

INTEGRATED MANAGEMENT SYSTEM FOR QUALITY MANAGEMENT SYSTEM ACCREDITATION

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Article History: Received 12 August 2017; Revised 21 October 2017;
Accepted 4 December 2017

ABSTRACT: Over the years, Environment Management System ISO 14001 and Occupational Health and Safety Management System OHSAS 18001 are considered as the additional requirements dedicated to the management after Quality Management System ISO 9001 has been implemented. The integration of these management systems leads to the existence of Integrated Management System (IMS) that largely implemented. Nowadays, the increasing pressure and needs from customer or stakeholders make it compulsory for the organization to use the new system for standards. This study presents and discusses about the factors of integration, the components of the management system that converged and diverged; and the implementation strategy of IMS. Furthermore, in order to support the details in the framework, qualitative method was used which is through five (5) in-depth interviews with the senior managers and middle managers who are experts in this field. As a result, this research illustrated on how the IMS could be implemented for better quality management and towards sustainability practices in the organization.

KEYWORDS: *Integrated Management System; Management System; Sustainability Practice; Quality Management; International Organisation for Standardisation (ISO)*

1.0 INTRODUCTION

The management systems and standards become the main part of the organization's operation and one of the requirements to be fulfilled. The increasing pressure and demands from the stakeholders are the reason leads towards the continuous quality improvement of the

management system to become more flexible, effective and competitive in the industry. The continuous quality improvement is the key to long-term success and high performance of the organization [1]. These factors become one of the challenges for the management in developing an effective management system towards quality management in the organisation. Besides, it is necessary for the organisation to adopt the new system applications in order to enhance the standards systems and procedures that were already established in the organisation. There are different types of standards and it is depending on the management focus, product, process, result and management systems; and the management system are the most diffused standard in the worldwide [2]. International Standards Organisation (ISO) and the national standards institutes have developed management system standards that involve the quality, environment, occupational health and safety and others. The good things to have the interconnection between the management systems is by integrating all main management systems to become one coherent system and it is known as the Integrated Management System (IMS). The IMS that focused on quality, environmental and occupational health and safety management are becoming increasingly important as part of the organisation's management portfolio [3].

2.0 INTEGRATED MANAGEMENT SYSTEM

The IMS is a system that combines the components of management system into one coherent system. This system includes ISO 9001 Quality Management, ISO 14001 Environment Management and OHSAS 18001 Occupational Health and Safety Management but not limited to just these standards [4]. This implies that organisation need to take action for sharing tools, methodologies and systematic management of different areas, and to comply with the different standards or models governing the management systems [5]. IMS is the integration of the systems that are focused on quality, environment, and occupational health and safety along with the processes, practices and documentations. The effective way to manage them and to simultaneously benefit from the related synergies is by the integration of these management systems under one system.

When an organization has a certified Quality Management System (QMS), it can build upon that by adding the necessary processes to cater for health, safety, environmental and other requirements of management system standards and all systems should share the same process. However, there is an important addition that needs to be considered which is the risk assessment [6]. This is because it will address safety risks, environmental impacts and process failure modes. This requirement is all covered in the IMS practices.

3.0 RESEARCH METHODS

This research is an exploratory qualitative study, based on in-depth interviews. The qualitative is an approach to explore and understand the meaning of individuals or groups ascribe to the social [7]. Moreover, in qualitative data analysis, the study infers many empirical details of social life in order to identify the patterns or generalisations. The conclusion is reach by reasoning, simplifying the data complexity and abstracting from the data [8] and this method offers a way of finding out what people do, know, think and feel by observing, interviewing and analysing documents [9]. An exploratory study is a valuable means to ask open questions to discover what is happening and gain insights about a topic of interest [10]. There are 3 respondents from AUO SunPower Sdn Bhd (AUSP) and 2 respondents from SIRIM BHD which gives a total of 8 respondents. AUO SunPower Sdn Bhd is the joint venture between two companies; AUO from Taiwan and SunPower from the United States of America, which involved in the manufacturing of solar cell technology. This company already implemented the IMS in their management for proper quality control in the past four years. SIRIM BHD is the organisation that responsible for the International Organisation for Standardisation (ISO) and one of the accreditation bodies in Malaysia. The findings of this research were presented in explanation building technique which includes the theory, primary/ secondary data and discussion.

