

Halalan Toyyiban Warehouse Performance Model: An Adapted Balanced Scorecard Approach

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Abstract—In guaranteeing the halal integrity of the entire supply chain from farm to plate, halal logistics capabilities are critical. Warehouse activities and processes play vital role in protecting the Halal integrity for Halal products. Measuring the effectiveness and efficiency of the halal warehouse operation is essential. This study aims to propose elements to be considered in measuring the effectiveness of Halal Toyyiban (HT) warehouse providers in providing their halal service. A balanced scorecard model that captures on the issues and challenges experienced from HT warehouse providers, a Halalan Toyyiban Warehouse Performance Measurement (HTWPM) Model is proposed.

Keywords—Halalan Toyyiban, warehouse, balanced scorecard

I. INTRODUCTION

In a business-oriented organisation, the objective of warehouse management is to minimise cost and maximise profit while the objective of Halal warehouse is to ensure Halal integrity of Halal product for end consumers. Conventional and halal warehouse have its own goal and target achievements [1]. However, there were various studies showing that despite implementing the Halal-Toyyiban practice, additional implementation cost did not reduce the output by more than 10 percent [2,3]. For Halal warehouse, it is important to ensure that no contamination happens but possibilities for cross-contamination exist in conventional logistics warehouse process. This dictates the needs for segregation of Halal and non-halal products required in the Halal warehouse, however no separation among various products are done in a conventional warehouse. Remarkably, for both types of warehouses, materials handling is an important activity. Products must be received, moved, stored, sorted and assembled to meet customer order requirements. Halal warehousing activities strictly emphasize on separating of Halal goods and non-Halal goods to avoid cross-contamination [4], not only in the rack, but also tools such as pallet or load carrier used to handle them [5,6]. In fact, the important arguments that Halal products need Halal compliance for warehousing activities is because there is evidence showing that goods spent more time in warehousing compared to other distribution

processes like packing, transportation and other transformations processes [5].

This research aims to recognize the requirement of Halal and Toyyib quality service for Halalan-Toyyiban Warehouse Service Providers. In this research, the Malaysia Management Standards documents are reviewed and analyzed in order to determine the input models that cover the requirements of Halal and Food safety (Toyyib) operation in managing warehouses. It is also to ensure the Halalan-Toyyiban practice is correctly implemented as well as the elements of shariah-based quality management is maintained at the desired level of activities.

Balanced Scorecard is the strategic management tool which employs performance metrics from financial, customer, internal processes, and growth perspectives. By combining these different perspectives, BSC helps managers to understand the inter-relationships and trade-offs between alternative performance dimensions, thus leading to improved decision making and problem-solving. The use of a balanced scorecard helps in examining all the areas in Halal warehouse operations that may affect results and it can also help in improving efficiency and effectiveness in warehouse operations management, thus promoting better structure, management and success. Competitive strategy and the BSC has been shown to have a significant relationship in an organizational's performance [7], which indicated that the BSC has been well accepted as a reliable tool for business operations. Still, the difficulty in the implementation of BSC is the identification of strategies that represent the most critical performance aspects of corporate operations [8].

The BSC is used in this research because it can be an ideal tool for warehouse organizations to assess and measure their Halalan-Toyyiban culture. Rather than giving a measure of only the incidents and non-compliance statistics that a warehouse might have, the BSC attempts to provide a holistic and value-based balanced report, not only as a performance measurement exercise and but also as a management tool to describe, communicate and implement strategy [9].

II. MATERIAL AND METHODS

The aim of this study is to develop Halalan-Toyyiban Warehouse Performance Model by constructing the performance measure the goal based on two different case studies which are:

1) Input Models Case Study: A Case study of various related-Halalan Toyiyban Malaysia Management Standards in order to recognize the requirement of Halal and Toyiyb Quality service for Halalan-Toyyiban Warehouse Service Providers (HTWSP), and

2) Company Case Study: Case Study of Service Providers Companies, by interviewing participants with open-ended questions to in-depth investigate warehouse performance issues, challenges, drivers, and strategies.

