a long time, because the number of evaluations is the product of the number of customer requirements and number of technical descriptors. Doing this early in the development process will shorten the development cycle and lessen the need for future changes.

It is common to use symbols to represent the degree of relationship between the customer requirements and technical descriptors. For example,

- A double circle represents a strong relationship.
- A single circle represents a medium relationship.
- A triangle represents a weak relationship.
- The box is left blank if no relationship exists.

It can become difficult to comprehend and interpret the matrix if too many symbols are used. Each degree of relationship between a customer requirement and a technical descriptor is defined by placing the respective symbol at the intersection of the customer requirement and technical descriptor, as shown in Figure 2.5. This method allows very complex relationships to be depicted and interpreted with very little experience.

The symbols that are used to define the relationships are now replaced with numbers; for example:

◎ = 9
○ = 3
△ = 1

These weights will be used later in determining trade-off situations for conflicting characteristics and determining an absolute weight at the bottom of the matrix.

After the relationship matrix has been completed, it is evaluated for empty rows or columns. An empty row indicates that a customer requirement is not being addressed by any of the technical descriptors. Thus, the customer expectation is not being met. Additional technical descriptors must be considered in order to satisfy that particular customer requirement. An empty column indicates that a particular technical descriptor does not affect any of the customer requirements and, after careful scrutiny, may be removed from the house of quality.

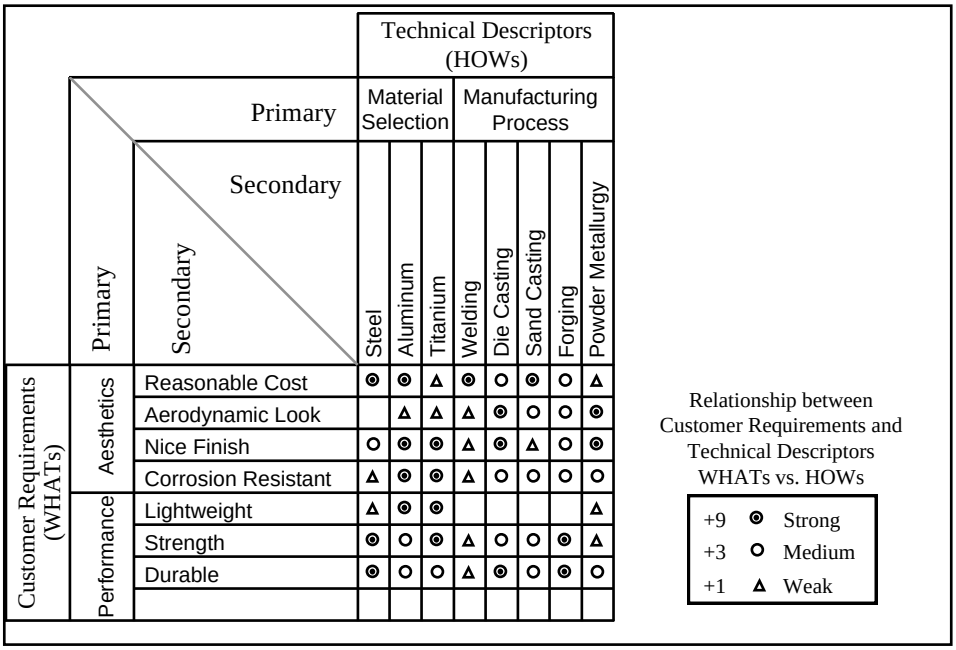

Figure 2.5 Adding Relationship Matrix to The House of Quality

2.3.4 Step 4—Develop an Interrelationship Matrix between HOWs

The roof of the house of quality, called the correlation matrix, is used to identify any interrelationships between each of the technical descriptors. The correlation matrix is a triangular table attached to the technical descriptors, as shown in Figure 2.6. Symbols are used to describe the strength of the interrelationships; for example,

A double circle represents a strong positive relationship.

A single circle represents a positive relationship.

A single X represents a negative relationship.

A double X represents a strong negative relationship.

The symbols describe the direction of the correlation. In other words, a strong positive interrelationship would be a nearly perfectly positive correlation. A strong negative interrelationship would be a nearly perfectly negative correlation. This diagram allows the user to identify which technical descriptors support one another and which are in conflict. Conflicting technical descriptors are extremely important because they are frequently the result of conflicting customer requirements and, consequently, represent points at which tradeoffs must be made. Tradeoffs that are not identified and resolved will often lead to unfulfilled requirements, engineering changes, increased costs, and poorer quality. Some of the tradeoffs may require high-level managerial decisions, because they cross functional area boundaries. Even though difficult, early resolution of tradeoffs is essential to shorten product development time.

An example of tradeoffs is in the design of a car, where the customer requirements of high fuel economy and safety yield technical descriptors that conflict. The added weight of stronger bumpers, air bags, antilock brakes, and the soon-to-come federal side-impact standards will ultimately reduce the fuel efficiency of the car. In the case of conflicting technical descriptors, Taguchi methods (see Chapter 14) can be implemented or pure common sense dictates.

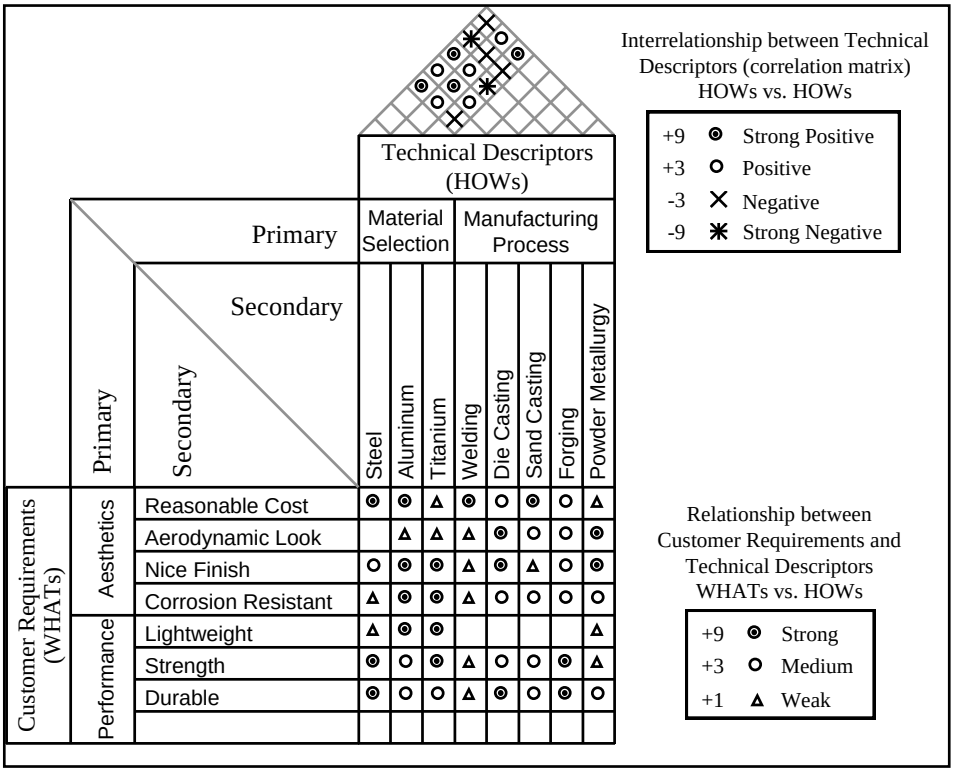

Figure 2.6 Adding interrelationship matrix to the house of quality

2.3.5 Step 5—Competitive Assessments

The competitive assessments are a pair of weighted tables (or graphs) that depict item for item how competitive products compare with current organization products. The customer competitive assessment makes up a block of columns corresponding to each customer requirement in the house of quality on the right side of the relationship matrix, as shown in Figure 2.7. The numbers 1 through 5 are listed in the competitive evaluation column to indicate a rating of 1 for worst and 5 for best. These rankings can also be plotted across from each customer requirement, using different symbols for each product.

The customer competitive assessment is a good way to determine if the customer requirements have been met and identify areas to concentrate on in the next design. The customer competitive assessment also contains an appraisal of where an organization stands relative to its major competitors in terms of each customer requirement. Both assessments are very important, because they give the organization an understanding on where its product stands in relationship to the market. The technical competitive assessment makes up a block of rows

corresponding to each technical descriptor in the house of quality beneath the relationship matrix, as shown in Figure 2.7.

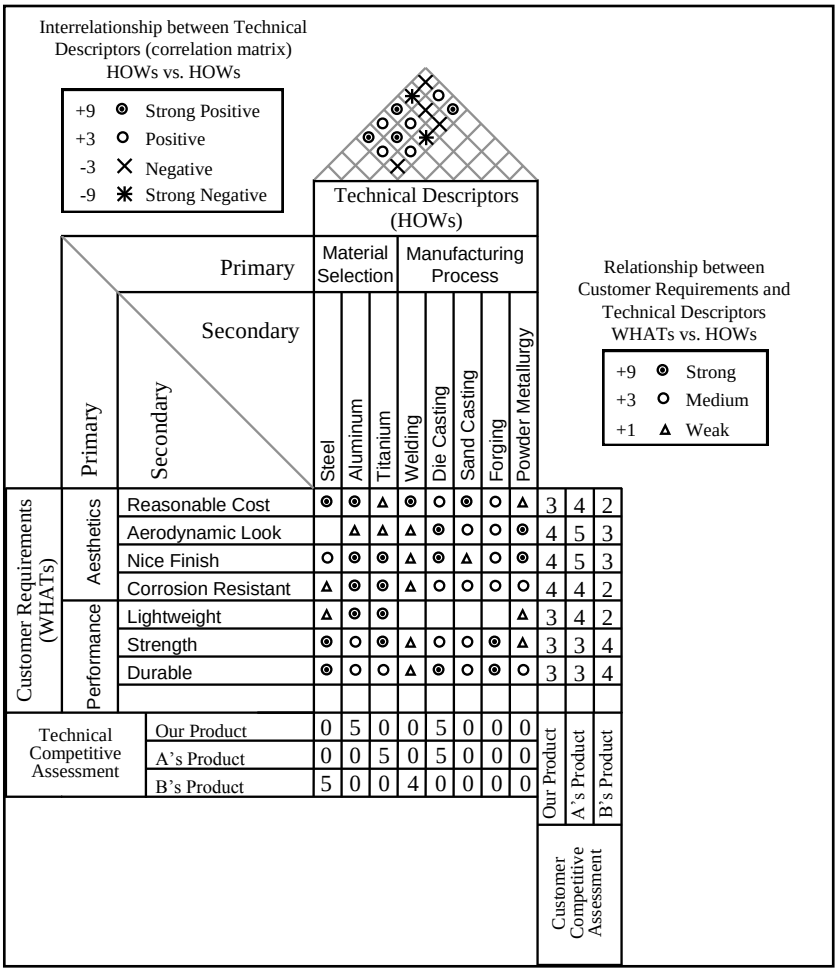

Figure 2.7 Adding technical competitive assessment to the house of quality

After respective units have been established, the products are evaluated for each technical descriptor. Similar to the customer competitive assessment, the test data are converted to the numbers 1 through 5 which are listed in the competitive evaluation row to indicate a rating, 1 for worst and 5 for best. These rankings can then be entered below each technical descriptor using the same numbers as used in the customer competitive assessment. The technical competitive assessment is often useful in uncovering gaps in engineering judgment. When a technical descriptor directly relates to a customer requirement, a comparison is made between the customer's competitive evaluation and the objective measure ranking.

Customer requirements and technical descriptors that are strongly related should also exhibit a strong relationship in their competitive assessments. If an organization's technical assessment shows its product to be superior to the competition, then the customer assessment should show a superior assessment. If the customer disagrees, then a mistake in engineering judgment has occurred and should be corrected.

2.3.6 Step 6—Develop Prioritized Customer Requirements

The prioritized customer requirements make up a block of columns corresponding to each customer requirement in the house of quality on the right side of the customer competitive assessment as shown in Figure 2.8. These prioritized customer requirements contain columns for importance to customer, target value, scale-up factor, sales point, and an absolute weight.

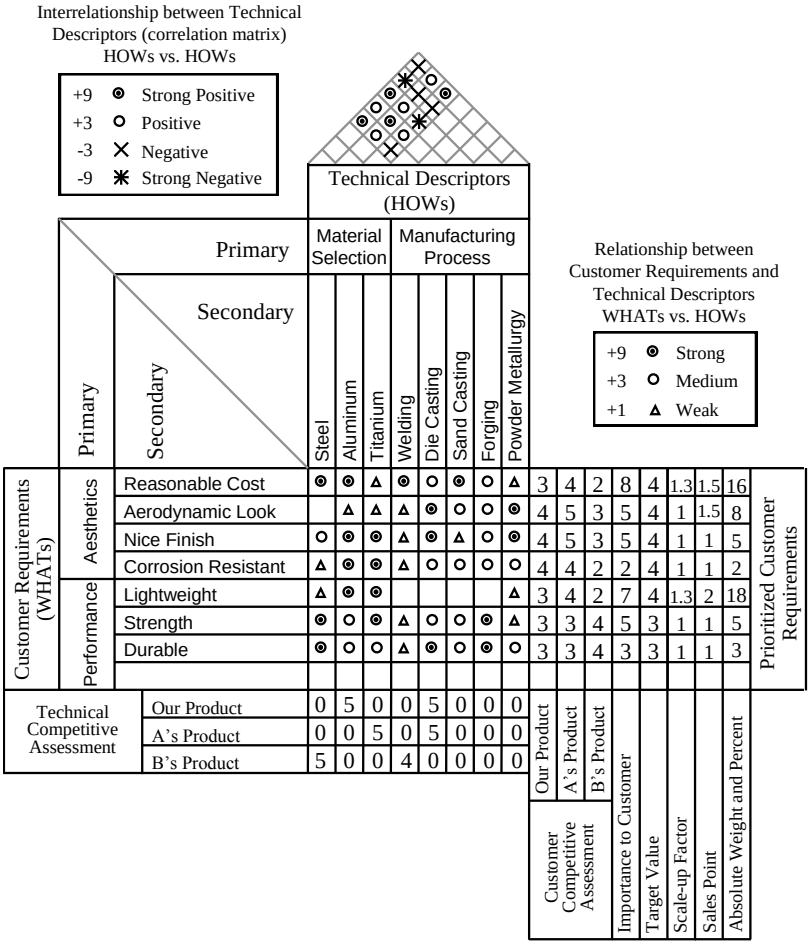

Figure 2.8 Adding prioritized customer requirements to the house of quality

Importance ratings represent the relative importance of each customer requirement in terms of each other. Assigning ratings to customer requirements is sometimes difficult, because each member of the QFD team might believe different requirements should be ranked higher. The importance rating is useful for prioritizing efforts and making trade-off decisions.

The target-value column is on the same scale as the customer competitive assessment (1 for worst, 5 for best can be used). This column is where the QFD team decides whether they want to keep their product unchanged, improve the product, or make the product better than the competition.

The scale-up factor is the ratio of the target value to the product rating given in the customer competitive assessment. The higher the number, the more effort is needed. Here, the important consideration is the level the product is at now and what the target rating is and deciding whether the difference is within reason. Sometimes there is not a choice because of difficulties in accomplishing the target. Consequently, the target ratings often need to be reduced to more realistic values.

Finally, the absolute weight is calculated by multiplying the importance to customer, scale-up factor, and sales point:

Absolute Weight = (Importance to Customer)(Scale-up Factor)(Sales Point)

A sample calculation is included in Figure 2.8. After summing all the absolute weights, a percent and rank for each customer requirement can be determined. The weight can then be used as a guide for the planning phase of the product development.

2.3.7 Step 7—Develop Prioritized Technical Descriptors

The prioritized technical descriptors make up a block of rows corresponding to each technical descriptor in the house of quality below the technical competitive assessment. These prioritized technical descriptors contain degree of technical difficulty, target value, and absolute and relative weights. The QFD team identifies technical descriptors that are most needed to fulfill customer requirements and need improvement. These measures provide specific objectives

that guide the subsequent design and provide a means of objectively assessing progress and minimizing subjective opinions.

2.3.8 Degree of Difficulty

Many users of the house of quality add the degree of technical difficulty for implementing each technical descriptor, which is expressed in the first row of the prioritized technical descriptors. The degree of technical difficulty, when used, helps to evaluate the ability to implement certain quality improvements.

A target value for each technical descriptor is also included below the degree of technical difficulty. This is an objective measure which defines values that must be obtained to achieve the technical descriptor. How much it takes to meet or exceed the customer's expectations is answered by evaluating all the information entered into the house of quality and selecting target values.

2.3.9 Absolute Weight and Percent

The last two rows of the prioritized technical descriptors are the absolute weight and relative weight. A popular and easy method for determining the weights is to assign numerical values to symbols in the relationship matrix symbols, as shown previously. The absolute weight for the *j*th technical descriptor is then given by

$$a_j = \sum_{i=1}^{n} R_{ij}\, c_i$$

where a_j = row vector of absolute weights for the technical descriptors ($j = 1,..., m$)

R_{ij} = weights assigned to the relationship matrix ($i = 1 ,..., n$, $j = 1,..., m$)

c_i = column vector of importance to customer for the customer requirements ($i = 1,..., n$)

m = number of technical descriptors

n = number of customer requirements

2.3.10 Relative Weight and Percent

In a similar manner, the relative weight for the *j*th technical descriptor is then given by replacing the degree of importance for the customer requirements with the absolute weight for customer requirements. It is

$$b_j = \sum_{i=1}^{n} R_{ij}\, d_i$$

where b_j = row vector of relative weights for the technical descriptors ($j = 1,..., m$)

d_i = column vector of absolute weights for the customer requirements ($i = 1,..., n$)

Higher absolute and relative ratings identify areas where engineering efforts need to be concentrated. The primary difference between these weights is that the relative weight also includes information on customer scale-up factor and sales point.

These weights show the impact of the technical characteristics on the customer requirements. They can be organized into a Pareto diagram to show which technical characteristics are important in meeting customer requirements. Along with the degree of technical difficulty, decisions can be made concerning where to allocate resources for quality improvement. Each QFD team can customize the house of quality to suit their particular needs. For example, columns for the number of service complaints may be added.

2.4. Islamic Approach

Halal is the dietary laws for Muslims. Being Islam is second largest religion of the world Halal products and International halal food trade increased to worth approximately $150 billions (Egan, 2002). Now-a-days with increase in the population demand for Halal food also increases putting a responsibility upon the government, Jurisprudents, and companies to ensure the product for certification of Halal. Hence, the food industry needs to understand the requirements for producing products for Muslim markets. It also needs to understand the import

requirements of countries with Muslim populations, which cover religious as well as safety aspects of imported food (Khattak, et. al, 2011).