4.0 RESULTS AND DISCUSSIONS

The findings were summarised based on:

- i. The factors that encourage the implementation of integrated management system (IMS).
- ii. The components in IMS that could be converged and diverged.
- iii. The implementation strategies of IMS.

4.1 The Factors that Encourage the Implementation of IMS

- i. Improve Business Focus

IMS can benefit the organization by leading the organization focus on the business goals [3]. According to A USP Manager 2, IMS can be utilized as a corporate direction strategy in order to achieve the goal of becoming a leader in an industry. SIRIM Manager 1 also mentioned that IMS able to improve the business in long term. This is because IMS integrate components of business into a system that enables the achievement of strategic purpose, mission and goals that can guide the business flow. The implementation of IMS provides the guidance for the company in terms of planning, developing and improving management process that can lead to the improvement of business focus.

- ii. Manage Business Risk

The integration of two or more management systems into an IMS is advantageous in terms of providing a more holistic approach to managing business risks [11]. The integration of management system is considered to be of two types: to reduce costs and add value to processes or to reduce business risks [12]. A USP Manager 1 pointed out that the safety risks, environmental impacts and process failure modes already covered in the in IMS. According to A USP Engineer 1, IMS were implemented in Statistical Process Control (SPC) department for a quality product, reliability and audits. Besides, SPC is able to detect the problem before goods are given to the customer. IMS provides the platforms to manage business risk due to the fact that the revised edition of quality management system is also considering the risk planning, its consequences and impacts to the customer.

iii. Less Conflict between Individual Management System

IMS implementation can identify and rationalize conflicting, confusion, redundancy or conflicts in documentation and also expose the conflicting objectives [3]. A USP Manager 1 informed that the benefit of using IMS is it can reduce the redundancies in the documentation, save resources and save manpower. SIRIM H.O.D 1 further explained that IMS is able to promote a lean management as both certifications have the internal audit and management review. Instead of having two different sessions for internal audit and management review, then it will become only one audit session after the integration. IMS is able to reduce redundancies in documentation because the integration is the solution to minimize conflict in the management system. Moreover, in order to avoid conflict in the management system, an IMS provides a higher level management control rather than individual systems.

iv. Effective Internal and External Audits

The integration allows an internal and external audit to be carried out more clearly and effectively [13]. According to A USP Manager 1 and SIRIM Manager 1, the implementation of IMS will result in the one-time audit and there is not necessary to have a different type of audits. IMS provide effective and efficient audits in terms of certification, auditing time, cost and simplified auditors task. Besides, the integrated audit also provides more efficient usage of internal audits to prepare for third party assessments.

v. Save Human Resource

The integration of the different management systems can result in significant benefits including reduction in the use of valuable organizational resources [14]. SIRIM Manager 1 stated that IMS can reduce cost in terms of managing the system, the organization will have fewer people to handle the system, less documentation and a structured system. IMS will enable the reduction of human resource usage in terms of time spent in reviewing documentation procedures. As a result of this, an organization can save more human resources as there is no need to spend cost and manpower on duplication of effort as in the existing standards.

vi. Decrease Management Cost

The financial benefit refers to financial goals granted by the implementation of IMS; in which integration can lead to direct cost saving through reduction of auditing cost and reducing certification cost [15]. AUSP Manager 1 agreed that the IMS can result in cost saving from the certifications process and reduce auditing cost as the manpower cost is minimized. In addition, it is also able to save the resources, reduce the documentation and audits time and also enhance the effectiveness. The combination of management system itself plays a significant role in reducing and minimizing the management cost. Therefore, the integration will enable the decreasing of the management cost through many management aspects (i.e. audits, training, resources and documentation).

vii. Time Saving

The integration of systems can save both time and costs for companies. It also can save time for adopting different systems as common objectives of continuous improvement are being followed [14]. SIRIM Manager 1 deemed that IMS provides a simpler management system and able to reduce the period of time used in an audit, report and management review. IMS can reduce time needed in management and operation. This is because, before integration, the focus on different management systems is done separately; after integration, an organization just needs to manage a single system. Thus, the time used can be reduced.