A. Development of Model

Based on information and data available from both case studies, Halal warehouse performance model is proposed by constructing the performance measurement goals and the performance indicators.

The performance measurement constructed from the previous stage are then mapped into Balanced scorecard (BSC) framework in Fig.1 [10].

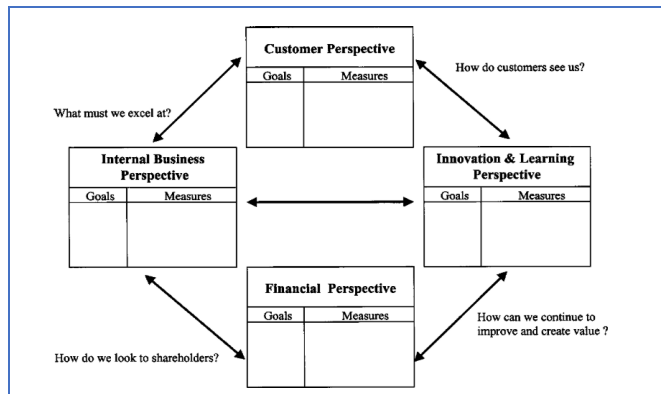


Fig. 1: Original balanced scorecard (Kaplan and Norton 1992)

III. RESULTS AND DISCUSSIONS

To effectively develop a halalan-toyyiban balanced scorecard that can meet its potential in measuring halalan-toyyiban culture, the four traditional perspectives, is proposed to be put in a different light [10]. The result still shows four perspectives but with slightly different names and content to meet the nature of the task.

A. Output 1 from Input Models – Content Analysis

As mentioned in the previous section, to define the required element in practicing Halalan-toyyiban, the input models case study was conducted. Four Malaysia Management System Standards were selected (Table 1), and the contents were analyzed. The results of this content analysis provided the core content of the determination Halalan-Toyyiban performance measurement model from the perspective of the Management System Standards and regulators.

Table 2 summarised the performance measure elements extracted from the four documents using PDCA (plan-do-check-act) analysis. However, only the first principle is

shared by all four-management system/standards, while the rest is a appear in at least two documents.

TABLE I. SOURCES FOR MANAGEMENT SYSTEM/STANDARDS REQUIREMENT

No	Model (Management System / Standards etc)	Aspect
1	MS 2400-2:2010 Halalan-toyyiban Assurance Pipeline - Part 2: Management System Requirements For Warehousing And Related Activities	Halal (Shariah), Toyiyb, Logistics Warehouse
2	MS 1900:2014 Shariah-based quality management systems - Requirements with guidance	Shariah, Quality
3	MS 1480:2007 Food Safety According To Hazard Analysis And Critical Control Point (HACCP) System	Food Safety (Toyiyb)
4	MS 1514:2009 Good Manufacturing Practice (GMP) For Food.	Food Safety (Toyiyb)

TABLE II. SUMMARY OF PERFORMANCE MEASURE ELEMENTS

No	Principle
1	Clear Halal Toyiyb Policy Establishment
2	Halalan Toyiyban Goals and Objectives
3	Effective Halalan Toyiyban Team establishment
4	Halalan Toyiyban Management
5	Human Resource Management & Competence Development
6	Communication & consultation Effectiveness
7	Operational Control
8	Evaluation

B. Output 2: Adaption to a real-world problem by looking at company case studies

The company case study was conducted to investigate the current practices and issues by using an unstructured interview data collection method. This type of interview is used to explore in detail the respondent's own experience, perceptions and accounts. The interviews started with very open questions. In-depth interviews help this research answer the first research question, which is "How Halalan Toyiyban service can be effectively done in halal warehouse?" To answer this question the interview aimed to cover. However, in this paper we only focus on the elements considered for measuring the performance of the Halalan Toyiyban warehouse.

