# THE IMPACTS OF PRODUCT RECALL OF HALAL PRODUCTS

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Abstract-Halal product is complying with Islamic principles in syariah law. It is demanding by the customers due to the concept of halal and thoyyib (clean) in its processing. Halal product is not only for Muslim, but also for all people in the world including non-Muslim. Many customers demand for halal product because of confidence level during the processing from farm to fork which contribute positive impacts to the company. However, there are some problems with the products that might be recalled from the market place which give significant impact to the performance of the company. Thus, this paper aims to explore the impacts of product recall of Halal products to the manufacturers and the approaches used by the company to recover negative impacts to the company. Lastly, the result showed that the company initiated several aspects to improve Halal policy management to recover customers' confidence, image and loss of costs.

Keywords: Product Recall, Halal Products

#### 1. Introduction

The *Halal* industry is a growing sector in the Malaysian manufacturing sector and is the fastest growing global business across the world (IP, 2011). The *Halal* market creates lucrative businesses related to *Halal* products and related services (The *Halal* Journal, 2010). Thus, product recall impact is important to maintain the users' confidence to *Halal* product consumption. According to Mohamed (2011), *Halal* foods are food permitted under the *Shariah* law which fulfills conditions, namely (a) does not contain any parts or products of animals that are non-*Halal* to Muslims or products of animals which are not slaughtered according to *Shariah* law; (b) does not contain any ingredients that are najs (filth or unclean) according to *Shariah* law; (c) is safe and not harmful; (d) is not prepared, processed or manufactured using equipment that is contaminated with things that are najs according to *Shariah* law; (e) the food or its ingredients do not contain any human parts or its derivatives that are not permitted by *Shariah* law; and (f) during its preparation, processing, packaging, storage or transportation, the food is physically separated from any other food that does not meet the requirements stated in items (a-d) or any other things that have been decreed as najs (filth or unclean) by *Shariah* law.

*Halal* assurance is the reason for consumers to purchase *Halal* products. This results in *Halal* assurance system to become an important element in an environment which has a big *Halal* market. As a global *Halal* hub, Malaysia has developed *Halal* standard as a guideline for companies to implement traceability system such as:

- 1. **MS 1500:2009** (E), *Halal* Food: Production, Preparation, Handling and Storage General Guidelines, Second Revision.
  - 2. MS 2424: 2012 Halal Pharmaceuticals General Guidelines.
- 3. **MS 2200: Part 1: 2008**, Islamic Consumer Goods Part 1: Cosmetic and personal care General guidelines.
- 4. **MS 2200: Part 2: 2012**, Barangan Gunaan Islam Bahagian 2: Penggunaan Tulang, Kulit dan Bulu Haiwan –Garis Panduan Umum.
- 5. **MS 2400 1:2010,** *Halalan*-Toyyiban Assurance Pipeline- Management System requirements for transportation of goods and/ or cargo chain services.
- 6. **MS 2400 2:2010**, *Halalan* Toyyiban Assurance Pipeline- Management system requirements for warehousing and related activities.
- 7. **MS 2400 3:2010**, *Halalan* Toyyiban Assurance Pipeline- Management system requirements for retailing.
- 8. MS 1900:2005, Quality management systems Requirements from Islamic perspectives
- 9. MS 2300: 2009, Value-based management system Requirements from an Islamic perspective.
- 10. **MS 2393: 2010** (P), Prinsip Islam dan *Halal* Definisi dan Penjelasan Istilah. (*source* MITI, 2014).

Kaletunc and Ozadali (1999) quoted a recall as a process of removing the product from the market which does not follow the legislative requirement. Product recall such as food recalls has potential to challenge the integrity and reliability of food systems at each company (Charlebois, 2011). Due to the product recall, consumers may stop using the product, or not purchase the product at all (Siomkos and Kurzbard, 1994). This statement shows that every producer must conscious and alert on quality and safety of the product in order to avoid product recall in their company.