viii. Enhance Employee Motivation

A good internal operation can give a positive motivation to the employees as they will be satisfied with their daily work and increase the organisational productivity [16]. In line with this, the IMS implementation can create a positive culture in the company as the implementation of IMS increases employee motivation [17]. SIRIM Manager 1 stated that application of IMS enables the staffs and employees to understand the system well because it is a combination of few systems where all the systems involved will be treated equally under IMS. This will lead the company to become a world class organisation. IMS implementation is acceptable by the employee because of the objective of customer satisfaction, environmental issues

and employee safety are considered in the integration which leads to enhancing employee motivation and reduce conflict in management.

4.2 The Components of IMS that could be Converged and Diverged

The management systems share common requirements and the continual improvement goal. They differ is the approach and degree of prescription, but the ISO 9001, ISO 14001 and OHSAS 18001 standards are compatible in content, terminology and many of the requirements [18].

Table 1: The Converging and Diverging Components in IMS

Converged Components	Diverged Components
IMS Manual	Purchasing Procedure
Management Review	Non-Conforming Product and Material Review Board (MRB) Procedures
Resources Management	8-Discipline (8D) Methodology for Problem Resolution Procedure
Design and Development	Internal Process Compliance Audit
Stage Gate Process	Internal Quality System Audits
Document Control and Record	Customer Related Processes
Control and Record	Global Customer Satisfaction and Complaint Procedures
Manufacturing Process	Environmental Aspect and Impact Identification and Evaluation
Monitoring/ Measuring Process and Products	Emergency Preparedness and Response Procedure
Control of Monitoring and Measuring Devices	Incident Investigation, Nonconformity, Corrective Action and Preventive Action Procedure
IMS Internal Audit Procedure	Hazard Identification, Risk Assessment and Determining Control Procedure (HIRAC)
Legal and other Requirement	NA
EHS Objective, Target and Program Procedure	
Resources, Roles, Responsibility, Accountability and Authority Procedure	
Competence, Training and Awareness Procedure	
Communication, Participation and Consultation	
Operational Control in Environment Management System/ Safety Management System Procedure	
Performance Measurement and Monitoring Procedure	

Source: AUSP Official Document Control

AUSP Manager 1 mentioned the components that can be integrated are the IMS manual, management review, resources management, design and development, document control and record; manufacturing process; monitoring and measuring process/ products;

control of monitoring and measuring devices; audit procedure, legal and other requirement; EHS objective, target and program procedure; resources, roles, responsibility, accountability and authority procedure; competence, training and awareness procedure; communication, participation and consultation; operational control in environment management system/ safety management system procedure; and performance measurement and monitoring procedure. A USP Manager 1 added, "Different system have different requirements, not all document or component should be integrated, if cannot be integrated then it can be used as a single management system". The overall components that can be crossed or integrate are identical with the requirement of the integrated standard or ISO. The difference is in which level the organisation wants to integrate their management system that is based on the need and suitability in the management/ industry. The converging and diverging component is shown in Table 1.

4.3 The Implementation of IMS

There are four steps of management method that had been developed by the father of quality control, Deming (1950) which is the 'Plan, Do, Check and Act' (PDCA) cycle. The PDCA cycle is the core of the continuous business improvement concept and incremental problem solving [19].

A USP Manager 1 stated that the first step (Plan) is to set the milestone on what the organisation would like to achieve. Then, for the second step (Do), it is needed for the execution as the management provides the training, EHS inspection by the committee, review and completes the security/ environmental management system and finalises the process. The (Check) phase is to give the feedback to the top management on what are the problems or any uncertainties by going through a gap analysis, follow up gap analysis and fine tune the management system and do the internal audit. The last step is (Act), in this phase the management would decide on the future improvement based on the external audit, and after the process, the certificate of the management system is ready. A USP Manager 1 added, the PDCA approach was used in detail to create the OHSAS 18001 Awareness Training and review for the whole process; Environment Health Safety (EHS) inspection, documents review, gap

analysis, and fine-tune the management system; in internal audit and for the certification. The IMS roadmap from actual practices based on the PDCA and the certification process in step by step is as shown in Figure 1.