Because Islamic values comprise religious values, cultural values, and universal values and ensure a balanced synthesis of both the material and the spiritual dimensions of life through maximizing of the welfare (Al Quran, 30:39) of the world and the world hereafter and establish brotherhood (Al Quran, 23:53,49:10; Al Hadith-622,626) and socio economic justice (6:152; Al Hadith-870) truthfulness, trust and sincerity through mutual consultation in all aspects of life. In Islam, all activities and transactions—production, distribution, consumption and exchange—are considered as worship (Ibadah) and subject to the constraints of Halal and Haram as laid down by Islamic Shariah (Sharif, 1996).

In Islam a marketer is expected to perform roles for seeking the pleasure of Allah and every aspects of marketing activities must conform under the guidelines of the Holy Quran and the Hadith (Binti Abdullah 2000).Target of Islamic Marketing System is to maximize the satisfaction of consumers as well as that of whole mankind and to ensure proper exercise of human values, marketing culture, Islamic rules and regulations as because Islam envisages a consumer oriented marketing culture which ensures human wellbeing and sanctified life. In this study it has been tried to focus Marketing from Islamic perspective (Alom, 2011).

2.5 Preliminary Study

The Pineapple is named for its resemblance to the Pine Cone. This fruit is much liked and popular in all over the world. It belongs to Bromeliaceae family and is the most economically significant plant. It may be cultivated or flowered in 20-24 months while fruiting in the following six months. Pineapples are consumed or served fresh, cooked, juiced and can be preserved. in 2009, an estimated ranking list of top ten largest producers of pineapple was prepared by the Food and Agriculture Organization as in Table 2.1.

Table 2.1 Ranking List of Top Ten Largest Producers of Pineapple

Rank	Country	Production (Thousand Metric Tones)
1	Philippines	2198
2	Thailand	1894
3	Costa Rica	1870
4	Indonesia	1558
5	Chile	1477
6	Brazil	1471
7	India	1341
8	Nigeria	898
9	Mexico	685
10	Vietnam	460

http://www.whichcountry.co/top-10-pineapple-producing-countries-in-the-world/#sthash.ueaKXgF4.dpuf

Based on 2011 production data pineapple, pineapple production center in Indonesia in Figure 2.1, there are five (5) provinces: Lampung (with a contribution of 32.80% of the national production of pineapple), West Java (20.45%), North Sumatra (11.89 %), Riau (7.10%) and Central Java (6.03%). The five provinces contribute cumulatively amounted to 78.27% of the total Indonesian pineapple production (BPSID, 2013).

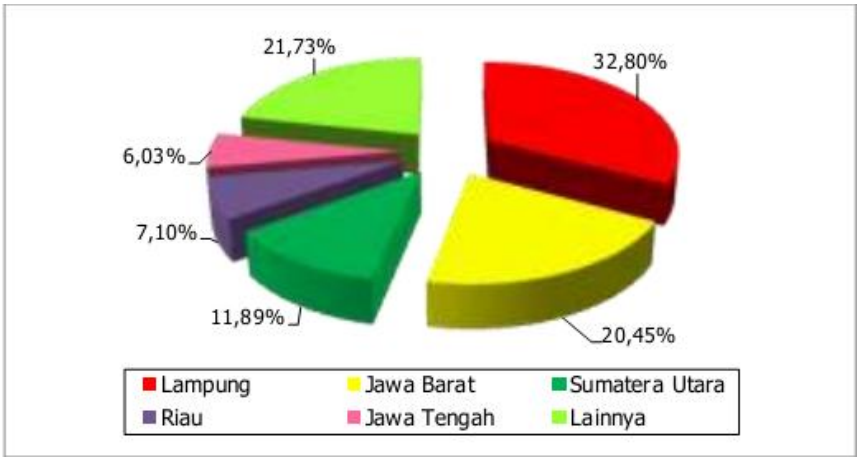

Figure.2.9 Production Data Pineapple in Indonesia

Potential pineapple plantation in the one of district in Pekanbaru City, Riau Province reached 1,550 hectares, approximately 4.3 million trees, with a total production peak at 2,150 tons per year. Of these approximately 1,050 hectares located in the village of Kualu Nenas, with a total production reached 1,456 tons per year or 121 tons per month (Bisnis.com, 2013).

Pineapple is now the third most important commercial tropical fruit crop in the world. The processing of pineapple has made the fruit well known even in the temperate parts of the world. Early commercial trade was limited to relatively short transportation routes due to the short shelf life of fresh pineapple. Jams and sweets were the first commercial products made from pineapples (The`vet, 1557; Acosta, 1590; Loudon, 1822). In the early 19th century, fresh pineapples were sent from the West Indies to Europe attached to the entire plant (Loudon, 1822). Commercialization in the mid-19th century developed based on the shortest trade routes. A retired sailor first canned pineapples in Malaya in 1888. Export from Singapore soon followed with shipments reaching half a million cases by 1900. In Hawaii, a machine that could peel and core pineapples automatically was invented and refined between 1911 and 1919 that allowed large-scale economically viable canning industry in Hawaii. Similar canning operations started in Taiwan, Philippines, Australia, South Africa, the Caribbean and Kenya. The industry grew and flourished. However, World War II ruined the South-East Asian industry and destroyed international trade in the region for three and a half years during World War II. Hawaii gained supremacy but other competitors soon followed. The Malaysian Pineapple Industry Board was established in 1959 with steady progress thereafter (Morton, 1987). After World War II, refrigerated sea transport developed that reduced the need for proximity to the market and as a result the fresh-fruit market started expanding. Today the canned-product market remains very important but the value of the international fresh-fruit market is rapidly increasing.

Based on the statistics (Anon., 2002) collected by Food and Agriculture Organization (FAO) of United Nations, mean pineapple production for 1999-2001 was 13,527,149 metric tones (t) and was approximately constant for the 3 years. World production has more than tripled during the past 30 years (3,833,137 t in

1961 to 13,738,735 t in 2001). The leading pineapple producing countries in 2001 are Thailand (2,300,000 t), Philippines (1,571,904 t), Brazil (1,442,300 t), China (1,284,000 t), India (1,100,000) and Nigeria (881,000 t). Australia produced 140,000 t of pineapples in 2001. Australia markets canned and fresh fruit almost exclusively within the country (Rohrbach et. al, 2003; GTR, 2003).

World trade in pineapple mainly consists of processed products. World exports of canned pineapple doubled between 1983 and 1992 passing 1 million tones (t) and representing a value of more than US$600 million (Rohrbach et al, 2003). The leading countries are Thailand (315,000 t), the Philippines (209,000 t), Indonesia (95,000 t), Kenya (84,000 t) and Malaysia (44,000 t). The international fresh-pineapple market (about 670,000 t) is dominated by Costa Rica, the Philippines and the Cote d`Ivoire. The chilled fresh-cut fruit pineapple packed as spears or chunks in sealed plastic bags for retail sale is a relatively new product. Commercialization of this process will depend on the costs versus benefits of high-pressure processing equipment (Rohrbach et al, 2003; GTR, 2003).

Chapter 3
Research Methodology

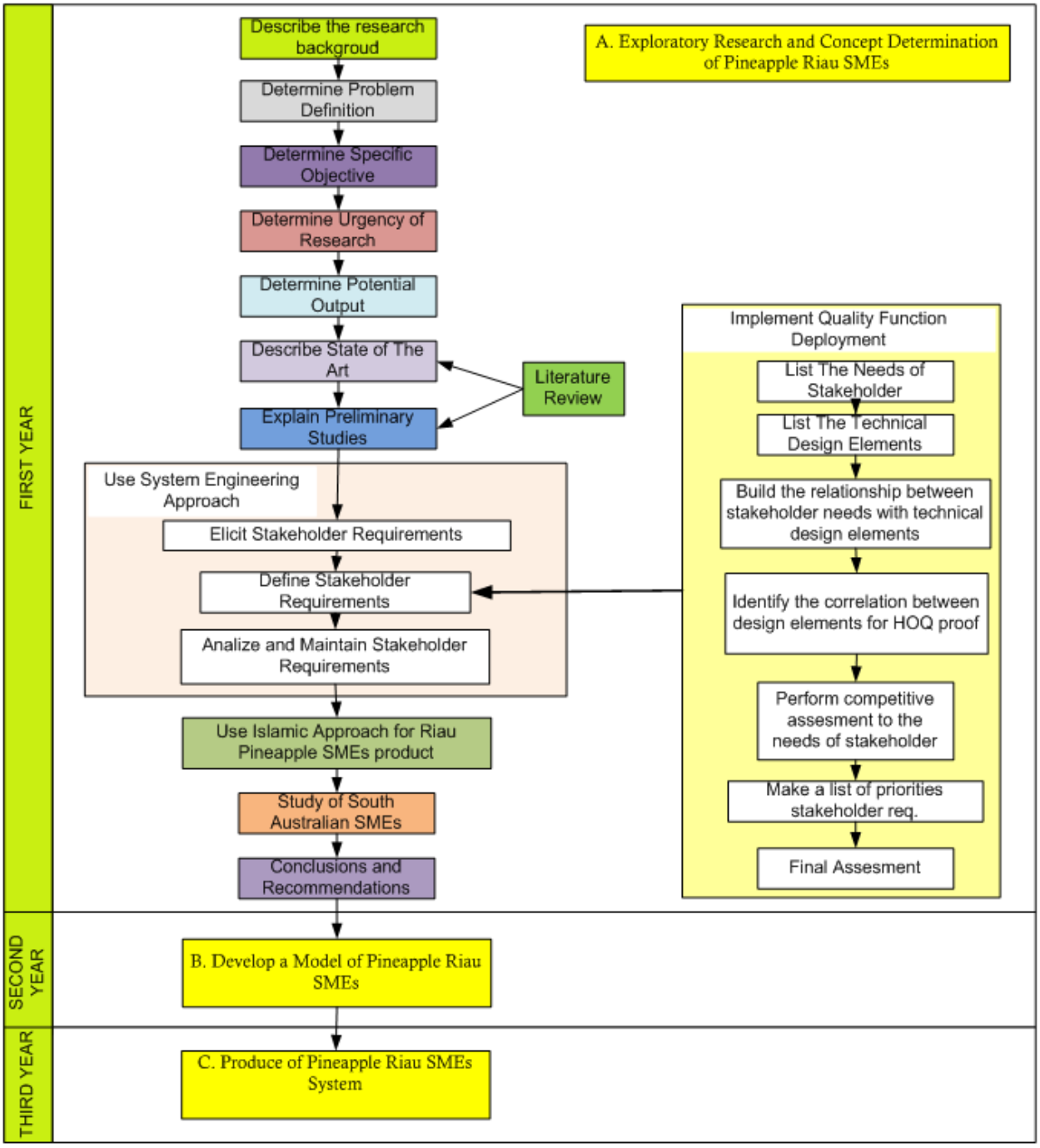

Figure 3.1 Research Methodology Flowchart

This research methodology flowchart explains the multi-year research project for Riau pineapple Small and Medium Enterprises (SMEs). The research will be carried out from year 1 to year 3 which consists of:

- Year 1: Exploratory research and concept determination of pineapple Riau SMEs (The system definition stage)
- Year 2: Develop a model of pineapple Riau SMEs (The system development stage)
- Year 3: Produce of pineapple Riau SMEs (The system production stage)

A. Year -1 Research

Explanation of year-1 research can be seen in section 3.1 to section 3.8.

3.1 Introduction

Describe the research background, determine problem definition, determine specific objective, and determine urgency of research. Determine potential output that will be obtained at the end of the research project.

3.2 Literature Review

Decribes state of the art is discovering the "state of the art" is one of the most important concepts in scientific and technical research. Merriam Webster defines "state of the art" as "the level of development (as of a device, procedure, process, technique, or science) reached at any particular time usually as a result of modern methods." Explain preliminary studies related to the proposed project

3.3 Elicit Stakeholders Requirements

Elicit stakeholders requirements consist of:

1. Identify stakeholders who will have an interest in the system throughout its entire life cycle.
2. Elicit requirements what the system must accomplish and how well.

3.4 Define Stakeholders Requirements

The way to define stakeholders requirements are:

1. Define constraints imposed by agreements or interfaces with legacy enabling systems.

2. Build scenarios to define the concept documents; the range of anticipated uses of system products; the intended operational environment; and interfacing systems, platforms, or products. Scenarios help identify requirements that might otherwise be overlooked. Social and organizational influences also emerge from using scenarios
3. Establish critical and desired system performance – thresholds and objectives for system performance parameters that are critical for system success and those that are desired but may be subject to compromise to meet the critical parameters. In this section we use Quality Function Deployment approach.

   Here are the steps that need to be implemented to implement QFD:

a. List the needs of customers or users
b. List the technical design elements
c. Build the relationship between customer needs with technical design elements
d. Identify the correlation between design elements for HOQ roof.
e. Perform competitive assessment to the needs of customers or users
f. Make a list of priorities (target) user requirements
g. Make a list of priorities (target) needs are technical
h. Final assessment

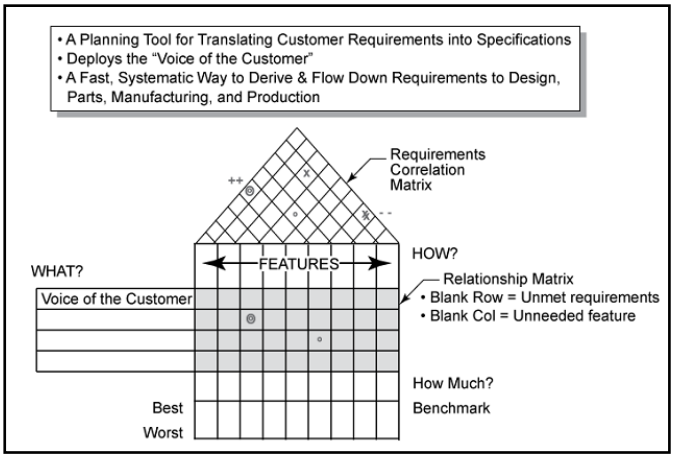

Figure 3.2 QFD-House of Quality (HOQ)

3.5 Islamic Approach

Islam attempts to synthesize reason and revelation, knowledge and values, in its approach to the study of nature. Knowledge acquired through rational

human efforts and through the Qur'an are seen as complementary: both are 'signs of God' that enable humanity to study and understand nature. Islam also placed great emphasis on scientific methodology, giving importance to systematic observation, experimentation and theory building.

Initially, scientific inquiry was directed by everyday practices of Islam. Recently, Muslim scholars have started to develop a contemporary Islamic philosophy of science by combining such basic Islamic concepts as 'ilm (knowledge), khilafa (trusteeship of nature) and istisla (public interest) in an integrated science policy framework. Because of that, Islamic approach was to be used to improve capability of pineapple Riau SMEs.

3.6 Study of South Australian SMEs

As a developing country, Indonesia has to study about the Australian SMEs and how to develop Australian SMEs in effectively acquiring and applying system engineering process. Thereby pineapple Riau SMEs can improve their system capability. The primary benefit of doing systems engineering is that it will reduce the risk of schedule and cost overruns and will provide a system of higher integrity. One of the members of International Council on System Engineering (INCOSE) is Dr. Timothy L.J. Ferris. He is a senior lecturer in University of South Australia. We have received Letter of Agreement for collaborative research to study more about Australian SMEs using system engineering.

3.7 Conclusions and Recommendations

This research will give conclusions and recommendation for the improvement capability of Riau pineapple SMEs.

B. **Year-2 Research**: Develop a model of pineapple Riau SMEs (The system development stage).

The stage begins when the key stakeholders decide that the system development elements and feasibility evidence are sufficiently low-risk to justify committing the resources necessary to develop and sustain the initial operational capability (IOC) or the single-pass development of the full operational capability

(FOC). Activities include: construction of the developmental elements; integration of these with each other and with the non-developmental item (NDI) elements; verification and validation (V&V) of the elements and their integration as it proceeds; and preparing for the concurrent production, support, and utilization activities.

C. **Year-3 Research**: Produce of pineapple Riau SMEs (The system production stage)

The stage begins when the key stakeholders decide that the system life-cycle feasibility and safety illustrate a sufficiently low-risk level that justifies committing the resources necessary to produce, field, support, and utilize the system over its expected lifetime. The lifetimes of production, support, and utilization are likely to be different. Aftermarket support will generally continue after production is complete and users will often continue to use unsupported systems.

System Production involves the fabrication of system copies or versions and of associated aftermarket spare parts. It also includes production quality monitoring and improvement; product or service acceptance activities; and continuous production process improvement. It may include low-rate initial production (LRIP) to mature the production process or to promote the continued preservation of the production capability for future spikes in demand.

Chapter 4
Data Collection and House of Quality (HOQ)

4.1 Problems Faced in Riau Pineapple SMEs

Small and Medium Enterprise (SME) is one of the most important elements in economy sector in Indonesia. This is due to the characteristics of SME which are flexible, operate on small scale, and relatively small investment. Moreover, SME also contributes most to the Growth Domestic Product (GDP) of Indonesia among other business forms. According to the statistics of *Kementrian Koperasi dan Usaha Kecil Menengah* (Ministry of Cooperative and Small Medium Enterprises), SME contributes Rp 3.466.393.30 of total GDP

For a developing nations, where the labor is abundant and capital is scarce, the small sector is a major source of employment for millions of people. Indonesia is one of the developing country, and many people work in small and micro enterprises. The Figure 4.1 below shows the data from of the workforce absorbed by micro and small enterprise (not including medium scale enterprise) from 2010 to 2013.

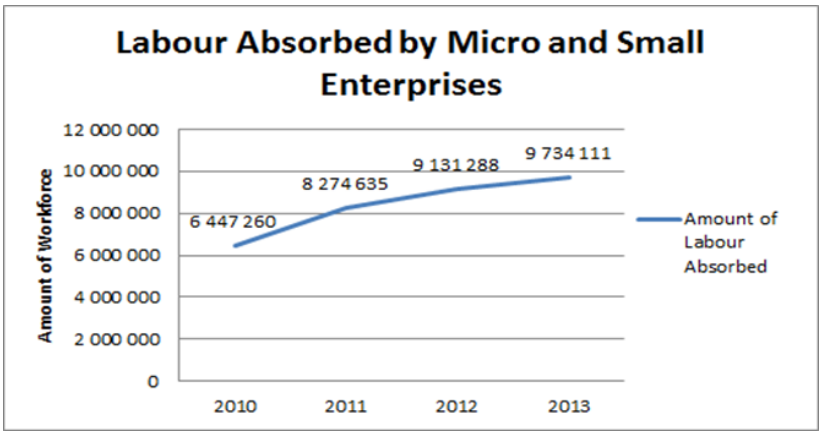

Figure 4.1 Amount of Workforce in Micro and Small Enterprise from 2010 until 2013 in Indonesia (Source: BPS. 2014)

Potential pineapple plantation in the one of district in Pekanbaru City, Riau Province reached 1,550 hectares, approximately 4.3 million trees, with a total production peak at 2,150 tons per year. Of these approximately 1,050

hectares located in the village of Kualu Nenas, with a total production reached 1,456 tons per year or 121 tons per month (Bisnis.com, 2013).