### 2. Literature review

#### 2.1 Product recall

Rengan and Sriprada (2009) stated that a recall is the last step in the traceability chain that attempts to limit liability for corporate negligence and avoid negative publicity. Rikard (2006) indicated that when product is received, information regarding product type, lot number and the name of the shipping and transportation companies must be captured with a bar code scanner and recorded. This is important for each manufacturer and distributor to develop their traceability policies as key information to find and remove defect product from the marketplace (FDS, 2012). Therefore, it is crucial for companies to have a robust recall plan to reduce such negative impacts. In addition to having a recall, it is critical that the plan is tested well in advance to ensure efficient, quick and timely crisis prevention and public safety.

#### 2.2 Impacts on food recall to producer/ manufacturer/company

There are many costs associated with a product recall such as costs of conducting a recall, the cost of losing customer's goodwill and damage to the brand name (Simonsen and Lippincott, 2008). Recalls contested by manufacturers have a significant negative impact on manufacturers' image, as well as on consumers' loyalty and intentions and reputation (Pepe, Abratt & Dion., 2011; Gurau and Serban, 2005). Rozita and Norzaidi (2012) reported that brand trust and brand equity as critical factors related to consumer buying behavior that might effect to the company reputation. Souiden and Pons (2009) identified that product recalls have continued to increase over the last two decades which governmental bodies reported 507 recalls affecting American manufacturers as opposed to 66 recalls for Japanese manufacturers. Kumar and Budin (2006) added that the effect of a recall in the US markets on export markets can be jeopardized in several ways when a product has to be removed from the shelves or pulled back from a distributor.

#### 2.3 Procedures for Product Recalls adopted by JAKIM

JAKIM adopts the following procedures for its product recall practice:

- i. Company must have written procedures on recall system to ensure identification of product recalls from the market. JAKIM will recall the products in instances where it found illegal elements, fosterage, or pollution in the products. JAKIM also may initiate recall if it receives complaints from consumers on *Halal* status. JAKIM also will act upon the directives from other relevant authoritative bodies.
- ii. Examiners must ensure that the company withdraws all distributed products in (batches) whether from the agents or distributors.
- iii. Examiners must ensure that the company initiates the recall immediately upon evidence in the condition (i).
- iv. If the examiner is not satisfied with the action of recalls made by the company or found that the product is still in the market, the company will be asked to make public announcements.
- v. If the company refuses to make public announcements then JAKIM should do so.
- vi. A copy of the order of recalls shall be sent to the Ministry of Domestic Trade, Cooperatives and Consumerism (Kementerian Perdagangan Dalam Negeri Koperasi dan Kepenggunaan, KPDNKK) and the Ministry of Health (Kementerian Kesihatan Malaysia, KKM) )or other relevant agencies.
- vii. If the company refuses to follow the order, then JAKIM should withdraw the *Halal* Certificate, or make a public announcement and finally enforce the law on the company.
- viii. The examiner shall ensure that the company takes action against the product recalled using appropriate or available methods such as disposal repair or re-process.
- ix. The examiner shall make a review of the record of recalled product in terms of product, brand, date, process, product number, method of recalls and the actions of the recalls products.
- x. Any destruction action of recalls products shall be supervised by JAKIM/ JAIN's officers or related agencies.

Table 1 shows the numbers of products recalled by JAKIM according the category of business. The highest recalls are for products (78 percent), followed by hotel and premise (20 percent) and slaughterhouse (2 percent).

Year	Category			
	Product	Hotel/Premise	Slaughterhouse	Total
2010	11	4	-	15
2011	26	3	1	30
2012 (up to March 2012)	2	3	-	5
Total	39	10	1	50
Percentage	78%	20%	2%	100%

#### Table 1: Numbers of Product Recalls by JAKIM from Year 2010 to 2012

(Source: JAKIM, 2012)

### 3. Research Methodology

This study implemented the case study method, using interviews with the personnel within The Company XX to gain deeper understanding of the management, production and system practices and processes. In this case study, a company listed on the main board of *Shariah*-approved securities on Bursa Malaysia is selected and hereafter will be referred to as The Company. The Company was established in 1960 and has had 51 years of experience in bread and confectionary. The Company has applied a traceability system in their production and management processes for their record.

The interview was conducted with 3 personnel of The Company, which comprises of a General Manager, a *Halal* Committee member, and a Production Committee member. A series of face-to-face and telephone interview were conducted to obtain data on the use of *Halal* traceability system regarding product recall and the measures taken by the company to mitigate the negative impacts from product recall.