- What are the issues and challenges faced to manage Halalan Toyiyban implementation?
- What are the key drivers and operation strategies to ensure Halaln Toyiyban implementation can be effectively done in warehouses?
- How do you measure the performance?

Table 3 summarises the basic profile of the companies and persons interviewed and Table 4 summarises the results from the interview.

As compared to content analysis from the four Management System/Standards, 6 elements are said to be considered in measuring the performance of Halalan Toyyiban warehouse. Details on the output of the interviews can be found in previous report [11].

TABLE III. BASIC PROFILES OF THE RESPONDENTS

No	Location	Respondent (Interview)	Warehouse Type	Products Specifications
1	Shah Alam	1 Halal Director 2 Halal Secretary 3 Compliance Admin	Cold Chain Warehousing	Air-Conditioning, Chilled Frozen Ambient
2	Shah Alam	1 Shariah Officer	Cold Chain Warehousing	Air-Conditioning Chilled Frozen Ambient
3	Penang	1 Quality Manager 2 Halal Committee member	Cold Chain Warehousing	Air-Conditioning Chilled Frozen Ambient
4	Shah Alam	1 Quality Manager	Temperature-controlled air-conditioning rooms	temperature sensitive products

TABLE IV. SUMMARY OF PERFORMANCE MEASURE ELEMENTS FROM INTERVIEWS

No	Principle
1	Management Commitment
2	Halalan Toyyiban management system effectiveness
3	Staff Competency
4	Communication
5	Customer Relationship
6	Operational Control

Hence as previous research suggested on the linking between Supply Chain Management and the balanced Scorecard [12], considering the results from the two case studies, this study proposes a Balanced scorecard framework for measuring the performance of Halalan Toyyiban warehouse (HTWMBS). As Balanced scorecard considers the four elements: Financial perspective, Customer Perspective, Business process perspective and learning Continuous Improvement, hence the output from Case Study 1 and 2 can be equated as in Table V.

TABLE V. LINKING THE HALALAN TOYYIBAN PRINCIPLES TO BALANCE SCORE CARD

Halalan Toyyiban		Balance Score card
Case Study 1	Case Study 2	
Clear Halal Toyyib Policy Establishment	Management Commitment	Financial perspective
Halalan Toyyiban Goals and Objectives	Halalan Toyyiban management system effectiveness	Customer Perspective
Effective Halalan	Staff Competency	Business process

Toyyiban Team establishment		perspective
Halalan Toyyiban Management	Communication	Learning Continuous Improvement
Human Resource Management & Competence Development	Customer Relationship	
Communication & consultation Effectiveness	Operational Control	
Operational Control		
Evaluation		

Fig. 2 incorporates the link in Table 5 to propose the conceptual framework of HTWMBS with four principles.

i) Learning and Continuous Improvement Perspective

There are three measures of intangible assets essential for implementing a strategy in the learning and growth perspective [13] which are i) human capital as competent staff that is well versed in both logistics as well as Halalan Toyyiban principle is needed in ensuring the success of Halalan Toyyiban implementation, ii) information and organization capitals are also needed. The measurement would be the optimal number of staff and number of Halal Executives in the organization.

ii) Internal Business Process

The traditional BSC mainly covered the internal business process, but the external business process is very important in SCM [14,15]. Therefore, the conceptual Halalan-Toyyiban Warehouse Management Balanced Scorecard (HTWMBS) extends the scope of measures accordingly and groups them into two: i) internal business process and ii) external business process.

- Internal business process perspective: the conceptual framework defines two strategic objectives in terms of the Warehousing Process and Halalan-Toyyiban Control. Warehousing process covers the Manufacturing Process, Inventory Management, Delivery, Flexibility and New Product Development measurements in which check will be done at each halal control points [2, 5,16].