There are many pineapple SMEs that we met in Riau province, such as chips pineapple chips and "dodol nenas". The location in Riau Province which produce pineapple chips and *dodol nenas* are- Kampar, Dumai, Bengkalis and Siak.

Table 4.1 Pineapple Production Location of Riau Pineapple

No	Kabupaten	Produksi (Ton)	Share Provinsi (%)
1	Kota Dumai	6.792	34,24
2	Kampar	6.173	31,12
3	Siak	2.933	14,79
4	Indragiri Hilir	2.262	11,40
5	Bengkalis	897	4,52
6	Lainnya	780	3,93
Riau		**19.837**	**100,00**

Sumber : Dinas Pertanian Riau, diolah Pusdatin

4.1.1 Pineapple Chips and "Dodol Nenas" in Kampar

There are many of pineapple chips SMEs in Kampar, such as Usaha Baru Ibu, Aroma Rasa, Dua Saudara dan Sampurna. This SMEs produces unique and innovative snacks made from farm commodities, namely "Keripik Nenas" (Pineapple Chips), "Keripik Nangka" and Dodol Nenas. According to Mrs Ros, the owner of Aroma Rasa's SMEs, and Mrs Dasmi, the employee of Usaha Baru Ibu's SMEs, pineapple is the most popular products and has many people interested in the product. The best product from pineapple that has high customer demand is keripik nenas (pineapple chips). The Problem that we find in this SMEs especially for marketing is the packaging of pineapple chips.

Beside that, other problems that we find are energy, capital, raw material, machine, price of supporting material and market. The number of pineapple chips entrepreneurs in the Tambang district is approximately 12 SMEs, all of them are household-scale industry. The existence of this cluster is supported by the presence of mining districts condition itself which is a regional centre for the cultivation of pineapple, pineapple with a land area of 700 hectares and consists of

4.3 million trees with a production rate of 9,000 tons/year. Sentra businessman pineapple chips has operate for twelve (12) years, and the project is focused on capacity building activities, especially entrepreneurs who produce pineapple chips.

Besides high cost of production, other problems encountered in business pineapple chips in the Tambang district are:

1. The lack of synergy among SME entrepreneur pineapple chips. If the synergies between craftsmen created, can undoubtedly bring progress to this center such as: purchase of raw materials / auxiliary together to reduce the cost of production, marketing together, etc.
2. Most (over 70%) production centers pineapple chips were purchased by one (1) large merchants of the city of Pekanbaru, then by the big traders repackaged and sold by wholesalers such branding. As a result, the added value of the products pineapple chips are not enjoyed by craftsmen but by traders.
3. Development of a fresh pineapple in the center / cluster is still limited to just pineapple chips product, which actually could be developed pineapple applied to some products such as nata de vina, pineapple jam, pineapple syrup, etc. Also the utilization of residual production yet (by product) over the pineapple chips, which can also provide economic benefits to the artisans.

Figure 4.2 Usaha Baru Ibu SMEs
(Mrs. Dasmi and Mrs. Merry with the Plastic Packaging of Pineapple Chips)

One of model package in Kualu Nenas's pineapple chips is using a plastic package as in Figure 4.3. The material of this packaging is mainly made from

plastic rather hard and chewy. If the customer takes these chips, the chips rest will not fresh anymore because of packaging do not use the strips or glue.

Figure 4.3 The Packaging of "Usaha Baru Ibu" Pineapple Chips

Besides plastic package, there is another type of package. The pineapple package use plastic and box for covering the chips, see Figure 4.4 and Figure 4.5.

Figure 4.4 The Box Packaging of "Aroma Rasa" Pineapple Chips

Figure 4.5 Aroma Rasa SMEs
(Mrs. Dewi, Mrs Merry, Mr. Reski and Mr. Eki with the packaging of keripik nenas)

Figure 4.6 The Packaging of "Sampurna" Pineapple Chips

If we compare with pineapple chips in Malang the packaging of pineapple chips in Kualu Nenas is stil not ergonomic. Although Kualu Nenas is a strategic location and can be one of potential souvenirs centre in Riau province. All the vehicle from Riau and West Sumatra will pass this location.

4.1.2 Pineapple Chips and Dodol Nenas in Dumai

One of pineapple chips SMEs in Dumai is Kemuning This SMEs produces unique and innovative snacks made from farm commodities, namely Dodol Nenas. According to Mrs Rosnah, the owner of Kemuning's SMEs the problem that we find in this SMEs especially for marketing is the packaging of dodol nenas. Beside that, other problems that we find is the equipment materials for dodol nenas production are manual.

Figure 4.7 The production of Dodol nenas in Kemuning's SMEs in Mundam Village, Dumai, Riau province

The packaging of dodol nenas still use very simple plastic package, do not use Halal Label, do not uses "Dinkes" label, production number, best before label and etc. As we seen in Figure 4.7, the production of dodol nenas still uses manual equipment like "kuali", "sendok kayu and "tungku kayu". The work design still use unergonomic work method. The operator always standing while dodol nenas, while for aout six hours, the women always stir the long spoon to make dodol nenas become elastis. One of dodol nenas small industry that we find in Dumai is "Kelompok usaha Dodol Nenas Kemuning" in Figure 4.8. Kemuning has ten

women who participate in Kemuning small industry. They say that the primary problem which has to solve is dodol nenas market.

Figure 4.8 The owner of Kemuning's SMEs in Mundam Village

The government has made "Pusat Oleh-oleh & Kerajinan Tangan" for Mundam village, but untill now the shop is still empty as Figure 4.9. This situation indicated that marketing problem still be a primary problem that met by dodol nenas small and industry enterpreneur.

Figure 4.9 The Empty Souvenir's Shop

4.1.3 Pineapple chips and dodol nenas in Bengkalis

The only one of pineapple chips SMEs in Bengkalis is Kemas SMEs. This SMEs produces Dodol Nenas, Dodol durian, dodol buah naga, and dodol kelapa. According the owner of Kemas's SMEs the problem that we find in this SMEs especially for marketing is the market of dodol nenas. Beside that, other problems that we find are energy, capital, raw material, machine, price of supporting material and market.

The problems in Bengkalis small industries are how to market their product, how to compete with others similar product from Siak n Dumai city. Besides marketing, Bengkalis has only one small industry that produce dodol nenas, its name "KEMAS" which has mini production machine for making dodol nenas in Figure 4.10. This 'Kemas" also produce another dodol loke dodol duria, dodol kepala, dodol labu, dodol buah naga dan lempuk nenas in Figure 4.11.

Figure 4.10 The production location of dodol nenas in Kemas's SMEs

Figure 4.11 The production location of dodol nenas in Kemas's SMEs

4.1.4 Packaging in Marketing of Keripik Nenas

However, even if the packaging has meet all the standard it is still not enough to get attention from the customers. The packaging is a core marketing tool for products and it performs the role of communication. It also serves as a silent salesman, which will get customers attention and increase the intention of buying as the customers pass by. Therefore, the packaging is one of the most important marketing tools to attract customers.

The packaging of the Keripik Nenas is still far from ideal. In order to see how the customers look at the product, a preliminary survey was conducted to 21 people by spreading questionnaire. Those people are students, employees and housewives who often go to the supermarkets and buy food products, male and female with age ranging from 18 to 28. These respondents have the same characteristics with the target customers of Keripik Nenas.

Packaging is defined as the element of marketing mix whose functions fundamentally hinges on serving the interest of the entire marketing forces through the media of the "manufacturer", "intermediaries" and the "consumer". It includes all the activities of designing and producing the container for a product. Most marketers consider packaging as a key element of product strategy and the fifth P, along with price, product, place and promotion. Packaging is a core marketing tool for products and it performs the role of communication.

The basic purposes of packaging are to:

1. Protect and contain.

   A packaging must protect its contents from damage during storage, transport and usage.

2. Offer convecience.

   The pack must offer convenience in pouring, squeezing, storing, stacking and consuming.

3. Communicate.

   The communication functions are mainly to grab customers' attention, persuade the viewer that the contents match the promise made, build brand personality, instruct user about how to use the product, and inform user of mandatory requirements.

4.2 Quality Function Deployment (QFD)

Quality Function Deployment (QFD) is a structured, multi-disciplinary technique for product definition that maximizes value to the customer. The application of the QFD process is an art that varies somewhat from practitioner to practitioner, but the graphic on the next page illustrates a typical application of the QFD process. The graphic shows a concept called the QFD House of Quality (HOQ), a device for organizing the flow of thinking and discussion that leads to finished product specifications. The House of Quality is built by a firm's own multi-disciplinary team under guidance from a trained QFD facilitator (preferably a facilitator with both marketing and technical experience).

4.2.1 Building House of Quality (HOQ)

In this research, there are three kinds of House of Quality that will be show to improve the capability of pineapple SMEs in Riau Province.

1. House of Quality of pineapple chips
2. House of Quality of “dodol nenas”

4.2.1.1 Step 1—List Customer Requirements (WHATs) Pineapple Chips

Quality function deployment starts with a list of goals/objectives. This list is often referred as the WHATs that a customer needs or expects in a pineapple chips. This list of primary customer requirements is usually vague and very general in nature. Further definition is accomplished by defining a new, more detailed list of secondary customer requirements required to support the primary customer requirements. In other words, a primary customer requirement may encompass numerous secondary customer requirements. Although the items on the list of secondary customer requirements represent greater detail than those on the list of primary customer requirements, they are often not directly actionable by the engineering staff and require yet further definition. List of pineapple chips customers that have interviewed can be seen in Appendix 2a and the graphic can be seen in Figure 4.12 and Figure 4.13.

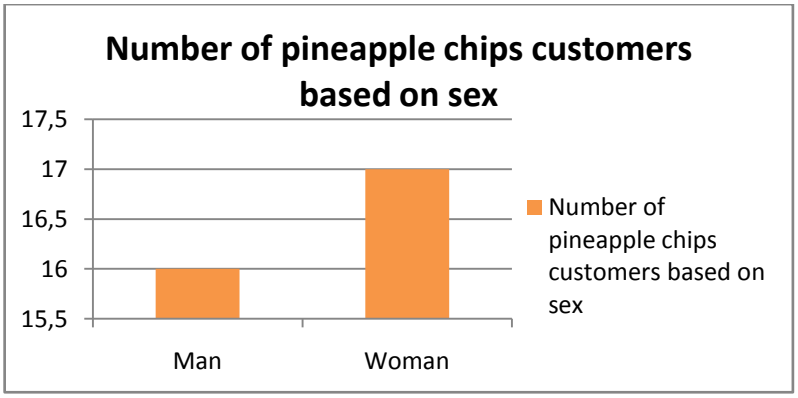

Figure 4.12 Number of Pineapple Chips Customers

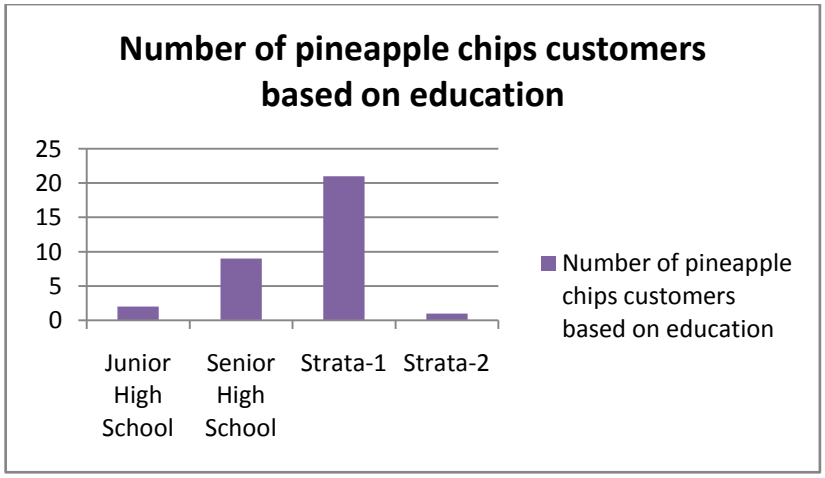

Figure 4.13 Number of Pineapple Chips Customers

Every customers would be asked by some question in Appendix 3 List of customer requirements of pineapple chips can be shown in Table 4.2.

4.2.1.2 Step 2—List Technical Descriptors (HOWs)

The goal of the house of quality is to design or change the design of a product in a way that meets or exceeds the customer expectations. Now that the customer needs and expectations have been expressed in terms of customer requirements, the QFD team must come up with engineering characteristics or technical descriptors (HOWS) that will affect one or more of the customer requirements. These technical descriptors make up the ceiling, or second floor, of the house of quality. Each engineering characteristic must directly affect a customer perception and be expressed in measurable terms.

Implementation of the customer requirements is difficult until they are translated into counterpart characteristics. Counterpart characteristics are an expression of the voice of the customer in technical language. Each of the customer requirements is broken down into the next level of detail by listing one or more primary technical descriptors for each of the tertiary customer requirements. This process is similar to refining marketing specifications into system-level engineering specifications. Finally, the list of technical descriptors of pineapple chips as shown in Table 4.3.

This level of detail is necessary because there is no way of ensuring successful realization of a technical descriptor that the engineering staff does not know how to accomplish. The process of refinement is further complicated by the fact that through each level of refinement, some technical descriptors affect more than one customer requirement and can even adversely affect one another. For example, a customer requirement for the taste of the chips are not too salty. Counterpart characteristics for the taste of the chips are not too salty could be taste of the product is delicious. Brainstorming among the engineering staff is a suggested method for determining the technical descriptors.

4.2.1.3 Step 3—Develop a Relationship Matrix between WHATs and HOWs

The next step in building a house of quality is to compare the customer requirements and technical descriptors and determine their respective relationships. Tracing the relationships between the customer requirements and the technical descriptors can become very confusing, because each customer requirement may affect more than one technical descriptor, and vice versa.

Relationship Matrix

The inside of the house of quality, called the relationship matrix, is now filled in by the QFD team. The relationship matrix is used to represent graphically the degree of influence between each technical descriptor and each customer requirement. This step may take a long time, because the number of evaluations is the product of the number of customer requirements and number of technical descriptors. Doing this early in the development process will shorten the development cycle and lessen the need for future changes.

It is common to use symbols to represent the degree of relationship between the customer requirements and technical descriptors. For example,

A double circle represents a strong relationship.

A single circle represents a medium relationship.

A triangle represents a weak relationship.

The box is left blank if no relationship exists.

The symbols that are used to define the relationships are now replaced with numbers; for example,

◎ = 9
○ = 3
△ = 1

It can become difficult to comprehend and interpret the matrix if too many symbols are used. Each degree of relationship between a customer requirement and a technical descriptor is defined by placing the respective symbol at the intersection of the customer requirement and technical descriptor of pineapple chips, as shown in Table 4.4. This method allows very complex relationships to be depicted and interpreted with very little experience. These weights will be used later in

determining trade-off situations for conflicting characteristics and determining an absolute weight at the bottom of the matrix.

After the relationship matrix has been completed, it is evaluated for empty rows or columns. An empty row indicates that a customer requirement is not being addressed by any of the technical descriptors. Thus, the customer expectation is not being met. Additional technical descriptors must be considered in order to satisfy that particular customer requirement. An empty column indicates that a particular technical descriptor does not affect any of the customer requirements and, after careful scrutiny, may be removed from the house of quality.

4.2.1.4 Step 4—Develop an Interrelationship Matrix between HOWs

The roof of the house of quality, called the correlation matrix, is used to identify any interrelationships between each of the technical descriptors. The correlation matrix is a triangular table attached to the technical descriptors of pineapple chips as shown in Table 4.5. Symbols are used to describe the strength of the interrelationships; for example,

(+) represents a correlation positive

(-) represents a correlation positive

4.2.1.5 Step 5—Competitive Assessments

The competitive assessments are a pair of weighted tables (or graphs) that depict item for item how competitive products compare with current organization products. The customer competitive assessment makes up a block of columns corresponding to each customer requirement in the house of quality on the right side of the relationship matrix, as shown in Figure 4.14. The numbers 1 through 5 are listed in the competitive evaluation column to indicate a rating of 1 for worst and 5 for best. These rankings can also be plotted across from South Australian pineapple chips, using different symbols for each product.

The customer competitive assessment is a good way to determine if the customer requirements have been met and identify areas to concentrate on in the next design. The customer competitive assessment also contains an appraisal of where an organization stands relative to its major competitors in terms of each customer requirement. Both assessments are very important, because they give the organization an understanding on where its product stands in relationship to the market.

The customer competitive assessment is constructed by assigning ratings for each customer requirement from 1 (worst) to 5 (best) for the pineapple chips in Kualu Nenas and pineapple chips in South Australia.

Target Value

The target-value column is on the same scale as the customer competitive assessment (1 for worst, 5 for best can be used). This column is where the QFD team decides whether they want to keep their product unchanged, improve the product, or make the product better than the competition.

Scale-up Factor

The scale-up factor is the ratio of the target value to the product rating given in the customer competitive assessment. The higher the number, the more effort is needed. Here, the important consideration is the level the product is at now and what the target rating is and deciding whether the difference is within reason. Sometimes there is not a choice because of difficulties in accomplishing the target. Consequently, the target ratings often need to be reduced to more realistic values.

4.2.1.6 Step 6-Absolute Weight and Percent

Finally, the absolute weight is calculated by multiplying the importance to customer, scale-up factor, and sales point:

Absolute Weight = (Importance to Customer)(Scale-up Factor)(Sales Point)

A calculation is included in Figure 4.3. After summing all the absolute weights, a percent and rank for each customer requirement can be determined. The weight can then be used as a guide for the planning phase of the product development.

4.2.1.7 Step 7—Develop Prioritized Technical Descriptors

The prioritized technical descriptors make up a block of rows corresponding to each technical descriptor in the house of quality below the technical competitive assessment, as shown in Table 4.5. These prioritized technical descriptors contain degree of technical difficulty, target value, and absolute and relative weights. The QFD team identifies technical descriptors that are most needed to fulfill customer requirements and need improvement. These

measures provide specific objectives that guide the subsequent design and provide a means of objectively assessing progress and minimizing subjective opinions.

Degree of Difficulty

Many users of the house of quality add the degree of technical difficulty for implementing each technical descriptor, which is expressed in the first row of the prioritized technical descriptors. The degree of technical difficulty, when used, helps to evaluate the ability to implement certain quality improvements. Based on Table 4.4, the very difficult targets are low price and the advertisement which is can see in colum 24 and 26.