#### 3.1 Data Collection

The main instrument for data collection in this study is by using interviews. The researcher used interviews because it could be particularly useful for getting the story behind a participant's experiences as the interviewer can pursue in-depth information around the topic being discussed.

#### **3.2** Business Description

The Company is a Malaysian based investment holding company. It is classified by the *Shariah* Advisory Council (SAC) as a *Shariah* compliant securities listed on Bursa Malaysia. The Company operates in two segments which are manufacturing and distribution of consumer food and distribution of telecommunication products. It has 13 subsidiaries, including Subsidiary A,

which is engaged in the manufacturing of bread, while Subsidiary B is engaged in the manufacturing of frozen and daily fresh/shelf-stable bakery goods. Another subsidiary is Subsidiary C, which is engaged in the sales and distribution of bakery goods and telecommunication products.

The Company produces products such as breads, baking ingredients, cakes, cereals, energy drink, snacks and spreads. All the products are certified *Halal*. It is normal practice, before a new product is processed and marketed, the production committee and quality assurance committee will collaborate with the *Halal* committee to obtain *Halal* certification for the product. Upon obtaining approval from JAKIM, the product will be processed and launched. This guarantees that all products from this company have *Halal* certifications from JAKIM.

### 4. Adoption of *Halal* Traceability Elements in the Company XX

From the interviews, seven elements of traceability system have been applied in the management and production processes of The Company. According to the General Manager, a traceability system has been implemented in the company's production several years ago. It was to ensure high quality products are in line with the market requirements compared to other companies. Indirectly, this has enhanced The Company's reputation and improves customers' confidence. They also see an increasing demand from customers for healthy food which indicate a pertinent requirement for a well structured traceability system. This system aids them in maintaining their branding, ingredients, *Halal* compliance, and reputation.

The management of The Company feels that *Halal* certification exercise affects the company's net profit. The reason is that Muslim customers buy The Company's products because they carry the *Halal* certificate issued by JAKIM (i.e. a government authority that issues the *Halal* certificate). Consequently, The Company consistently ensured that the *Halal* certification obtained is from JAKIM and not from other existing private companies issuing *Halal* certificates. *Halal* certification also provides a validity check for users to ensure the *Halal* food status. In terms of food safety, *Halal* Food Standard such as Malaysian Standard MS 1500: 2004 *Halal* Food - Production, Preparation, Handling and Storage is used as a guide to maintain efficient and effective process flow.

### 4.1 Certification

All the Company's products are certified *Halal*, so consumers should be confident about the cleanliness of the raw materials or ingredients used. According to the representative of the *Halal* committee, The Company would apply for *Halal* certification of its products 3 to 4 times per year. These applications are for new products to be launched besides renewal of the existing products. Before they start the production for a new product, the Quality Assurance (QA) department will send a list of new products together with a list of ingredients used and the source of the ingredients to the *Halal* committee for *Halal* approval. The *Halal* committee will verify the raw materials used with JAKIM to see if all the raw materials to be used are certified *Halal* by JAKIM. The QA department will then proceed with the production processes and at the same time the committee will apply for the *Halal* certification from JAKIM. *Halal* certification application takes about 6 months for approval. As for JAKIM, it adheres to the ISO 9001: 2008

Guideline, and any delays on the issuance of *Halal* certificates only arise when the traceability documents indicating the *Halal* status of all ingredients are incomplete.

### 4.2 Food safety

For safety and hygiene, The Company has introduced the food safety policy in order to ensure that all the products satisfy customers' satisfaction and sustain customers' confidence. The manufacturing and processing of bakery and confectionary products also controlled their source of raw materials, the production processes to ensure products are safe for consumers. The food safety policies of this company are (a) committed to maintain the effectiveness of Food Safety Management System (ISO 22000:2005) through monitoring and reviewing of the actual performance of established food safety objectives, (b) conform to the legislation, regulation and relevant standard codes related to food safety, (c) continuously improve the operation through adoption of effective Food Safety Management System (ISO 22000:2005) requirement whilst incorporating research and development, (d) be at the forefront of product innovation and creativity to ensure further commitment to food safety while being result oriented at all times and lastly, (e) keeping the policy at strategic locations and communicated to all levels of organization.