- External business process perspective: the increased outsourcing of warehousing companies results in more focus on the external business process. Hence, the HTWMBS is expanded to include the external process with one objective: Improve Collaboration with Partners in which the partners must have the same vision. For example, the Halal products being kept in the warehouse need to be transported, hence the transporter must also comply to Halalan Toyyiban principles.

iii) Customer perspective

Two customers' perspective objectives are to improve service leadership and improve customer relationship, are relevant to warehouse management. The 'Improve Product Leadership' was changed to 'Improve Service Leadership' objective. This measure can make use of the conventional Supply Chain Management measure in terms of product

fulfilment and satisfaction. At the same time, Corporate image should be positioned to be linked with provider of Halal services, through Halal certification and halal audits [17, 18].

iv) Financial perspective

From the financial perspective, the HTWMBS adopts four objectives based on corporate BSC. The objectives are to Increase Profit, Increase Revenue, Improve Cost Structure, and Improve Use of Assets. Generally, the adoption of Halal orientation in warehouse activities definitely increase the cost of operation in terms of space (due to segregation requirement), storing at certain temperature, audit check and so on. However, due to the Halal image and awareness from the public, use of assets can improve the cost structure, increase the revenue as well as increase the profit [19, 20].

IV. CONCLUSION AND FUTURE WORKS

The Balanced Scorecard has incorporated the relevant performance elements identified from contents of Management Systems/Standard document for Halal Toyibban warehouses as well as input from the warehouse services providers. This conceptual framework provides the initial prototype of the performance measurement system. Hence, the next action is testing the relationship between all the relevant elements towards the performance of the warehouse and to be justified for the development of the performance measurement system.

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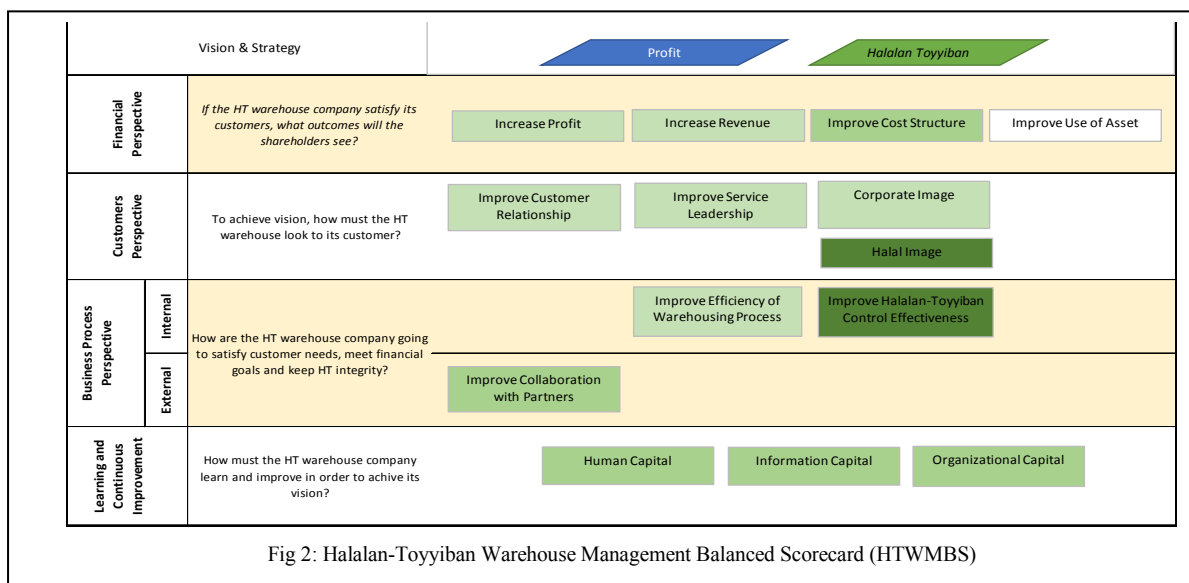


Fig 2: Halalan-Toyyiban Warehouse Management Balanced Scorecard (HTWMBS)