Target Value

A target value for each technical descriptor is also included below the degree of technical difficulty. This is an objective measure which defines values that must be obtained to achieve the technical descriptor. How much it takes to meet or exceed the customer's expectations is answered by evaluating all the information entered into the house of quality and selecting target values. Based on the data in Table 4.3, every qulity characteristic have to have clear target value. Example dimension of packaging has target value as adjustable.

Absolute Weight and Percent

The last two rows of the prioritized technical descriptors are the absolute weight and relative weight. A popular and easy method for determining the weights is to assign numerical values to symbols in the relationship matrix symbols, as shown previously in Table 4.4.

Relative Weight and Percent

In a similar manner, the relative weight for the *j*th technical descriptor is then given by replacing the degree of importance for the customer requirements with the absolute weight for customer requirements.

Higher absolute and relative ratings identify areas where engineering efforts need to be concentrated. The primary difference between these weights is

that the relative weight also includes information on customer scale-up factor and sales point. These weights show the impact of the technical characteristics on the customer requirements. They can be organized into a Pareto diagram to show which technical characteristics are important in meeting customer requirements. Along with the degree of technical difficulty, decisions can be made concerning where to allocate resources for quality improvement. Based on House of Quality in Table 4.4, the 3 top ranking for percentage are the taste of pineapple chips (9.13%), Printed out of packaging (7.97%) and the advertisement (6.91%).

4.2.2.1 List Customer Requirements (WHATs) Dodol Nenas

List of dodol nenas customers that have interviewed can be seen in Appendix 2b and the graphic can be seen in Figure 4.14, Figure 4.15 and Figure 4.16.

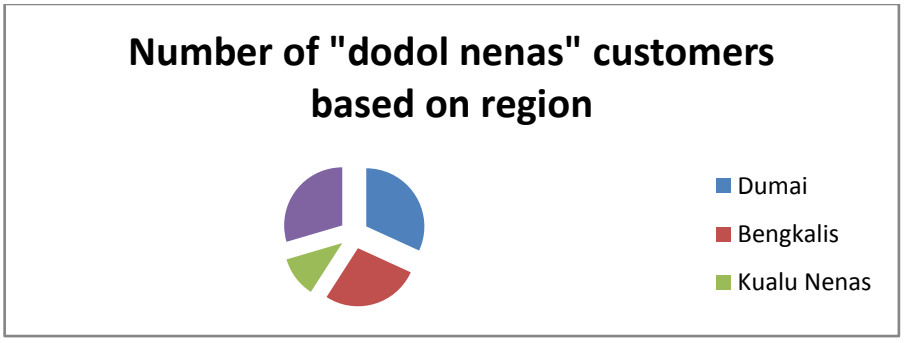

Figure 4.14 Number of Dodol Nenas Customers based on region

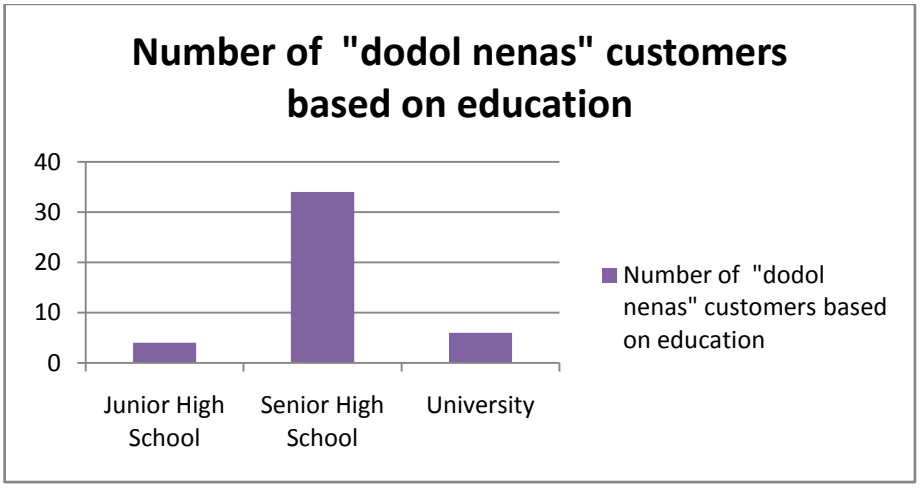

Figure 4.15 Number of Pineapple Chips Customers based on Education

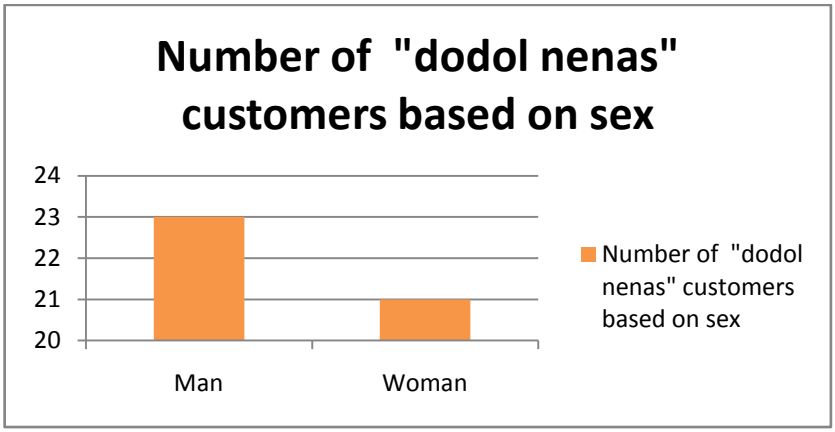

Figure 4.16 Number of Pineapple Chips Customers based on Education

Every customers would be asked by some question in Appendix 3 List of customer requirements of dodol nenas can be shown in Table 4.6.

4.2.2.2 Step 3—Develop a Relationship Matrix between WHATs and HOWs

The next step in building a house of quality is to compare the customer requirements of dodol nenas and technical descriptors and determine their respective relationships in Table 4.7. Tracing the relationships between the customer requirements and the technical descriptors can become very confusing, because each customer requirement may affect more than one technical descriptor, and vice versa.

House of Quality of Dodol Nenas can be seen in Table 4.8 and the competitive analysis between Dodol nenas and South Australian food can be seen in Figure 4.17.

Chapter 5
Discussion

5.1 Islamic Approach to Improve Riau Pineapple SMEs Capability

5.1.1 Halal Logistic

In line with the research objective, this conceptual study incorporates *ḥalāl* logistics with the marketing mix theory. Figure 1 depicts the *ḥalāl* logistics' seven marketing mix and its sub-elements. The following section explains the *ḥalāl* logistics marketing mix in greater detail.

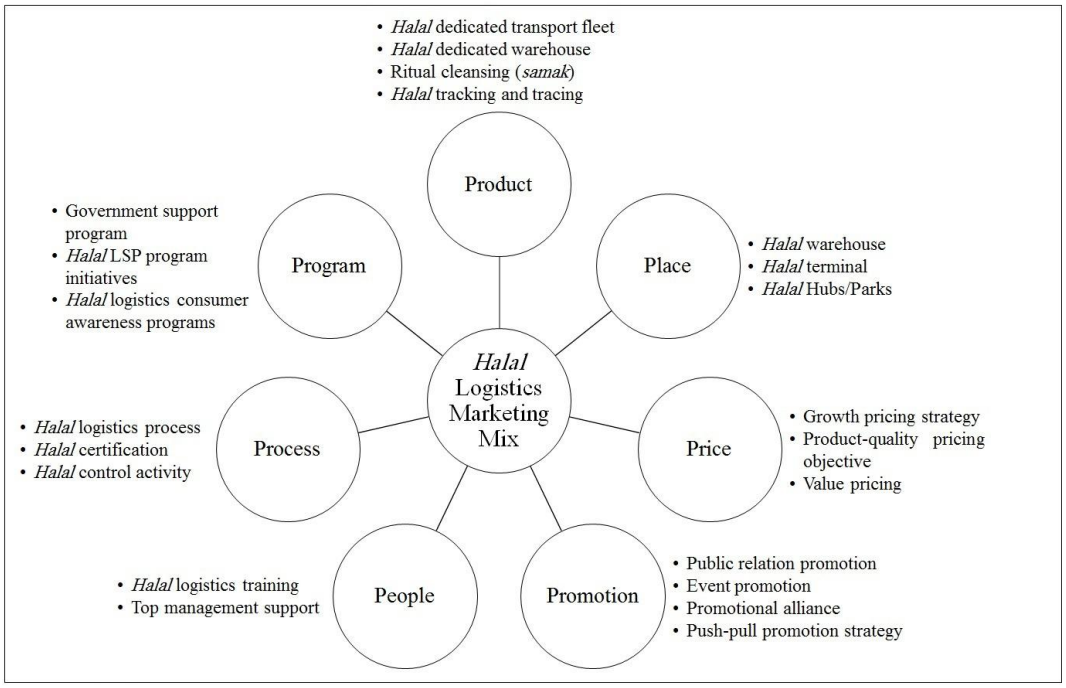

Figure 5.1 Halal Logistic Marketing Mix

5.1.1.1 Product (Service)

The MITI categorises the *ḥalāl* industry into three components of food, non-food, and services. They regard *ḥalāl* logistics as part of the services category. In line with this classification, this study regards *ḥalāl* logistics as a product that manifests in logistical services provided to customers. This is supported by Kotler and Keller (2012) who argued that a product is either goods

or services offered to the market to satisfy demand. *Ḥalāl* logistics is similar to conventional logistics activities such as transportation, warehousing, packaging, procurement, and material handling, with the major difference that it only caters for *Sharīʻah* compliant shipments (Zulfakar, Jie, & Chan, 2012). According to Tieman (2013), one of the key activities in *ḥalāl* logistics is transportation because a good transportation system will promote service efficiency and quality. Riaz and Chaudry (2004) also deemed transportation and distribution activities the most crucial components in maintaining the integrity of *ḥalāl* products. As argued by Tieman et al. (2012), it is not only the transport vehicle that ensures the *ḥalāl* integrity of shipment, but containers or carriers also play a significant role in maintaining *ḥalāl* integrity during distribution. The slightest presence of *ḥarām* substances will annul the *ḥalāl* status of transportation. This necessitates a separate transportation fleet in order to minimise and avoid any potential cross-contamination. The importance of transportation in *ḥalāl* logistics is also stressed by Miranda-de la Lama, Villarroel, Liste, Escós, and María (2010), who argued that animal welfare during transportation must also be given attention. Furthermore, the possibility for cross contamination requires the development of information and communication technologies (ICT) to closely track and monitor packaging, transport, and distribution processes (Tan et al., 2012).

Warehousing and storage services are also among the services provided in *ḥalāl* logistics. This facility is used as a storage area and switching facility. Activities performed in warehouses for *ḥalāl* products include packaging and labelling, which must be performed using dedicated facilities and equipment in order to avoid cross contamination between *ḥalāl* and non-*ḥalāl* products. Furthermore, several LSP in Malaysia offer cold chain warehouses dedicated for temperature sensitive shipments such as *ḥalāl* meats or poultries, in order to maintain its freshness. Apart from that, *samak* service (ritual cleansing), steam cleaning, and disinfection services for containers are several cleaning services offered by LSP in order to maintain customer satisfaction and ensuring total *ḥalāl* logistics (Jaafar et al.; Kamaruddin et al., 2012). However, for these services to achieve their desired outcomes, complete segregation must be practiced and training must be provided either by *ḥalāl* authorities or LSPs (Jaafar et al., 2011;

Tieman et al., 2012; Pahim et al., 2012). Another service offered in *ḥalāl* logistics is *ḥalāl* tracing and tracking. Traceability is important as it ensures food quality and improve food safety along the supply chain, thereby enhancing the integrity of *ḥalāl* products (Bahrudin, Illyas, & Desa, 2011).

5.1.1.2 Place

For firms to be successful, logistics and marketing functions must be integrated because the right product must be at the right price, advertised through proper promotions, and must be available at the right place. Customer dissatisfaction occurs if a desired product or service is reasonably priced but wrongly sent to another recipient or place. This scenario indicates that logistics creates place utility and the product must be made available where customers demand it. Kotler and Keller (2012) depicted location, inventory, and coverage as the components of place marketing mix. From a *ḥalāl* logistics perspective, terminal (location) and warehouse (inventory) are the components of *ḥalāl* logistics' place marketing mix. This is consistent with Tieman et al. (2012) that warehouse and terminal operations are key disciplines in *ḥalāl* logistics. There are five critical areas of a *ḥalāl* warehouse, namely, loading and unloading bay, storage area, packaging, and cargo consolidation area. These five critical areas must be completely segregated from conventional warehouse operations either through designated partitions or dedicated facilities (Jaafar et al., 2011; Tieman et al., 2012).

A terminal can be a gateway of a nation, as it serves as a point for facilitating import and export activities. A *ḥalāl* terminal completes the *ḥalāl* logistics system, and is key to maintaining a high level of *ḥalāl* logistics integrity. A *ḥalāl* terminal functions as an inspection access point for various modes of transportation and acts as a storage or holding area similar to a warehouse. Furthermore, a *ḥalāl* terminal contributes to the quality, safety, and security of *ḥalāl* cargo. However, a *ḥalāl* terminal is difficult to operate as it requires physical segregation of *ḥalāl* shipments and constant information sharing among the stakeholders (Tieman et al., 2012). Therefore, Tieman et al. (2012) suggests that terminal users should practice physical segregation through coding, marking,

and identification in order to ease *ḥalāl* terminal operations. In addition, the development of *ḥalāl* parks, monitored by Halal Industry Development Corporation (HDC) to help spur the *ḥalāl* industry's growth by setting up communities of *ḥalāl*-oriented businesses across Malaysia, is also categorised as a place in marketing mix. This initiative will benefit the industry domestically and globally as it establishes Malaysia's pioneer role in *ḥalāl* business while attracting multinational corporations to choose Malaysia as their preferred *ḥalāl* business destination, including *ḥalāl* logistics.

5.1.1.3 Price

Price is the amount of money paid by customers for a product or service. In logistics, it refers to reducing costs while maintaining customer satisfaction. Charging customers the best price allows for greater revenue and improved sales. In logistics, customers are willing to pay more for top quality services. Meanwhile, Kotler and Keller (2012) suggested that by offering value pricing, a strategy of low pricing with high-quality offering, will win loyal customers. According to Kotler and Keller (2012), the five pricing objectives are survival, profit maximisation, market share maximisation, market skimming, and product-quality leadership objectives. There is a general paucity in *ḥalāl* logistics pricing studies. To determine the pricing objective of *ḥalāl* logistics services, it is best to view Kotler and Keller's (2012) product life-cycle depicted in Figure 2. Since conventional logistics is already established, the concern now is how to integrate *ḥalāl* into the logistics system (Iberahim, Kamaruddin, & Shabudin, 2012). For this, it is best to assume *ḥalāl* logistics is currently growing. For a growth market, firms should lower their prices but improve the product quality, which will allow *ḥalāl* LSPs to attract new and price-sensitive customers as well as instilling loyalty among customers (Kotler and Keller, 2012). Hence, it is suggested that the pricing objective of *ḥalāl* logistics manifests in product-quality leadership objectives by offering value pricing to customers. This is supported by Tieman and Ghazali (2013) that pricing should not be unnecessarily high as it will influence access to *ḥalāl* products.

It may be argued, however, that pricing of *ḥalāl* logistics could be high as it involves additional tasks such as physical segregation of facilities, vehicles, equipment, *ḥalāl* certification application, and renewal fees (Jaafar et al., 2011; Tieman, Ghazali, & van der Vorst, 2013). Furthermore, although Muslims are willing to pay a premium for *ḥalāl* products and services, Tieman et al. (2013) confirmed that high *ḥalāl* logistics costs are transferred to customers, and different prices apply to Muslim and non-Muslim countries. Consequently, policy makers and planners must perform their role in setting acceptable logistics prices so that customers are willing to pay for *ḥalāl* logistics (Kamaruddin et al., 2012). Ultimately, whatever prices are imposed onto *ḥalāl* logistics services, it must never cause difficulties or hardship as it will hinder customers from *ḥalāl* logistics services.

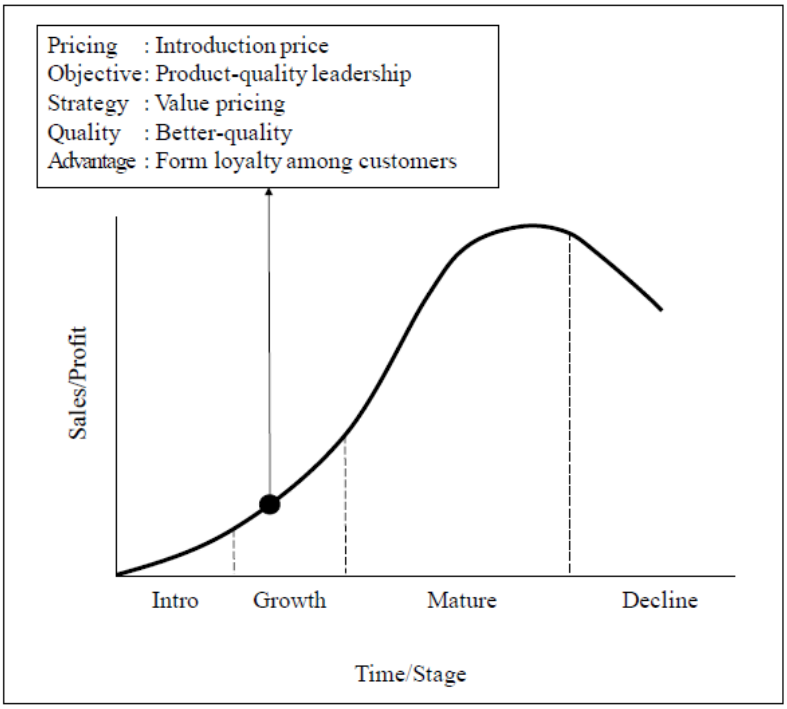

Figure 5.2: Ḥalāl logistics PLC-price
Source: Adapted from Kotler and Armstrong (2010); Kotler and Keller (2012)

5.1.1.4 Promotion

In order to persuade and convince target customers, promotional activities and tools are vital as it communicates the merits of the products and services (Kotler & Armstrong, 2010). As earlier suggested, *ḥalāl* logistics is in the growth

stage of its product life-cycle. For promotional efforts, Kotler and Keller (2012) suggested that spending money on promotion is essential as it will help in securing a dominant market position. To achieve this, Wirtz, Chew, and Lovelock (2012) introduced the marketing communication mix where activities such as advertising, public relations, or trade shows are effective communication tools to promote services. In logistics, advertising or personal selling is practiced to sell value added services offered by LSPs (Lambert et al., 1998). In relation to *ḥalāl* logistics, several promotional initiatives are undertaken such as trade shows. International trade shows and exhibitions such as the Malaysia International Halal Showcase (MIHAS), Halal Fiesta (Halalfest) (Malaysia), Halal Food Festival (England), and the Halal Expo and Global Halal Trade Summit (United Arab Emirates). Trade shows and events are productive promotional tools for *ḥalāl* logistics as business-to-business (B2B), business-to-consumer (B2C), and business-to-government (B2G) markets converge at a place where physical evidence, in the form of exhibits, samples, demonstrations, and brochures, are showcased in addition to the media interest it creates (Kotler & Keller, 2012; Wirtz et al., 2012).