### 4.3 Legislation

The Company has conformed to the ISO22000:2005 for Food Safety Management System assessed by Lloyd's Register Quality Assurance, United Kingdom which enhances their processing quality and hygiene standards. This company also uses HACCP and Malaysian Standard MS 1500: 2004 *Halal* Food - Production, Preparation, Handling and Storage - General Guidelines as a guideline for production and processing of products.

### 4.4 **Documentation sustainability**

Sustainability in documentation is very important in order to maintain effective traceability system. The company uses a documentation system during processing and production that is very systematic, which assists them in identifying problems and the root cause of each problem. This system is also centralized, making it easier for officers to control the system and keep important documents and information in the system.

### 4.5 Competitive advantage

The Company also markets its products to the United Arab Emirates (UAE) and other countries. Every year, two or three new products are introduced. This company also uses high technology production system that can produce products at lower cost and saves time. In Singapore, The Company's brand is one of the popular products for bakery and confectionary. The Group Managing Director said 'Right now, we are *Halal* but we want to concentrate on it more. Our export market is 25 percent, but with this new concentration we aim to grow more'. This is one of the changes made by this company in expanding their market and realizing the fact that most of their customers in Malaysia are Muslims.

#### 4.6 Chain communication

Companies need to understand that customers are constantly surrounding themselves with their own ideals; they are building a world of their own. As producers and manufacturers, they must strive to understand that global consumers' demand is changing and ask themselves how they can be a part of it. For the long-term success of The Company, they should always receive feedback from consumers to enhance and improve the quality of their products. Companies should also have a strong relationship with relevant authorities such as JAKIM, the Ministry of Health (MOH), Universiti Putra Malaysia (UPM) and other institutions in order to seek guidance regarding *Halal* issues. When problems on *Halal* matters arise, they should refer to JAKIM to ensure that decisions taken are appropriate and do not violate ethics or procedures of *Halal* certifications.

#### 4.7 Labor/cost reduction

The use of technology during the production is a vital strength of the company and it also helps them in reducing the cost of production. Labors are only used at the end of the production line. Labor is also reduced during the other line of production, because of the high temperature, and the environment in the factory itself that takes care of the hygiene environment. A combination of sophisticated European and Japanese Technology is also employed at this factory. This is to ensure that the highest level of production standards needed to deliver the quality products for the market demand is used. The use of traceability system in this company also ensures them in reducing cost by reducing time in tracing any problems that occurred and its causes. The cost of implementing traceability is significant, but the cost of not having one can be far higher. The cost of not having a traceable system is effectively an export barrier and a limit to market access. Traceability has already become a minimum cost of entry into international business.

### 5. Impacts of Product Recall on the company

In 2006, The Company faced a large case where all its products were withdrawn from the market because of the complaints made on factories using gelatin, which is *Haram*. This occurred at the factory in Nilai, Negeri Sembilan. Both financial impacts and non-financial impacts were studied in the case.

#### 5.1 Financial impacts

The incident cost the company about RM 50 million in loses, and The Company suffered from the loss for several years. Even now they are still at the stage of restoring The Company's reputation. It is very difficult for them to get as many customers as before to be confident of their products again. The incident also had a big impact in Singapore because their products are exported to Singapore as they have 15 percent market share in Singapore.

Financial Year Ended 31 October RM'000	2010	2009	2008	2007	2006
Revenue	593,505	588,890	638,563	606,484	597,991
Revenue Growth	1%	-8%	5%	1%	23%
Operating Profits/ (Loss)	10,396	8,711	-14,431	7,615	-26,299
Profit / (Loss) Before Tax	3,644	1,436	-23,134	-18,397	-49,548
Profit / (Loss) After Tax	3,644	1,433	-21,275	-16,077	-48,370
PAT Growth	75%	107%	-32%	67%	-318%
Total Shareholders' Fund	197,374	142,399	141,810	112,612	119,665
No of Share in Issue	386,682	314,180	314,117	235,538	210,638
Net Margin (%)	0.1	0.2	-3.3	-2.7	-8.1
Net Assets Per Share (sen)	50	45.3	45.1	48.1	55.5
Gearing (net of cash)	0.47	0.88	0.99	1.34	0.9

Table 1: Five Year Group Financial Highlights

(Exchange rate 1 USD = MYR 4.11 as for 19 August 2015)

2015)

From the financial highlight above, we can see the implications from the product recalls. Before the incident, the company's revenue growth was 23 percent from year 2005 to year 2006. However, in 2007, their revenue growth decreased to 1 percent. In 2008, after two years since the incident, revenue increased minimally at 5 percent rate from the year before. In 2009, the growth figure was at a negative figure of 8 percent from the year before. In 2010, The Company witnessed a small increase of revenue by only 1 percent.