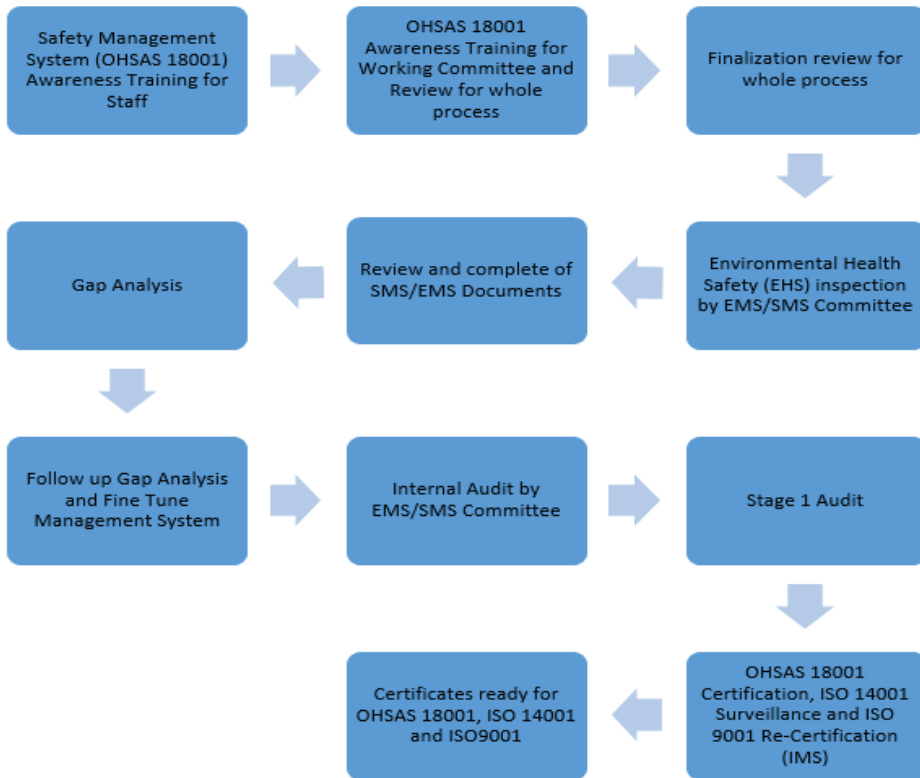


Figure 1: Integrated Management System Roadmap
Source: AUSP Official Document

The PDCA approach is suitable for the master plan of IMS implementation as it considers the process from the start up until the implementation is completed. Furthermore, it is important for every management system to create awareness and attend training before the management system being adopted and implemented. Furthermore, the integration of other management system with IMS could be possible and effective if the top management provides the most effective commitment, communication, support, funds and good leadership. The researcher also notes that the management's responsibility should not stagnant at the successful stage, but it should be continuous from time to time for the future improvement and also for sustainability.

5.0 CONCLUSION

The competition in the industry has become more intense due to the industrial revolution. One of the approaches towards the sustainability is by integrating the management system to become more flexible, effective and efficient. There are a few factors in the IMS that can contribute to the effectiveness in the management and the main point is towards cost saving, time saving and resources saving. IMS can be applied to any of the organisation that implies the quality standards. In addition, this system is being utilised for better time management in the organisation. This is because the implementation of IMS could results in reducing time in managing the different system, reducing operating time, reducing of audit and assessment time; and reducing time used to review the procedure and document. Moreover, the IMS is used for better human resources management. A good system in the management is able to improve and enhance the efficiency of the daily work in the organisation. The IMS implementation is able to simplify auditors' task, provides more efficient use of internal audits to prepare for third-party assessments, and reduce manpower on duplication of effort because of the management system is combined. Lastly, the PDCA approach can provide the effectiveness in IMS implementation and improve the organisation towards better quality management.

ACKNOWLEDGEMENT

The authors would like to thank both supervisors, Assoc. Prof Dr Mohd Syaiful Rizal and Assoc. Prof Dr Chew Boon Cheong; and all those who have assisted in completing this paper. This research was supported by the UTeM My Brain scholarship.

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