Moreover, *ḥalāl* logistics can apply Kotler and Armstrong's (2010) push-pull promotion strategy. From Figure 3, product manufacturers and retailers can apply a push strategy by opting for *ḥalāl* LSPs to "push" or transport the products to final consumers, especially if the products are for Muslim markets, thus indirectly promoting *ḥalāl* logistics services. As for a pull strategy, if consumers demand *ḥalāl* products advertised by product manufacturers, *ḥalāl* LSPs will assist in "pulling" the products from producers to consumers, as the use of *ḥalāl* logistics for delivery will enhance the products' *ḥalāl* status and integrity. Furthermore, public relations promotional efforts and promotional alliance (Kotler & Keller, 2012) can also be a good platform for *ḥalāl* LSPs to advertise their services ultimately securing customers. For instance, a promotional alliance between *ḥalāl* LSPs and government is the way forward as exemplified by Kontena Nasional, a government-link company (GLC) in Malaysia, that is dedicated to *ḥalāl* logistics operations. Meanwhile, Malaysia Airlines, the national flag carrier, ensures the inflight caterings are *ḥalāl*. Both are good examples of

LSP and government alliance in promoting *ḥalāl* industry, specifically *ḥalāl* logistics. Government involvement in logistics is apparent and comes in various forms including infrastructure development, policy making and regulation, logistics and *ḥalāl* education, financial support, and promoting the logistics industry for foreign direct investment (Gunasekaran & Ngai, 2003; Saidi & Hammami, 2011).

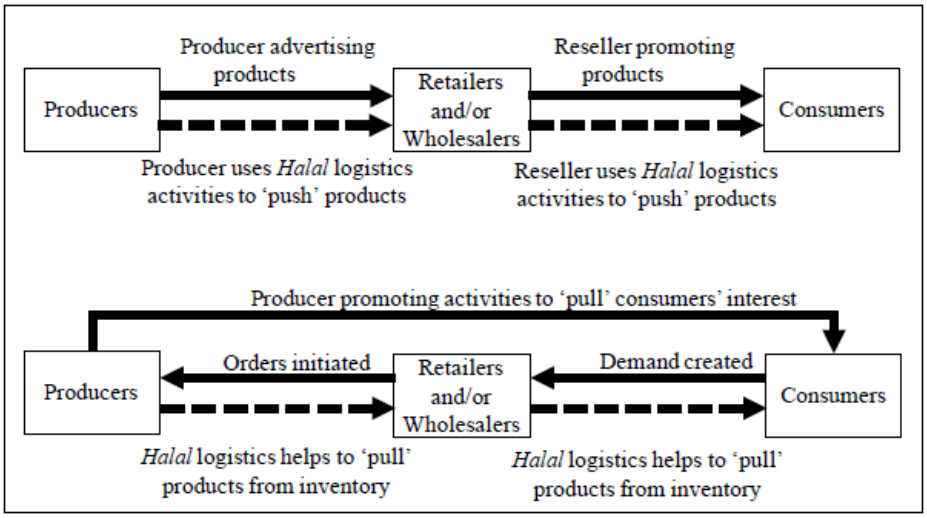

Figure 5.3: Ḥalāl logistics Push-Pull Strategy in promotion
Source: Adapted from Kotler and Armstrong (2010)

5.1.1.5 People

Development and retention of talents is a challenge in global logistics and supply chain as young graduates perceive the industry to be unattractive with limited career opportunities (Fearne & Hughes, 1999). Additionally, in service marketing, people are an integral aspect of marketing success and even with the technological development, human interaction between customers and employees remains essential (Kotler & Keller, 2012; Wirtz et al., 2012). Besides, the presence of loyal, skilled, and motivated employees in logistics and supply chain can be a source of competitive advantage, a driver towards service objectives, providing greater customer satisfaction, better on-time delivery, and contribute to revenue growth (Mothilal, Gunasekaran, Nachiappan, & Jayaram 2012; Wirtz et al., 2012). Furthermore, the link between skilled employees, marketing, and logistics is explained by Piercy (1995) who explained that logistics is a barrier in achieving market objectives (customer satisfaction, low prices, higher revenue,

and service quality), which can be overturned through quality training and management support. Hence, *ḥalāl* and logistics related training and top management support are important components in *ḥalāl* logistics promotion marketing mix.

According to Pahim et al. (2012) and Tieman et al. (2012), the need for training in both *ḥalāl* and logistics knowledge is vital in order to foster the industry's growth. In contrast, lack of knowledge and expertise in *ḥalāl* logistics stunts the development (Talib et al., 2013). To address this, the "people" factor must be fully addressed, and more training and support must be on the blueprint and in actual practice. The authors categorised training in *ḥalāl* logistics into *ḥalāl* training (breeding, slaughtering, supervision, etc.), logistics supply chain (packaging, distribution, transportation, storage, equipment, handling, etc.), and administration (certification, policy, regulation, marketing, etc.). To relate *ḥalāl* practices, people and logistics, during *ḥalāl* product preparation (slaughtering, cleaning, packaging, warehousing and transportation), the presence of Muslims is a must as they will assume supervisory and inspectional roles (Riaz & Chaudry, 2004). In addition, this requirement will ease auditing and certification applications or renewal processes. Furthermore, in the context of *ḥalāl* certified logistics operations, it serves as a marketing tool for LSPs and product manufacturers.

Top management support is crucial in *ḥalāl* logistics as organisational support will increase service quality (Hernandez & Miranda, 2011). Top management support in *ḥalāl* logistics and marketing can be in the form of reward and resource allocation, motivation and encouragement, financial and IT support, setting priorities, training and recruitment, and many more (Lin & Lin, 2011; Davies & Chun, 2012; Lin, Kuei & Chai., 2013). For example, in terms of recruitment, *ḥalāl* LSPs should balance the number of junior and senior employees (Davies & Chun, 2012) to project better branding. Rezai, Mohamed, and Shamsudin (2012) argued that consumers (employees) aged 40 years and above have a higher level of religiosity and are more sensitive towards *ḥalāl* products. Meanwhile, managers in *ḥalāl* LSPs should motivate and encourage the employees by creating a pleasant work environment as working in the service

industry can cause emotional exhaustion that might influence customer care and satisfaction (Poddar & Madupalli, 2012).

5.1.1.6 Process

Kotler and Keller (2012) described the process in service marketing mix as a structure that guides and establishes the right set of services and marketing activities that mutually benefit a long-term relationship. Meanwhile, Lambert et al. (1998) referred to logistics as the collective process of activities for goods and services for the purpose of customer satisfaction. The term "marketing channel" is derived from a combination of these two descriptions, as interdependent organisations are involved in the process of making products or services available for consumers or business customers (Kotler & Armstrong, 2010). The channel members involved in the marketing channel for *ḥalāl* products is shown in Figure 4. Figure 4 indicates that *ḥalāl* logistics is the intermediary function that links channel members with one another. For *ḥalāl* products to retain its *ḥalāl* status and integrity, the logistics process from supplier to consumer must be *ḥalāl* and *Sharī'ah* compliant (Jaafar et al., 2011; Tieman 2011; Tieman et al., 2012). Furthermore, *ḥalāl* processes must be transparent, traceable, instil confidence, and avoid excessive ambiguity. To achieve this criterion, *ḥalāl* certification is the most vital aspect of any *ḥalāl* business as it is a document issued by an Islamic organisation certifying that the listed products or services meet *Sharī'ah* standards and guidelines (Riaz & Chaudry, 2004; Tieman & Ghazali, 2013; van der Spiegel, 2012).

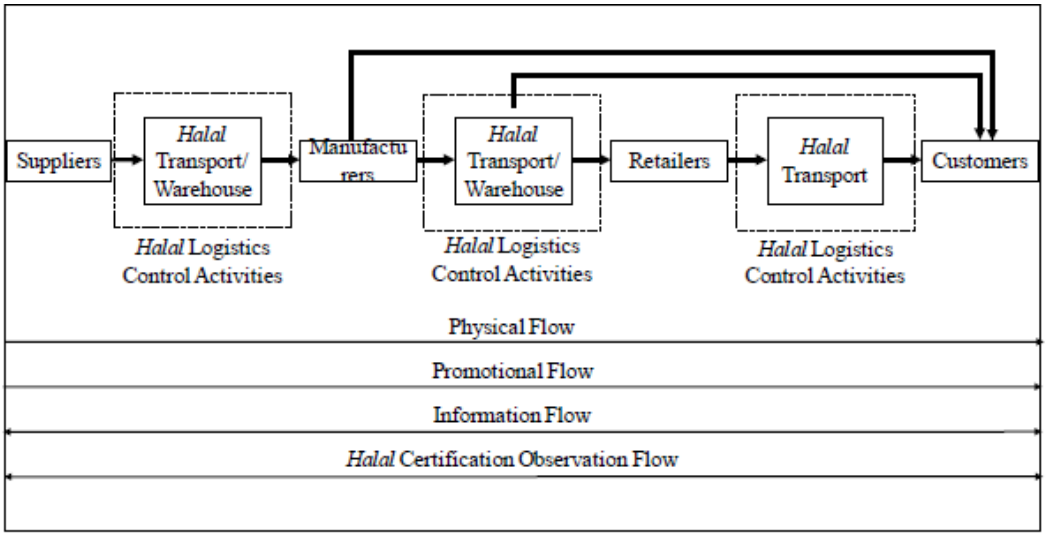

Figure 5.4: Ḥalāl logistics process

Source: Adapted from Kotler and Keller (2012)

Ḥalāl certification is essential for *ḥalāl* products and services as it signifies trust, safety, and purity (Marzuki et al., 2012). Besides, *ḥalāl* certification affects the purchase intention and consumer confidence as consumer demand for *ḥalāl* products and services are the driving force behind *ḥalāl* certification applications among product manufacturers and service providers (Aziz & Chok, 2013; Rezai et al., 2012). For *ḥalāl* logistics, *ḥalāl* certification is a process since the application and reapplication involves an exhaustive process of visits, audits, discussions and many corrective measures (Jaafar et al. 2011). For this reason, *ḥalāl* certified LSPs boasts their services are the best in terms of safe and clean operation. However, if firms are *ḥalāl* certified by international or local *ḥalāl* authorities, maintaining the *Sharī'ah* compliant operation remains a challenge. Tieman et al. (2013) recommend a series of *ḥalāl* logistics controls and assurance processes for both Muslim and non-Muslim countries. The *ḥalāl* logistics control and assurance process involves the key activities in *ḥalāl* logistics (terminal, transport and warehousing) and the control processes are stricter in Muslim countries. The control process involves layers of activities such as receiving, put-away, storage, cross-docking, order picking, and shipping for *ḥalāl* warehousing, cleaning, segregating, and documentation for *ḥalāl*

transportation, and inspection, storage, consolidation segregation, and documentation for *ḥalāl* terminals.

The most crucial process is the initial purchasing of raw materials and supplies. Purchasing is part of marketing and logistics discipline. To achieve a complete *ḥalāl* logistics chain, firms must ensure that their suppliers abide by the strict *ḥalāl* standards (Tieman & Ghazali, 2013). For example, the purchasing of unnecessarily high priced goods and the acceptance of *riba* (interest) in Islam is prohibited and could jeopardise the *ḥalāl* logistics chain. Therefore, this study asserts that the procurement processes must be in line with the principles of *Sharī'ah* before other *ḥalāl* logistics elements such as transportation and warehousing take place.

5.1.1.7.Programme

A programme encompasses the traditional marketing mix (product, place, price, promotion) and other marketing activities and is performed towards consumer- and firm-directed activities (Kotler & Keller, 2012). The reason "program" is preferred over the popular "physical evidence" is because the latter is more appropriate of *ḥalāl* products while the former is closely related to *ḥalāl* services (logistics). Therefore, this study categorises government support, firm initiatives, and enhancing consumer awareness as the elements of program-marketing mix. In *ḥalāl* logistics, a government support programme comes in the form of a national agenda, such as the Malaysian Third Industrial Master Plan (IMP3) 2006-2020 (MITI, 2006). The *ḥalāl* industry has been pinpointed by the Malaysian government as a potential growth sector by harnessing the lucrative international and domestic *ḥalāl* market. For instance, the mission to establish Malaysia as an international *ḥalāl* hub is one of the strategic thrusts in IMP3. To achieve this, the Malaysian government established its own internationally recognised *ḥalāl* standards such as MS1500:2009 (Halal Food – Production, Preparation, Handling and Storage – General Guidelines), MS2400-1:2010 (Halalan-Toyyiban Assurance Pipeline – Part 1: Management System Requirement for Transportation of Goods and/or Cargo Chain Services) and MS2400-2:2010 (Halalan-Toyyiban Assurance Pipeline – Part 2: Management

System Requirement for Warehousing and Related Activities) along with international standards such as Good Manufacturing Practice (GMP) and Hazard and Critical Control Points (HACCP).

The government support programme includes logistics for small-medium enterprises (SMEs) by providing financial support in securing *ḥalāl*-compliant facilities and equipment such as cold-chain facilities, transportation, handling and forwarding, and warehousing services, as well as offering competitive rates for *ḥalāl* logistics for SMEs to build premises at strategic locations in *ḥalāl* parks nationwide. Besides that, government intervention comes in the form of grants and tax incentives. The Malaysian government, for example, allocated a maximum of RM150,000 for companies to venture into the *ḥalāl* market including *ḥalāl* logistics businesses. In terms of tax incentives, special inducements are given for the establishment of international sales offices, *ḥalāl* certification, registration of patents and trademarks, product licensing, and web-site development. Additionally, to create awareness among business customers and consumers, various *ḥalāl* related programmes were initiated ranging from trade fairs, conferences, training, and education. For example, the World Halal Forum, Malaysia International Halal Showcase (MIHAS) and Malaysia International Halal Conference (INHAC) are some programmes that aim to create product, service, and brand awareness among consumers. Moreover, *ḥalāl* logistics programmes are also undertaken through LSPs' own initiatives. Programmes include in-house training, internal *ḥalāl* auditing committees, and *samak* (Jaafar et al., 2011; Talib et al., 2013) services. The various programmes seek the betterment of *ḥalāl* logistics as depicted in Figure 5.5.

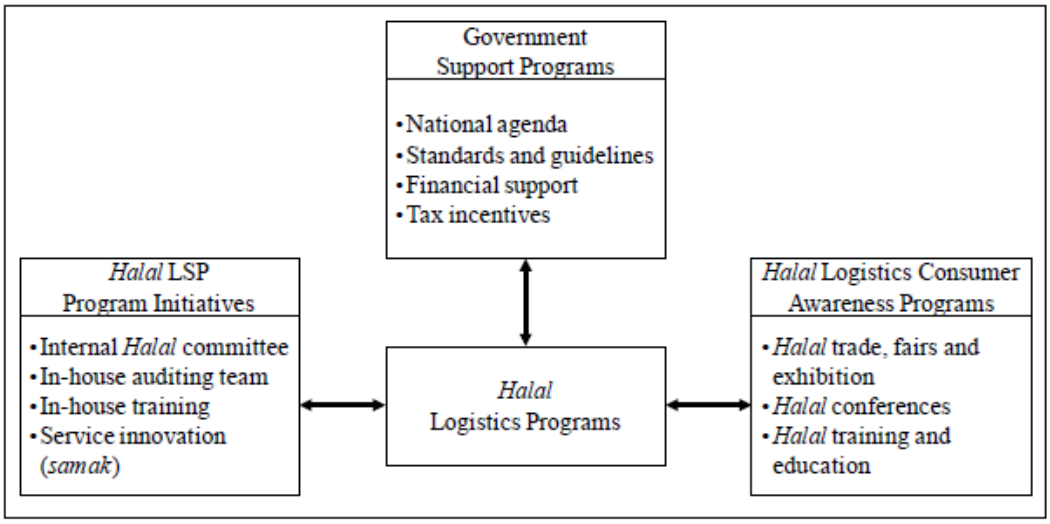

Figure 5.5: Ḥalāl logistics programmes
Source: MITI (2006); Jaafar et al. (2011); Talib et al. (2013)

5.1.2 Defining Marketing from Islamic Perspective

The philosophy, on which this analysis of Islamic Marketing is built, is based on the basic motives of creation of mankind and purpose. Islam is the complete code of life (3: 19, 16:52, 98: 5, and 110:2). It means peace; peace with oneself, peace with other human beings, peace in this life and peace in the hereafter and complete submission to the will of God **(**Alom & Haque, 2011).

In Islam every aspects of human life must be according to the will of Allah. So In Islam, Marketing is not confined with buying and selling or telling and getting profit or about goods and services under any business. All activities and transactions are considered as worship in Islam (2: 30).

وَإِذْ قَالَ رَبُّكَ لِلْمَلَٰٓئِكَةِ إِنِّي جَاعِلٌ فِي ٱلْأَرْضِ خَلِيفَةً ۖ
قَالُوٓاْ أَتَجْعَلُ فِيهَا مَن يُفْسِدُ فِيهَا وَيَسْفِكُ ٱلدِّمَآءَ وَنَحْنُ
نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ ۖ قَالَ إِنِّيٓ أَعْلَمُ مَا لَا تَعْلَمُونَ ﴿٣٠﴾

And [mention, O Muhammad], when your Lord said to the angels, "Indeed, I will make upon the earth a successive authority." They said, "Will You place upon it one who causes corruption therein and sheds blood, while we declare Your praise and sanctify You?" Allah said, "Indeed, I know that which you do not know."

Islam is the way of life governed by rules and customs defined, explained and practices by Prophet Muhammad. Even human nature and behavior is not against Islamic Aqida, Shariah, and Akhlaq. In addition to these, Islam set some dietary laws intended to advance human well being which comes from Allah(5:48).