### 5.2 Non-Financial Impacts

Product recall presents a major crisis for manufacturers and suppliers. It can cause damage to the brand integrity, the corporate reputation and brand image. It also causes negative customers' perception on The Company's management.

In order to solve this problem, the marketing and promotion departments were assigned to gain customer awareness and to recover Muslim's confidence from the negative publicity on the *Halal* status of their products. To recover customers' confidence and satisfaction, The Company adopted several strategies. One of the strategies that can be applied is brand positioning, which has great influence on customers' perception and preference. The Company can also use promotional strategies in order to gain customer awareness of their products.

## 6. Improvement on *Halal* Compliance Management

The company has initiated some approaches and improved several aspects to recover negative impacts on its *Halal* management such as *Halal* Integrity, *Halal* Mission, *Halal* Policy and *Halal* Integrity Committee as follows:

### 6.1 Halal integrity

The Company is the largest local bakery company in the country. Therefore, it is the company's aspiration, desire and responsibility to support the Government's efforts to make Malaysia as the point of reference for *Halal* integrity and to become the *Halal* hub of the region. In fact, the company has obtained *Halal* certifications through Bahagian Hal Ehwal Islam Malaysia (BAHEIS), Jabatan Perdana Menteri and *Halal* Industry Development Corporation (HDC) years before JAKIM took over. And now, the company is working closely with JAKIM as the new Malaysian and international body for *Halal* certifications.

All subsidiary companies of The Company, namely Subsidiary A, Subsidiary B and Subsidiary C have been observing *Halal* standards and practices for the benefits of their consumers. They use only certified *Halal* ingredients recognized by Islamic bodies in the preparation of their products and their premises have been inspected regularly which is necessary to earn the *Halal* certifications.

In 2000, Subsidiary A and Subsidiary B were assessed by Lloyd's Register Quality Assurance, UK which enhanced the processing quality and hygiene standards in conformance to ISO22000:2005 for Food Safety Management System. Furthermore, The Company is classified by the *Shariah* Advisory Council (SAC) of Securities Commission as *Shariah* compliant securities listed on Bursa Malaysia and since 2002 The Company has been successfully listed on the Second Board of the Bursa Malaysia and successfully transferred its listing to the Main Board of the Bursa Malaysia in 2004.

#### 6.2 Halal Mission

The Company's missions for Halal policy are to:

- 1. Ensure the conformance of *Halal* Policy by the company for the production and marketing of every product.
- 2. Apply and obtain the *Halal* Certificate for each product.
- 3. Provide training and information to staff pertaining to concept and requirement of *Halal*.
- 4. Assist the Research & Development Division in producing new products that are *Halal*.

### 6.3 Halal Policy

The Company always conforms to the Malaysian *Halal* Standards MS1500:2004 in producing its products to ensure that the food produced is *Halal*, hygienic, fresh, clean and pure for the consumption of all. The reliability of the process starts from the control of raw materials, which are ingredients, manufacturing, producing, cooling, packaging, storing and distributing of the product so that it is safe and nutritious to eat. The Company also ensures that product manufactured for the Group either made locally or imported conforms to *Halal* standards of Malaysia and the country of origin.

### 6.4 Halal Integrity Committee

A committee was officially formed in October 2004 to supervise the implementation of *Halal* Standards by the company. The committee is represented by Muslim employees from the relevant departments such as Production, Quality Assurance, Research and Development (R&D), Logistics, Consumer Foods Division (Marketing), and Purchasing. Since October 2006, the committee appointed an officer with *Shariah* background to assist the committee itself and the company as a whole in providing guidance of *Shariah*-related matters. All members of *Halal* committee are Muslims and they are from critical departments which are Purchasing, Production, Quality Assurance, Marketing, Logistics and R&D.

#### 7. Conclusion

The case highlighted the impacts of returning the *Halal* products from the market place. The company implemented full scale traceability procedure that adheres to the *Shariah* requirements for *Halal* production. Such traceability procedures resulted in the adoption of a *Halal* traceability system to recover loss and damage of company. The summary of the main findings may be referred to by other similar companies facing product recall problems. The paper highlighted the use of *Halal* traceability system that can be utilised by other manufacturers in *Halal* production to avoid costly product recall. It is recommended that adoption of a traceability system in *Halal* production companies be studied further for comparative purposes so that measures on product recall can be improved.

### References

- Charlebois, S. (2011). Food Recalls, Systemic Causal Factors and Managerial Implications: The Case of Premiere Quality Foods. British Food Journal, 113 (5): 625-636.
- Food Decision Software (FDS). (2012). Food Distribution and Food Manufacturing. Online. http://www.food decisionsoftware.com/recall\_plan. Retrieved on 14th March 2014.
- Gurau, C. and Serban, A. (2005). The anatomy of the product recall message : The structure and fuction of product recall messages published in the UK press. Journal of Communication Management, 9 (4): 326-338.
- Invest Penang (IP). (2011). Halal A New Growth Area. Online. http://www.investpenang.gov.my/portal/bisness-sector/eae-sector/hala-industry.html. Retrieved on 13th March 2014.
- Jabatan Kemajuan Islam Malaysia Malaysia (JAKIM). (2014). List of Non-Conformance Reports. Online. http://www.halaljakim.gov.my/. Retrieved on 13th May 2014.
- Kaletunc, G. and Ozadali, F. (1999). Understanding the Recall Concept in the Food Industry. Online. http://ohioline.osu.edu/aex-fact/0251.html. Retrieved on 13th March 2014.
- Kumar, S. and Budin, E.M. (2006). Prevention and Management of Product Recalls in the Processed Food Industry: a Case Study ased on an Exporter's Perspective. Online. http://140.130.204.27/course/download/slhsu/recall%20management.pdf. Retrieved on 13th April 2014.

- Ministry of Agriculture, Food and Rural Affairs (OMAFRA). (2011). Benefits of Traceability for Food Processors. Online. http://www.omafra.gov.on.ca/english/food/foodsafety/ traceability/benefits processors.htm. Retrieved on 25th May 2014.
- Ministry of International Trade and Industry (MITI). (2014). Malaysian Halal Standard. Online. http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.section\_8ab65e4b-7f0000107 2f772f7-ce3196c6. Retrieved on 20th May 2014.
- Mohamed, A.H. (2011). Food Traceability and Halal Traceability Tracing System. Online. http://www.gs1my.org/SharedImages /Library/pdf/F\_379.pdf. Retrieved on 13th May 2014.
  - Pepe, M.S., Abratt, R and Dion P. (2011), The Impact of Private Label Brands on Customer Loyalty and Product Category Profitability. Journal of Product & Brand Management, 20 (1), 72-80.
- Rengan P, K. and Sriprada KS. (2009). Product Traceability and Recall planning. Online. http://www.wipro.com/documents/insights/whitepaper/Product\_Traceability\_and\_Recall\_Pl annin g\_final.pdf]. Retrieved on 25th April 2014.
- Rozita, N. M., and Norzaidi, M. D. (2012). The Impact of Religious Sensitivity on Brand Trust, Equity and Values of Fast Industry in Malaysia. Business Strategy Series, 13 (1): 21-30.
- Simonsen, J.E. and Lippincott, K.M. (2008). Product Recalls and Managing the Risks of a Defective Product. Online. http://www.carrmaloney.com/elements/articles/PRODUCT \_RECALLS.pdf. Retrieved on 20th May 2014.

Siomkos, G. J. and Kurzbard, G. (1994). The Hidden Crisis in Product-Harm Crisis Management. European Journal of Marketing, 28 (2): 30-41.

Souiden, N. and Pons, F. (2009). Product Recall Crisis Management: the Impact on Manufacturer's Image, Consumer Loyalty and Purchase Intention. Journal of Product & Brand Management, 18 (2): 106.