وَأَنزَلْنَآ إِلَيْكَ ٱلْكِتَٰبَ بِٱلْحَقِّ مُصَدِّقًا لِّمَا بَيْنَ يَدَيْهِ مِنَ
ٱلْكِتَٰبِ وَمُهَيْمِنًا عَلَيْهِ ۖ فَٱحْكُم بَيْنَهُم بِمَآ أَنزَلَ ٱللَّهُ ۖ وَلَا
تَتَّبِعْ أَهْوَآءَهُمْ عَمَّا جَآءَكَ مِنَ ٱلْحَقِّ ۚ لِكُلٍّ جَعَلْنَا مِنكُمْ شِرْعَةً
وَمِنْهَاجًا ۚ وَلَوْ شَآءَ ٱللَّهُ لَجَعَلَكُمْ أُمَّةً وَٰحِدَةً وَلَٰكِن لِّيَبْلُوَكُمْ فِى
مَآ ءَاتَىٰكُمْ ۖ فَٱسْتَبِقُوا۟ ٱلْخَيْرَٰتِ ۚ إِلَى ٱللَّهِ مَرْجِعُكُمْ جَمِيعًا
فَيُنَبِّئُكُم بِمَا كُنتُمْ فِيهِ تَخْتَلِفُونَ ﴿٤٨﴾

And We have revealed to you, [O Muhammad], the Book in truth, confirming that which preceded it of the Scripture and as a criterion over it. So judge between them by what Allah has revealed and do not follow their inclinations away from what has come to you of the truth. To each of you We prescribed a law and a method. Had Allah willed, He would have made you one nation [united in religion], but [He intended] to test you in what He has given you; so race to [all that is] good. To Allah is your return all together, and He will [then] inform you concerning that over which you used to differ.

Islamic Marketing can be defined as:

The process and strategy (Hikmah) of fulfilling need through Halal (Tayyibat) products and services with the mutual consent and welfare (Falah) of both parties i.e. buyers and sellers for the purpose of achieving material and spiritual wellbeing in the world here and the hereafter.

There are several key words/core aspects which enumerate this definition:

1. Strategy (*Hikmah*)
2. Need
3. *Halal (Tayyibat)*
4. Mutual Consent
5. Welfare (Falah)

All these key words should be crystallized in light of the Holy Quran, Sunnah, and other Islamic literature.

5.1.2.1 Strategy (Hikmah)

In Islam the word *Hikmah* is very close to the strategy which indicates 'Wisdom'. It signifies sound perception and sound judgment which is time befitting approach, adaptable to the particular situation. Marketing allows us to consider the subject as being flexible and dynamic, just like the world we live in. Islamic Marketing can achieve long term goals in this world and the hereafter through interacting with changing environment, situation and even it can purify the beliefs, outlook, morals, habits, customs, and social, cultural, economic and political life of man in its totality. The holy Quran tells of *Hikmah* in different verses such as (2:129, 2:151, 2:231, 2:269, 3:81, 3:164, 33:34, and 56:69-70). Even in a Hadith Prophet (PBUH) says about two people (Al Hadith, 255) ―A man whom Allah has given wisdom and who acts in its spirit and imparts it to others.‖ *Hikmah* will guide also one‘s resource moderately to meet one's needs and in spending whatever is left for charitable purposes. That‘s why human being should not forget the Book and Wisdom because Allah entrusted them with the glorious task of guiding the world. They should also not forget to good and righteousness (2: 143) and not to do injustice and other evil behavior instead of directing the world and human being to the Right Way (16:90).

5.1.2.2 Mutual Consent

This is based on the statements of the Quran and the Sunnah. ―O believers, trade by mutual consent….‖ (4:29).‖ And who (Conduct) their affairs by mutual consultation…‖ (42:38). Abu Saeed al-Khudri reported: The Messenger of (PBUH) said: The contract of sale becomes lawful with the consent of both parties.‖ (Ibn Majah) 'Mutual Consent' means that the exchange must be operated on the free will of buyers and sellers and free of undue pressure, fraud and deception. It must not encourage competition rather ensure cooperation among all stakes without elements of compulsion or cheating. In this case, _the seller and

buyer must have the right to keep or return the goods so long as they have not parted or till they part‘ (Al Hadith 293).

The needs that can be satisfied by a group of them through mutual cooperation are many times greater than what individuals are capable of satisfying by them. Al-Dimashqi (1977) said, People are, therefore, necessitated by force of circumstances to be clustered in cities to help each other in fulfilling their mutual needs‖. The instance is noticed in the following quotation: ‗any transaction might be considered fair and ethical if both parties have adequate and appropriate information and both enter into the transaction willingly and without coercion‘ (George, 1999). The strong feelings from both parties at the time of exchange should be surrounded by If, however, the dimensions of accountability before an All-Powerful Being, from whom nothing can be hidden (5:3).

حُرِّمَتۡ عَلَيۡكُمُ ٱلۡمَيۡتَةُ وَٱلدَّمُ وَلَحۡمُ ٱلۡخِنزِيرِ وَمَآ أُهِلَّ لِغَيۡرِ ٱللَّهِ بِهِۦ
وَٱلۡمُنۡخَنِقَةُ وَٱلۡمَوۡقُوذَةُ وَٱلۡمُتَرَدِّيَةُ وَٱلنَّطِيحَةُ وَمَآ أَكَلَ ٱلسَّبُعُ إِلَّا مَا ذَكَّيۡتُمۡ
وَمَا ذُبِحَ عَلَى ٱلنُّصُبِ وَأَن تَسۡتَقۡسِمُواْ بِٱلۡأَزۡلَٰمِۚ ذَٰلِكُمۡ فِسۡقٌۗ ٱلۡيَوۡمَ
يَئِسَ ٱلَّذِينَ كَفَرُواْ مِن دِينِكُمۡ فَلَا تَخۡشَوۡهُمۡ وَٱخۡشَوۡنِۚ ٱلۡيَوۡمَ أَكۡمَلۡتُ
لَكُمۡ دِينَكُمۡ وَأَتۡمَمۡتُ عَلَيۡكُمۡ نِعۡمَتِي وَرَضِيتُ لَكُمُ ٱلۡإِسۡلَٰمَ دِينٗاۚ فَمَنِ
ٱضۡطُرَّ فِي مَخۡمَصَةٍ غَيۡرَ مُتَجَانِفٖ لِّإِثۡمٖ فَإِنَّ ٱللَّهَ غَفُورٞ رَّحِيمٞ ٣

Prohibited to you are dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah , and [those animals] killed by strangling or by a violent blow or by a head-long fall or by the goring of horns, and those from which a wild animal has eaten, except what you [are able to] slaughter [before its death], and those which are sacrificed on stone altars, and [prohibited is] that you seek decision through divining arrows. That is grave disobedience. This day those who disbelieve have despaired of [defeating] your religion; so fear them not, but fear Me. This day I have perfected for you your religion and completed My favor upon you and have approved for you Islam as religion. But whoever is forced by severe hunger with no inclination to sin - then indeed, Allah is Forgiving and Merciful.

5.1.2.3 Need

Islamic marketing is based on need (17:29; H 3:373).H286, 306) when conventional marketing is based on wants. This is because company wants profit

and customers wants satisfaction of their needs. The basic idea in conventional marketing is that most human behavior is planned, purposeful quest and search for want satisfaction and Individuals act to satisfy their wants and desires. Goods, services, or ideas are the source of this satisfaction (Cooke et al. 1992). In Islam a person should consume according to his need and marketing promotional activities should not be the art of deception or cheating consumers and only for noble purpose, it will provide information clearly for the benefit of the people (Faruqi, 1995, al-Qardawi, 1980)(Al Hadith 94).

The Quran explicitly points out the basic needs of a man. (20:118-119). The Quran firstly establishes the physiological needs of man-food, clothing, water and shelter which are universal and resources are available to meet the basic needs of all human beings.(HAQ, 1996) Islam calls for a moderated and balanced satisfaction of human needs. It emphasizes on fulfilling basic biological needs for the survival of human life based on a Hadith that mentioned the rights of every human to have shelter, clothes, course bread (food), and water (narrated by al-Tirmidhi, Ahmad, and al-Hakim); and another Hadith that mentioned the concept of sharing basic biological needs such as water, grass, and fire (narrated by Abu Dawd, Ahmad, and Ibn Majah). All these elements mentioned by the Prophet actually help people fulfill their biological needs such as hunger, thirst, oxygen, and sex. Although Islam acknowledges material wants and the joy of their satisfaction but does not considers them the end or ultimate goal in life. Men and woman are created to glorify and worship Allah. The ultimate happiness of the believers is in performing this role as a true servant of Allah. Life before death and after death is closely interrelated in Islam. As the secular and materialist worldviews giving maximum attention and importance to the material aspect of human well-being and to maximize their wealth and want satisfaction, consequently the basic needs of a large number of people remain unfulfilled and inequalities of income and wealth have continued to rise. In addition, there is also a rise in the disintegration of the family, crime and anomie, and a decline in peace of mind and inner happiness of human beings. (Easterlin 2001, 1995 and 1974; Oswald, 1997; Blanchflower and Oswald, 2000; Diener and Oshi, 2000; and Kenny, 1999.)

5.1.2.4 Tayybat/Halal

Islam is not an accidental religion and does not aim at depriving the human being of the good things that Allah has provided. "Oh mankind! Eat from the earth that which is ÍalÉl (lawful) and (Tayyib) wholesome.‖ (2:168).The prophet (PBUH) also confirms it in his Hadith: ―The Halal is which Allah has made lawful in His book and the Haram is that which He has forbidden, and that concerning which He is silent He has permitted as a favor‖, (Qardawi, 1980).These parameters define the eating habits and by extension, the purchasing preferences of two billion people around the world. These parameters are, essentially, non-negotiable; they are unmoved by fad or fashion, they are not subject to age, income or geography, and are all the more powerful by not being enforced. They are the parameters of a people who choose, freely, to eat what is lawful (5:4).

In the Islamic outlook, consumer goods are the God given, useful, clean, wholesome, beneficial consumable materials whose utilization brings about material, moral and spiritual betterment of the consumers. Islam does not recognize all goods as products even though there is a high demand for those particular products. Only goods that are safe, beneficial and useful to consumer morally and ethically and are not in conflict with what is forbidden by Islam are recognized as products (Kahf, 1982).

In the Islamic frame of reference, goods are bounties bestowed by Allah on mankind. The Holy Quran always refers to consumable goods by using the term which attributes moral and ideological values to them. Tayyibat - the term repeated eighteen times and its derivatives are repeated forty three times in the Quran(2:56,2:168.2:172,5:4,5:5,5:87,5:88,7:32 and so on). The term means ‗the good and pure things'. Yusuf Ali (1975) indicates the meaning of ÙayyabÉt in five different phases to express the ethical and spiritual values. According to him Tayyibat means ‗good things', ‗good and pure things', ‗clean and pure things', ‗good and wholesome things' and ‗edibles of the best'. Accordingly prohibited materials are not considered as goods in Islam, and do not carry any value in exchange. Consumption and satisfaction are not condemned as long as they do not involve any harm or harmful things but it must be through Tayyibat. Allah says in

the Quran, ―Say: Who has forbidden the beautiful (gifts) of God which he has produced for his servants and Tayyibat (the things clean and pure), which he has provided for sustenance. (7:32) And, ―O you who believe! Do not prohibit the good things which Allah made ÍalÉl for you.‖ (5: 87).

In the Islamic viewpoints, the responsibility of a marketer is to ensure that the product is pure i.e. tayyib – processed in permissible way (Halal) manner and would not cause any harm to the consumers and the society (Saeed et al., 2001). Even the pursuit of productions and exchange of goods are guided by the Islamic code of conduct, Shariah. The exchange of goods or services, such as alcohol, gambling, magic, etc., are not permitted to be exchanged in the market even if they meet the maximization goals of profits and utilities. Transaction of these types of activities is undesirable from a moral stand of social welfare.

5.1.2.5 Falah(Welfare)

Islamic marketing must ensure human Falah on the basis of cooperation and participation between producer and consumer, seller and buyer. It ensure as "Our Lord, gives us what is good in this world and also what is good in the hereafter and saves us from the torment of Fire." (2:201; Al Hadith -391,487).

In Islamic Marketing, Market is viewed as a mechanism or institution in which buyers and sellers interact with goods and services in establishing prices through balances the conduct of buyers and sellers in ensuring greater welfare in this world, as well as the greatest reward in the world hereafter and maximize profits. Falah is comprehensive and a worldly concept. Falah arrives at 40 points of the Quran. The term denotes all-sided welfare of this life as well as that of the Hereafter. It implies that achievement of material wellbeing should be in a manner consistent with the achievement of welfare in the more important and eternal phase of human life-the Hereafter. (Siddiqi, 1979).

Moreover, the Qur'anic term Falah (prosperity, success) has not been used in the limited sense of worldly success. Rather, it denotes that enduring success which admits of no failure regardless of whether one is able to achieve success in the present phase of one's existence or not. Success not implies worldly prosperity, but true and real success everlasting bliss in this world as well as in the

Hereafter. Sattar (1988), describes Falah as the achievement of well-being in the present world and the Hereafter.

True success is not confined to transitory worldly and material prosperity but it comprises both successes in this life and in the life after death in the Hereafter, and is attained by sincere Faith and righteous deeds. To understand the real concept of the true success one should study the following verses of the Qur'an: (2:5, 3 : 200, 7: 8, 157, 9: 88, 10: 17, 22: 77, 23: 1, 11,24: 31, 87: 14). In Islam business must not solely be directed by profits but also endeavors to uphold and heighten the welfare of human beings. Success (Falah) in Islam is not solely measured by profits or other material gains but also in the pleasure of the Allah (Siddiqi, 1979). While material goals concentrate primarily on goods and services that contribute to physical comfort and well-being, spiritual goals include nearness to God, peace of mind, inner happiness, honesty, justice, mutual care and cooperation, family and social harmony, and the absence of crime and anomie. (3:110, 6:152, 16:90, 23:53, 33:21).

5.1.3 How Society can be Benefitted from Islamic Marketing

In Islamic Marketing the ethical standard is not compromised. So it can bring good luck for all the stakeholders in the market irrespective to their race, religion and classes. Marketing is being criticized for charging High Prices, Deceptive Practices, High-pressure selling, Shoddy or unsafe products, Planned Obsolescence, Poor services to the disadvantaged consumers, False wants and Too much materialism, Too few social goods, Too much political power, Creating undue competition etc. (Kotler, 2004) Islamic marketing may resolve all these complaints as it must ensure highest level of marketers accountability to the almighty God and they will always be holding the fear of punishment in the hereafter. If the Islamic Marketing is established, society will always be getting pure products and be enjoying the good conducts from the part of the marketers.

5.1.3.1 Promotional Tools: Islamic Injunction

Promotional tools, particularly advertising, playa significant role in value orientation, for they shape and mirror the values of society. Advertisements and

other promotional measures, applied in Islamic societies, should project Islamic values. Therefore, special attention must be paid to designing promotions that would help in projecting Islamic values, building customers' characters, and propagating truth in society. Promotions are justified on the basis of Islam's support for trading activities. Permissibility of and encouragemenfto r trading is evident in the following verses of the Qur'an: "Allah hath permitted trade and forbidden riba" (2:275); "0 believers, do not eat each other's property by wrong means, but let there be amongst you trade and business through mutual goodwill" (4:29); "When prayer is finished then disperse through the land in order to seek the bounty of Allah. " (62: 10) Since the ultimate aim of all promotional tools is to enhance trading, activities like advertising, PR, sales promotions, and contests are Islamic if they are consistent with Islamic principles and injunctions. Firms are, therefore, justified in spending reasonably on promotional activities with a view to informing consumers, who are entitled to know the exact qualities, quantities, and value of products on the market (Anwar and Saeed, 1996).

Allah speaks of enterprise and struggle for livelihood as "seeking His bounty" (62: 10). Promotional activities leading to healthy competition among firms are acceptable, and should be encouraged. However, unhealthy cut-throat competition for the purpose of accumulating more and more wealth is condemned: "The mutual rivalry for piling up (the good things in this world) diverts you (from the more serious things) until you reach the graves." (102:1-2) Hence, the principle of moderation sholud guide promotional activities in order to ensure healthy competition and fair marketing practices.

Through promotional means, people are lured to buy different models and brands of consumer goods, mostly for showing off and boasting. The Qur'an advises, "do not deceive yourself by taking this world asplay, pastime, show off, boasting and piling up riches in rivalry with each other." (57:20) This caution should be kept in mind whendesigning "media strategies" so as to ensure that promotional tools do not arouse unhealthy, unethical, and un-Islamic motives.

5.1.3.2 Advertising

Advertising is analyzed here in the light of Qur'anic injunctions on truth fulness, spending behaviour, legitimate versus illegitimate products, publishing ethics and human dignity.

Truthfulness

Advertising is an activity to which communication isessential. The Qur'an has laid down certain norms of communication which should be strictly observed in designing advertisements.The Qur'an enjoins upon us the necessity to speak the truth (33:70; 4:9). It also emphasizesju stice, "And when you speak(make sure that you) speak with justice"(6: 152). Those whose tongues utter any falsehood will be the first to be driven to hellfire (16:62). Those who preach what they do not practise are under the devil's influence (26:226). Allah asks the believers, "Why do you say what you do not profess?" and gives stern warning of His anger to those who lie (61:2-3). There are numerous verses which emphasis efulfilment of promises(2:40, 2: 177, and 17:34).

One may conclude from these injunctions that whatever is communicated through advertisements(a nd other promotional means) must be accurate and truly representative of the product or service advertised. There should be no false or misleading price claims or savings craims in advertisements.S imilarly, there should be full and explicit disclosure of (2:42) the terms and conditions pertaining to guarantees and warranties.

5.1.4. Australian Halal Food

5.1.4.1 Islam in Australia

Between 1947 and 1971 the Muslim population of Australia increased from 2,704 to 22,311. Apart from the immigration of Albanians, who came in relatively small numbers, the only Muslims acceptable under the prevailing immigration restriction policy were Turkish-Cypriots who held British passports by virtue of the occupation of their land by the British Empire. European Turks and “Turks of Ottoman race” were theoretically acceptable but were certainly not encouraged to migrate. Assimilation was dominant. What this meant is explained

by Bouma: “The immigrant was to settle into the pre-existing culture and society without causing any noticeable change. The immigrant did all the changing; the society did none. The immigrant was expected to learn English, acquire an Australian accent, eat Australian-style cuisine, go to Australian schools, adopt a footy team, attend Australian churches and blend in.”

Despite the experience the world had just been through with the highly developed racial theories of Nazism and the terrible cost these had inflicted upon all humanity, including the German people, old myths about “Nordic” racial types apparently still prevailed in Australia. Blond haired blue eyed migrants from north western Europe were clearly favoured by the Immigration Minister Arthur Calwell. ‘White’ Muslims from Cyprus, Bosnia, Albania, Bulgaria and Russia did get in as refugees but they were small in number.

Ahmed Skaka, trained as an imam in Sarajevo, enlisted in the Yugoslav Army then imprisoned by the Nazis in Stalag 17 in Bosnia and escaping to Brno at war’s end, sought emigration to Australia which was, at that time, eagerly seeking suitable settlers. He sailed for 26 days from Napoli to Melbourne, arriving on January 26 1950 and was transferred to the migrant settlement camp at Bonegilla. On the ship to Australia, he recalls, there was not one Bosnian. The passengers were mainly Italians, Romanians and Poles. In Bonegilla there were a few Russian Muslims and a few Romanian Muslims. They were able to get halal food from a family of Albanians who had a farm not far from the migrant camp. In accord with the terms of his migration he was assigned a job and equipped with an Employment Certificate which stated that the bearer had to remain in the assigned employment for 2 years. Ahmed Skaka and a Romanian Muslim from the camp were assigned for two years to the same job, at Clipsall in Adelaide. Both of them assumed that Adelaide was a desert so far as Islam was concerned.

They only discovered that there was a mosque in that city from a newspaper report of the death and funeral of Gool Mahomet. The following Saturday they set out to find it. There was a congregation of only two or three aged Afghans. From then on Ahmed acted as imam of the mosque while continuing to work for Clipsall. Only 7 people attended the Eid Prayer in 1951. All the old Afghans continued to wear national dress and when the younger ones,

born and brought up in Australia, came to the mosque in European dress, the old men called then non-Muslims. Imam Skaka told of an incident which occurred after Colombo Plan students started to come to study in Australia. One young Malaysian student brought a Quran in latin script to the mosque. The 80 year old caretaker, Iset Khan, finding it sitting inside, declared it a kaffir (non-believer) book and threw it out, onto the ground. Ahmed Skaka had to explain what it was.

Iset lived in the little room in the backyard of the mosque. He refused electric light and used a kerosene lamp, giving permission for the introduction of the godless innovation only when the lamp blew up. He had come to Australia when he was a young man.

According to Imam Skaka, the people living around the mosque in Little Gilbert Street Adelaide, were very hopeful that the Muslims would vanish with the last Afghans and that the land would come up for sale. However the Colombo Plan and the demise of the White Australia Policy caused them to lose hope.

Non-Europeans could get resident status in Australia from 1947. The concession was minimal, but the tide was turning. "It was decided that non-Europeans admitted for business reasons, who had lived in Australia continuously for 15 years, could be permitted to remain without applying for periodical extensions of permits. In effect, such people achieved resident status."

However what appears a fairly enlightened development did not benefit Samsuddin Bin Katib, an Indonesian who had only been here for 11 years. In Australia since 1937 he was working on a pearling lugger until the war. With the outbreak of war he first enlisted in the Australian Navy, then volunteered as a commando. Undertaking extremely hazardous action, he spent 199 days behind Japanese lines and gained non-commissioned rank. Unfortunately his service record did not protect him when he became involved in an industrial dispute with the Pearlers' Association. It was over an attempted reduction in divers' wages. As founder and president of the Indonesian-Malay Association, a type of pearling workers union, he was selected for deportation as a troublemaker in February 1948. After representations by the Seamen's Union, Calwell, a Minister in the Labor Party government, suspended the deportation order on condition he found employment in the pearling industry. Returning to Broome to the offer of a job,

Samsuddin's potential employer insisted that he resign from the Indonesian-Malay Association. Samsuddin refused to resign, all other employers refused to hire him, so he was again subject to a deportation order which, this time, was carried out. His former employer, to whom he was under bond, was ordered to provide repatriation to his country of origin. John Pattiasina, a Javanese, was also deported for his activities as secretary of the Association. As the Melbourne Herald noted, it was strange that the president and secretary of the IMA were being deported under the Immigration Restriction Act for trying to maintain a reasonable standard of living for all residents of Australia, supposedly the purpose of the Act (http://www.islamiccouncilwa.com.au/halal-certification/halal-guidelines/)

5.1.4.2 Halal Australia

Halal Australia is the company to approach when you are looking for quality Halal certification that you can trust at a competitive price. Halal Australia is accredited by A.Q.I.S and is one of the leading professionally trained certification bodies in the industry. We began operating in 2004 and have since extended our services (http://www.halal-australia.com.au/).

Figure 5.6 Halal Australia Logo

Halal Australia clients will enjoy access to a leading and professional team of Halal consultants committed to delivering outstanding Halal compliant products and services at competitive rates. Halal Australia understands and appreciates the business model of each individual client to cater for a tailor made product suitable to its unique needs. For us, preserving the integrity of the concept of Halal is paramount. Our commitment to this value has earned us a reputation in

the domestic and international markets of being one of the most experienced and trusted accreditation companies.

Halal Australia is also accredited by the Australian Quarantine and Inspection Service (AQIS) for the red meat export industry. We are the Halal certification body and consultant of choice for numerous companies including Alpha Flight Services Pty Ltd, one of the largest catering companies in Europe and currently operating across Australia to provide Halal compliant meals to major airlines. These airlines include Royal Brunei Airlines, Malaysian Airlines, Etihad, Emirates and Qatar Airways. Halal Australia is a member of the World Halal Council and is affiliated with a number of both national and international religious, Halal authorities and professional industry associations.

We know how important credibility is for a company to survive and prosper and it is not something that we take lightly. Halal Australia is well recognized in the Muslim community for its integrity, reliability and transparency. Being associated with our business name will no doubt give you an unparalleled advantage over others in the industry. Halal is also complimentary to, and enhances the HACCP program by requiring strict personal and production premises sanitation and hygiene standards.

Halal Australia is committed to providing excellent customer service and you can be assured of being given ongoing support and assistance to develop an effective Halal marketing strategy for your business.

An accredited company is permitted to affix its unique Halal Australia logo (registered trade mark) on all suitable products to improve its promotion and marketing efforts (conditions apply). Businesses can also be provided advertising space on the Halal Australia website (costs apply) as well as in other popular newspapers and magazines during the period of agreement at competitive rates.

The reasons why food industry have to get halal certify are:

- The Halal industry experts believe the size of the total global Halal market including all types of Halal products, consumables and services to range from a minimum of US$1.2 trillion to US$2 trillion per annum (Global Halal Congress, 2010)

- According to the World Halal Forum 2009, Time Magazine (May, 2009) reported that the total size of global Halal food market is worth about US$ 632 billion a year. This figure would be higher still if the non-Muslim consumers market is included.
- Greater profit market share: no loss of non Muslim markets. The International Halal food trade has been estimated to be worth at least US$580 billion a year (Halal Journal, 2007).
- Certification assists domestic Halal food and consumable industries in the developments and promotion of Australia as an International Halal Hub, consequently exploiting a global Halal food market of about 1.8 billion people.
- Since Halal certification is not mandatory, a competitive advantage is gained over companies with no Halal certification.
- Halal certification imposes strict personal sanitation requirements in addition to manufacturing premise hygiene practices, complimentary to the HACCP program.

5.1.4.3 Halal Food from Australian Federation of Islamic Councils

Islam is not a more religion. It is a way of life with rules and manners governing every facet of life. Since food is an important part of daily life, food laws carry a special significance. Muslims are expected to eat for survival, to maintain good health and not to live for eating. In Islam, eating is considered to be a matter of worship of God like prayer, fasting, alms-giving and other religious activities. A Muslim eats to maintain a strong and healthy physique in order to be able to contribute his knowledge and effort for the welfare of the society. Muslims are supposed to make an effort to obtain the best quality nutritionally. It is mentioned in a Hadith that the prayer of a person is rejected by Allah if his food is haram. Another Hadith states that hell-fire is more deserving of the flesh which has been nourished with haram.

Australia is a multicultural and multi-religious country. The problem of Halal-Haram with respect to food thus becomes an issue because some non Muslims may not understand the problems and sensitivities of the Muslims. This

is compounded by the fact that Australian manufacturers are either unaware of Muslims requirements or choose to ignore them as insignificant.

It is therefore in this situation that like the Australian Federation of Islamic Councils, its mother body, the Islamic Council of W.A. is endeavouring to establish the highest standards in the sanctioning of foods as Halal http://www.islamiccouncilwa.com.au/halal-certification/halal-guidelines/.

In general every food is considered lawful in Islam unless it is specially prohibited by the Qu'ran or the Hadith. By official definition, Halal foods are those that are:

- Free from any component that Muslims are prohibited from consuming according to Islamic law.
- Processed, made, produced, manufactured and/or stored using utensils, equipment and/or machinery that has been cleansed according to Islamic law.
- Free from contamination while prepared or processed with anything considered Najis (filthy).

According to the current Islamic thinking, the following are considered Najis and therefore Haram (unlawful, prohibited):

1. Swine including all by-products.
2. Insects considered ugly or filthy such as worms, lice, flies, etc.
3. Animals with fangs such as tigers, lions, cats etc,
4. Birds that have talons with which they catch their prey such as owls, eagles, etc.
5. Animals which Islam encourages to kill such as scorpions, centipedes, rats etc,
6. Dogs
7. Animals which Islam forbids to kill such as bees etc.
8. Animals which have toxins, poisons or produce ill effects when eaten such as some fish etc.
9. Amphibian animals such as crocodiles, turtles, frogs etc.
10. Meat (limbs, tails etc.) which have been cut from a live animal.

11. Lawful animals not slaughtered according to Islamic rites. (Fish is exempt from slaughtering).
12. Carrion or dead animals.

Plant and their products.

1. Poisonous Plant.
2. Intoxicating Plant

Liquids and their products

1. Poisonous drinks
2. Intoxicating drinks

Other matters and their products

1. Faeces and urine
2. Placental tissue
3. Blood

Halal Sources

Products made from the following substances are Halal unless containing or come into contact with a Haram substance.

1. All plant and their products
2. Certified Halal meat, poultry, game birds and animals.
3. All water creatures, fish, crustaceans and molluscs.
4. Egg from acceptable birds only.
5. Rennet from certified Halal slaughtered calves
6. Non animal rennet (NAR, culture)
7. Gelatine produced from certified Halal beef skins and/or bones,
8. Animal ingredients certified Halal

Halal Slaughter

The conditions required for Halal slaughter of animals and birds are:

1. The abattoirs or factory must be under the close and constant supervision of a religious organisation, namely ICWA.

2. The premises, machinery and equipment must be classed according to Islamic Shariah (law) before any production takes place.
3. The slaughterman must be a mature, pious Muslim of sound mind who understands fully the fundamentals and conditions relating to Halal slaughter and be approved by the religious authorities.
4. Only acceptable live animals and birds can be slaughtered.
5. The slaughter must be done manually using a steel knife.
6. Facilities must be available for rinsing the knife after each kill.
7. The slaughterman must sever the respiratory tract, oesophagus and the jugular vein.
8. The animal must be completely dead before skinning can take place.

Within the Islamic religion, a strong emphasis is placed on cleanliness – both spiritually and in the context of food and drink. For a food or drink product to be approved for consumption it must conform to the Islamic dietary laws as specified in the Qur'an, the Hadith (sayings) of the Prophet Muhammad, his Sunnah (tradition) and in the Fiqh (understanding) of the Islamic Jurists: Hanafi, Shafi', Maliki and Hambali. The Qur'an has numerous injunctions instructing Muslims to choose and consume good and wholesome foodstuffs.

In the selection of food and drink, Islam has laid down three very important guidelines, namely;

1. Whether the consumption of the foodstuff is prohibited by Allah,
2. Whether the foodstuff is obtained through Halal or Haram means, and
3. Whether or not the material is harmful to health.

There are several factors that determine the Halal/Haram status of a particular foodstuff. Amongst others, it is dependent on its nature, how it was processed and where it originated from. As an example, any pig product is considered Haram because the material itself is Haram. Whereas beef from an animal that has not been slaughtered according to Islamic rites would still be considered Haram. Also Haram is food that has been stolen or acquired through unethical means. Islam also prohibits the usage of any materials that are detrimental to the spiritual or mental well-being of a person, such as alcoholic drinks and drugs.

The concept of Halal in Islam has very specific motives;

1. To preserve the purity of religion
2. To safeguard the Islamic mentality
3. To preserve life
4. To safeguard property
5. To safeguard future generations
6. To maintain self-respect and integrity.

Islam encourages its followers to choose Halal foods. This awareness is always propagated in Muslim societies and is strengthened by the widespread knowledge extolling the virtues of consuming clean and Halal foods. Due to advancements in food technology and distribution, Muslims are more exposed to various ingredients and manufactured foods imported into Muslim countries. The most common of these are food additives, gelatine, emulsifiers and rennet in cheese manufacture. The Muslim community would like to know whether or not the addition, the ingredients or the finished foods contain any Haram substance. These products can become Halal if the raw materials are Halal and the process is compatible with the Islamic way.

To determine the Halal-Haram status of foodstuffs and other material, Islam has laid general guidelines on this matter, namely:

1. All raw materials and ingredients used must be Halal.
2. Naturally Halal animals such as cattle, goats etc., must be slaughtered according to Islamic rites, the rituals specify that the act must be performed by a mentally sound Muslim, to sever the blood and respiratory channels of the animal, using a sharp cutting tool such as knife.
3. The Halal ingredients must not be mixed, or come into contact with haram materials such as products from pig or dog during storage, transport, cooking, serving etc.

It must be understood that the production of Halal food is not only beneficial to Muslims, but also to food producers, by means of increased market acceptance of their products. Manufacturers and exporters of Halal products can receive Halal certification for their products from ICWA.

Menurut saya usaha kecil menengah

5.1.4.4 Halal Marketing from Australian Federation of Islamic Councils

It is estimated that the world's Halal food trade average nearly US$60 billion per year and growing. The existence of such a big market naturally opens the doors of economic opportunities for those engaged in the business, directly or indirectly.

A successful seller is not always the one whose product is exactly the same as of others in the line, but the one who, while producing in the same product line, can cater to the special tastes, preferences and needs of a group of customers which other producers have failed to meet.

Halal food market exists wherever there are Muslim consumers whose tastes and preferences are governed by Islamic law on food specification which calls for Halal food.

A successful seller is one who, in the same product line, can produce the goods with SPECIAL CHARACTERISTICS to meet the SPECIFIC NEEDS of various groups of consumers. In this case Halal food may apparently be the same as others are selling, by its nature, technique of its processing involving the ingredients, handling, use of various methods from the beginning to the end is always the one approved and recommended by Islamic law.

The Halal food trade presents the following challenges:

1. Attitude of the suppliers of Halal food products
2. Increasing the volume of sales
3. Efficient distribution network
4. Advertising
5. Creating consumer loyalty

1. Attitude of the Suppliers

When a Muslim consumer buys a Halal product, he is doing so because of his commitment to Islamic principles and teachings. But this does not mean that the seller should develop a patronising attitude towards the buyers. This will happen if a seller ignores the tastes and preferences of the buyers, and fails to improve the quality of the product and adopt cost effective methods of production which would enable him to be competitive within the target market.

Today in many Muslim countries, poultry, meat and dairy products are imported from European countries, Australia, New Zealand etc…. and the importing countries are happy because they are not only getting Halal food but also high quality food.

Thus from a marketing point of view, the firm issue in the Halal food trade, is the issue of the exporter's psychology and his recognition of the golden rule of marketing without which any attempt to promote Halal food exports to Muslim countries are doomed to fail.

2. Efficient Distribution Network

From the producers point of view, there are two types of markets for Halal food:

1. The market in Australia
2. The market in Muslim countries,

In the case of Australian market the problem is serious because the Muslim communities are scattered. But despite these difficulties one cannot discount the huge potential of Halal food market. The answer is to make the product Halal in the first place and to make it available for all. Also to take part in exhibitions and conferences of the Muslim communities in the various big centres.

For the Market in the Muslim countries , the real issues are:

1. honouring the commitment on a regular basis
2. maintaining quality
3. winning support of the local religious institutions who can certify the product as Halal and who can stand by your claim of Halal status. In addition you are dealing with local distributors, it is important to know their culture, their expectations and their way of saying 'yes or no". One should also be ready to learn how things can be made to move in that culture.

3. Advertising

Advertising is the key to marketing and sales. From the Halal point of view the advertising strategy depends upon whether a particular market is fully a comprehensive Muslim majority or it is appropriate to emphasise the Halal nature

and characteristics of the food so that it attracts the common folks in the society who are the majority.

In a multi-religious society where Muslims are a significant proportion of the population the product can be marked as Halal on the label so that the members of the community are aware of its status as well as promoting the product in the Muslim and ethnic media.

5.2 Study of South Australian SMEs

5.2.1 Small and Medium Enterprises in South Australia

Small businesses make a significant contribution to the Australian economy, accounting for almost half of industry employment and contributing over a third of industry value added 1 in 2009-10. ABS data on small business employment and industry value added is constrained to selected industries. It excludes *financial and insurance services*, and the general government component of *public administration and safety*, *education and training* and *health care and social assistance*. The statistics (including percentage shares) in this chapter reflect this limitation.

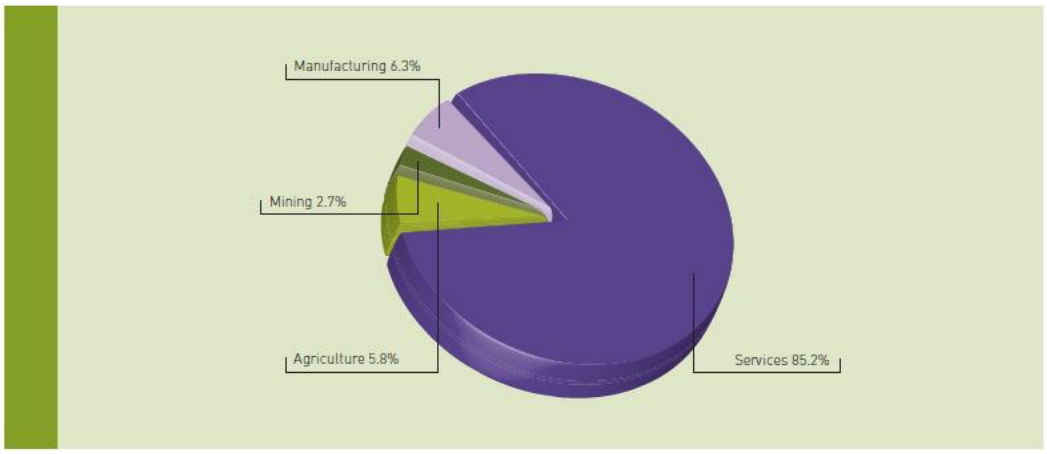

Figure 5.8 Industry contribution to small business industry value added, 2009–10

Data source: ABS Cat. No. 8155.0.

Figure 5.8 shows that almost 83 per cent of total *agriculture, forestry and fishing* industry value added is attributable to small businesses, compared with around 40 per cent in the *services* sector, 19 per cent in the *manufacturing* sector and around 9 per cent in the *mining* sector. Figure 5.9 shows a comparison of industry value added between small, medium and large businesses. Small

businesses contributed around 35 per cent of industry value added in 2009–10, compared with 42 per cent contributed by large businesses and 22 per cent by medium-sized businesses.

Table 5.1 Industry value added by sector and business size, 2009–10

	Business size				
Industry sector *(selected industries only —see 'Note 1' for exclusions)*	**Small (0–19 employees)**	**Medium (20–199 employees)**	**Large (200+ employees)**	**Total**	**Small business share of gross value added in each sector**
	($m)	($m)	($m)	($m)	%
Agriculture, forestry and fishing	**16 919**	**2986**	**506**	**20 411**	**82.9**
Mining	**7976**	**15 368**	**64 463**	**87 807**	**9.1**
Manufacturing	**18 482**	**28 314**	**50 013**	**96 809**	**19.1**
Services	**250 632**	**140 167**	**236 421**	**627 220**	**40.0**
Electricity, gas, water and waste services	2141	3590	26 357	32 088	6.7
Construction	46 549	17 908	19 365	83 822	55.5
Wholesale trade	16 941	17 541	20 763	55 246	30.7
Retail trade	23 644	12 278	27 720	63 641	37.2
Accommodation and food services	13 471	10 617	6956	31 044	43.4
Transport, postal and warehousing	14 801	9548	27 911	52 260	28.3
Information media and telecommunications	3000	3246	28 782	35 029	8.6
Rental, hiring and real estate services	36 675	5424	7375	49 475	74.1
Professional, scientific and technical services	38 728	21 282	23 886	83 895	46.2
Administrative and support services	13 539	9954	15 164	38 656	35.0
Public administration and safety (private)	1276	938	1461	3675	34.7
Education and training (private)	2900	7813	5918	16 631	17.4
Health care and social assistance (private)	20 339	10 923	17 380	48 642	41.8
Arts and recreation services	2626	2540	4850	10 016	26.2
Other services	14 002	6565	2533	23 100	60.6
TOTAL SELECTED INDUSTRIES	**294 009**	**186 836**	**351 402**	**832 247**	**35.3**

Table 1 shows that almost 83 per cent of total *agriculture, forestry and fishing* industry value added is attributable to small businesses, compared with around 40 per cent in the *services* sector, 19 per cent in the *manufacturing* sector and around 9 per cent in the *mining* sector.

The South Australian 2013-14 State Budget provides a stimulus to the housing and construction sectors, which includes a package of measures to support small businesses, and gives those who want to start or expand a business, greater support. Debt will reduce and remain under the Government's fiscal target of 50 per cent as a percentage of revenue in 2016–17. Careful choices about spending, a controlled infrastructure program, and arrangements to help local businesses, have all contributed to improving the budget's position.

The South Australian Government is investing to help the manufacturing sector navigate through the tough pressures from the high Australian dollar and low cost countries by protecting and creating jobs. Housing and construction activity in the state have been subdued, and growth in business investment and household consumption remains lower than trend. A concessional payroll tax of 2.5 per cent will apply to annual taxable payrolls of $600,000 to $1 million, effectively halving the payroll tax rate for businesses. The concessional payroll rate will be applied to eligible employers, providing relief of up to $9,800 to more than 2,200 businesses, or about 25 per cent of all grouped payroll tax payers.

5.2.2 Pineapple in Angaspark

One of the dried fruit in Adelaede is Angaspark. Angas Park Dried Apricots make a tasty and nutritious snack. Like all dried fruit, apricots are high in fibre, low in fat and cholesterol free. Dried apricots are also a source of vitamin A, iron and niacin. Full of tangy flavour and goodness, dried apricots make a delicious accompaniment to cheese and biscuits and can be added to cakes, puddings, curries and stuffing for meat and poultry. In order to provide you with exactly what your palette desires, Angas Park has 2 types of apricots available: Australian Style and Soft & Juicy.

Angas Park use the finest hand-selected Apricots grown locally and abroad. Hand cut and sun-dried to perfection, they deliver a unique and delicious flavour profile that is synonymous to the Angas Park Fancy Apricot. The drying process gives the dried apricots a tangy taste, coupled with the natural sweet flavour, creating a mature flavour.

Keeping with the Angas Park tradition of supplying the best quality dried fruit products, our team have developed a process of intensifying the juiciness of our Mediterranean apricots. Unlike other dried fruits, which can become leathery and tough, the Angas Park Soft & Juicy Apricots maintain a premium textured consistency. Angas Park's natural and traditional art of drying fruit is one of the only methods where the natural flavour and nutritional benefits of the fruit is not lost by today's modern processing and refining methods. This allows us to enjoy the benefit of the best fruit all year round.

Figure 5.9 Mixed Peel as one of Angaspark Dried Products

5.2.2.1 Dried Fruit Production in Angaspark

One of popular dried fruit in Angaspark is Apricots. The process of dried apricots is dicuss in this section.

5.2.2.1.1 Apricot Process

1. Apricot trees are planted on our 150 hectare orchard in South Australia's Riverland, which also has peaches and prunes. The fruit is harvested through traditional hand picking to ensure no bruised or irregular Apricots go into Angas Park products.
2. To produce the highest quality dried fruit, the fresh produce is hand cut and machine cut into halves along the suture line, and placed onto wooden trays for drying.

Figure 5.10 Apricots tree in Angaspark and Drying Fruit Process

3. The Riverland has the ideal hot and dry weather conditions for drying our fruit. The trays are then placed on grassed drying greens and treated with sulphur to maintain the natural colour, then left for 2 days in full sun, then stacked and shade dried for a further 5–6 days to complete the drying process. The trays are then emptied into bins ready for the next process.

Figure 5.11 Apricots Dried Fruit Transportation and process in Machine Washing

4. The dried fruit is transported to our plant for machine washing which ensures it is clean, soft and ready to eat.
5. Our internationally accredited, world-class production operations include hand sorting of fruit to ensure it meets Angas Park's high quality standards. Coupled with laser and optical sorters ensure the best quality product which has met the rigours and requirements for dried Apricots to have the Angas Park seal of approval.

Figure 5.12 Apricots as one of popular dried fruit in Angaspark

6. Modern packaging machines within our factory are used to form, fill and seal Angas Park quality dried fruit into our distinctive fresh sealed retail packets which are available throughout Australia and overseas.

5.2.2.1.2 Mixed peel

A blend of orange & lemon, the Angas Park Mixed Peel will add extra zing to your puddings, cakes and buns. Traditionally used in hot cross buns at Easter time and fruit cakes party, Mixed Peel can also be baked in biscuits or added to ice-cream for a tangy citrus flavour in Figure 5.13

	Our new snack pack range is the perfect addition for your lunchbox. Great for snacking on the go, they are a Source of Antioxidants, 99% Fat Free, Gluten Free, Nut and Preservative Free (no sulphites). *Angas Park Cranberries 180g* *Angas Park Cranberries, Flame Raisins & Blueberries 210g*
	Australian Seedless Muscatels are deliciously sweet with a natural muscat flavour. Use them in baking when you are looking for that elegant muscat flavour, or snack straight out of the bag. They are Australian Grown, Gluten Free and a Source of Antioxidants.

	Our range of enrobed dried fruit comes in four delicious varieties. Made with real fruit, they are a Good Source of Antioxidants, Gluten Free, Preservative Free (no sulphites) and have No Added Colours or Flavours. *Angas Park Cranberries in Dark Chocolate 125g* *Angas Park Cranberries in Greek Yoghurt 125g* *Angas Park Sultanas in Greek Yoghurt 125g* *Angas Park Sultanas in Dark Chocolate 125g*

Figure 5.13 Samples of Dried Fruit Packaging in Angaspark

Angas Park's natural and traditional art of drying fruit is one of the only methods where the natural flavour and nutritional benefits of the fruit is not lost by today's modern processing and refining methods. This allows us to enjoy the benefit of the best fruit all year round.

5.2.2.1.3 Prune Process

		
1	**2**	**3**
		
4	**5**	**6**

Figure 5.14 Prunes Process

1. The plums mature on the tree until they are fully ripe and have developed their maximum sweetness.
2. The plums are picked with a harvester. The harvester shakes the tree by the trunk; the fruit is caught on mats and collected in bins attached to the harvester. The fruit is then sorted for quality then washed and placed onto trays to be dried in dehydration tunnels.
3. The prunes (dried plums) are then graded into various sizes in preparation for processing and packaging.
4. As the plums lose so much moisture in the drying process, they are cooked in a continuous cooker for approximately 30 minutes, to replenish moisture back into the fruit to make them soft and juicy.
5. The pitting process which removes the stone from the prune, the fruit then passes through a laser scanner which is used to detect pit or pit fragments that may have occurred in the pitting process.
6. The now soft and juicy prunes then travel on a conveyor belt through a large cooling tunnel that gradually reduces the fruits temperature back to a level that is suitable for packaging.
7. The drying process preserves the natural flavour and nutritional value of the fruit.

5.2.3 Pineapple in Ausnat Fruit

Ausnat Fruits is a deliciously different homemade range of harvest fresh fruit, coated in the creamiest of chocolates and yoghurts or blended with the yummiest of syrups and liqueurs. Anne Battams is responsible for these mouthwatering mixtures. She created Ausnat Fruits when her passion for locally

grown fruit extended into value-adding to the family's fruit harvest. Their property is situated in the Riverland, South Australia's celebrated fruit region, and when Anne first dipped her dried oranges in chocolate and yoghurt, it was such a booming success, the range quickly grew.

Only top quality Australian grown fresh fruit makes it into the Ausnat Fruit range, which now also includes apricots, peach, pear and other dried fruit dipped in chocolate or yoghurt, as well as the ever popular, bottled Brandied Apricots in Wattleseed, Prunes in Port and Fruit Medley in Muscat.

Ausnat Fruits is Food Safe and HACCP Accredited, and packaging sizes, as well as gift baskets, can be made to suit individual client requirements. Ausnat Fruits' delicious range of gourmet goodies can be found at selected suppliers throughout Australia. Phone, fax and online orders are also welcome, with delivery available both within Australia & overseas.

Figure 5.15 Products of Ausnat Fruit

5.2.4 Regulation for Pineapple Industry Marketing from Asutralia Goverment

Australian pineapple production is regionally based. Virtually all pineapple production occurs in Queensland, with small quantities grown in northern New South Wales and the Northern Territory. About 75 per cent of Queensland's pineapple crop is grown between Brisbane and Gympie, with other producing areas being central Queensland near Yeppoon, the Bundaberg region and far north Queensland near Murtarnee.

There is one major processor, Golden Circle Limited, located at Northgate, a suburb of Brisbane. Approximately 65% of pineapple production is delivered to Golden Circle for processing. Approximately 155 growers produce pineapples for the fresh market and/or for the processing sector. Growcom is the peak industry body. In 2006, the industry formed a Pineapple Growers' Advancement Group made up of representatives of each of the nine pineapple study groups that have been formed to support the growers in the major pineapple producing regions of Australia. More than 75% of pineapple growers are actively involved with these study groups.

Horticulture Australia Limited (HAL), on behalf of Growcom, has made a submission to the Government to introduce a new statutory levy and export charge on pineapple growers for the purpose of undertaking marketing and research and development (R&D) through HAL as well as to pay for Plant Health Australia (PHA) membership and establish an Emergency Plant Pest Response levy.

The proposed R&D levy and PHA levy will be on pineapples sold either on the fresh market or directed to processing while the proposed marketing levy will be on fresh sales only. The emergency plant pest response levy is to be initially set at zero and only to be activated if a pest or disease outbreak occurs. The export charge will be implemented only on fresh sales. The levy and export charge will be collected at the first point of sale. Growcom expects the levy and export charge to raise approximately $320,000 annually.

Where a grower sells 30 tonnes or less of fresh pineapple to the public through retail sale (that is, direct to the consumer through roadside stalls, shed sales, farmgate etc) in a levy year, this fruit is to be exempt from levy.

The Queensland Government abolished a number of compulsory state agricultural levies in 2000 after receiving legal advice that it was unconstitutional for states to impose excise duties. Transitional arrangements to move affected industries from compulsory state levies to voluntary contributions concluded in 2003, including for the pineapple industry.

Before its abolition, the state pineapple levy had funded R&D projects and promotion activities. Since 2003 there has been minimal investment by the pineapple industry in R&D or marketing. Growcom provided limited funds for maintenance of some existing R&D programs, critical future R&D and PHA membership since 2003. The R&D expenditure was paid to HAL in the form of voluntary contributions. The Australian Government has matched the R&D expenditure funded from these voluntary contributions.

This period of non-investment since 2003 has resulted in critical issues, particularly related to pest and disease control, emerging in the industry. An example is the withdrawal of the essential chemical controls and the need for further R&D to identify alternate control methods or gain appropriate registrations of existing chemicals. The industry needs to invest at least $600,000 over the next three years to address chemical replacement issues alone.

Also, the Australian Pineapple Strategic Plan 2007-2012 outlined the current reality facing the industry as being:

- increasing global competition in the pineapple processing sector;
- imminent global competition in the fresh pineapple sector;
- poor grower and supply chain profitability;
- changing industry leadership and farm succession;
- variability of fruit quality and supply through the year; and
- poor consumer awareness and knowledge about pineapple.

Failure to address the current realities means the industry is characterised by:

- a high domestic market focus and dependence;
- low consumption levels and increasing competition for the consumer dollar;
- product variability causing consumer dissatisfaction in fresh market pineapples; and

- lack of volume and product identity in fresh market pineapples.

The Strategic Plan outlines that considerable industry investment is required as the industry moves into a period of intense global competition, rising costs and declining farm numbers. The broad industry objectives identified in the Plan are:

- to improve consumer demand for Australian pineapple products;
- to improve industry competitiveness; and
- to improve industry leadership, unity and communication.

The objective is to enable the pineapple industry to establish a more substantial and consistent source of funding for R&D and marketing initiatives identified by the industry. This will give the industry a greater capacity to finance a range of R&D and marketing programs that will help undertake key projects identified in the strategic plan which relate to:

a. ensuring effective pesticides are available and registered to control important pests and diseases;
b. adoption of best practice management through industry study groups and other activities; and
c. enhancing industry information flows through the employment of an industry development officer.

5.2.4 UniSA as a Collaboration University

As a developing country, Indonesia has to study about the Australian SMEs and how to develop Australian SMEs in effectively acquiring and applying system engineering process. Thereby pineapple Riau SMEs can improve their system capability. The primary benefit of doing systems engineering is that it will reduce the risk of schedule and cost overruns and will provide a system of higher integrity. One of the members of International Council on System Engineering (INCOSE) is Dr. Timothy L.J. Ferris. He is a senior lecturer in University of South Australia. We have received Letter of Agreement for collaborative research to study more about Australian SMEs using system engineering. But in October, 2015, Tim move to UK and Tim was change to Prof Yousef Amer, PhD.

Merry Siska and Prof Yousef Amer as a supervisor in UniSA

5.2.5 Packaging Design Recommendation

Packaging design recommendation is determined on the result of concept development.

1) Recommendation for Color Design

Color used for the packaging design is combination of yellow and green, based on VoC that the packaging uses bright colors, and the packaging uses colors that suits the characteristics of the product.

2) Recommendation for Shape Design

The shape design for packaging is standing pouch, because it fulfills the requirement of the packaging has a distinctive shape and the packaging has the shape that suits the characteristics of the product. A standing pouch is rather unique, compared to the shape of normal pouch. It also fits the characteristics of a product, since standing pouch is used for product shaped like chips.

3) Recommendation for Material

Selection for material has to be done carefully, because not only important for the product but also material can give perception for the quality of the product. The material chosen for the packaging is aluminum foil. Aluminum foil has often used

for food packaging, because it is safe for the food itself, and is able to protect the content.

4) Recommendation for Design Images

Images will help to attract the customer, and also communicating the product to the customers. The recommendation images for the packaging are picture of *kerupuk* and pineapple. The product itself is a *kerupuk*, an Indonesian chip made from pineapple. Thus, the researcher has decided to use picture of *kerupuk* and pineapple on the packaging.

6) Recommendation for Logo and Tagline

Logo chosen for the packaging is the combination mark, which has both symbol and text in it. The symbol depicts simplicity, showing that the company will keep it simple but attractive. The text "Aroma Rasa" is made to help customers to know and distinguish the product.

7) Recommendation for Label Position

The recommendation for label position is the brand, logo, tagline and images are on the front side of the packaging, while other information products are on the back side of the packaging. The brand, logo, tagline and images are placed on the front side to help customers spot the product and immediately attract them. The product information are placed on the back side, so that the front side is not too full with text and images and people will be able to read the information clearly.

8) Recommendation for Font Design

Recommendation for font design is using font Showcard Gothic for the brand, and Arial for the information. Showcard Gothic is unique, attractive, while also easy to read. This font also common in use of food packaging, therefore this font is suitable for the packaging. Font Arial is easy to read, and therefore is the most suitable for the packaging information.

Chapter 6
Conclusion and Recommendation

6.1 Conclusion

1. Find out facts related to the problems faced by Riau pineapple SMEs

   There are many of pineapple chips SMEs in Kampar, such as Usaha Baru Ibu, Aroma Rasa, Dua Saudara dan Sampurna. The Problem that we find in this SMEs especially for marketing is the packaging of pineapple chips. Beside that, other problems that we find are energy, capital, raw material, machine, price of supporting material and market
2. Do needs and requirements analysis by creating House of Quality (HOQ) as System Engineering tools to improve Riau pineapple SMEs capability.

   Based on House of Quality in Table 4.4, the 3 top ranking for percentage are the taste of pineapple chips (9.13%), Printed out of packaging (7.97%) and the advertisement (6.91%).
3. Use Islamic approach to improve Riau pineapple SMEs capability.

   In Islam, Marketing is not confined with buying and selling or telling and getting profit or about goods and services under any business. All activities and transactions are considered as worship in Islam
4. Study of South Australian SMEs.
   a. Angas Park Dried Apricots make a tasty and nutritious snack. Like all dried fruit, apricots are high in fibre, low in fat and cholesterol free.
   b. Ausnat Fruits is Food Safe and HACCP Accredited, and packaging sizes, as well as gift baskets, can be made to suit individual client requirements

6.2 Recommendation

To improve capability of Riau Small and Medium Enterprises there are many ways such as:

1. Improve packaging of dodol nenas and pineapple chips to attract customer
2. Improve the capability of Riau pineapple small and medium enterprise, industries can make new packaging or by produce pineapple become:
   - Dried Pineapple

- Eggless Pineapple Upside down Cake
- Pineapple Jelly
- Pineapple fritters

3. Using Islamic approach and HOQ to improve capability of Riau pineapple small and medium enterprise
4. Improve consumer demand for Australian pineapple products;
5. Improve industry competitiveness; and
6. Improve industry leadership, unity and communication.

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