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**Knowledge Management to
Promote Occupational
Safety and Health at the
Malaysian Manufacturing
Workplace: Reposed in
Occupational Safety and
Health Committees?**

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Abstract

Occupational safety and health committees (OSHCs) have been mandated in Malaysian workplaces

regardless of type by
section 30 of the
Occupational Safety and
Health Act 1994 (OSHA
1994). Workplaces with 40
or more employees must

establish OSHCs. They are a form of employee involvement in the area of workplace safety and health. The activities of OSHCs are regulated by the

Occupational Safety and Health (Safety and Health Committee) Regulations 1996 (OSHCR 1996). To determine whether these activities embrace the twin

pillars of knowledge
sharing and knowledge
creation that form the
foundation of knowledge
management, the
Knowledge Creation Model

for ISO 9001:2000
conceptualized by Lin and
Wu (2005) is used in this
study. An application of the
said model proves that the
aforesaid regulated

activities of OSHCs are linked to knowledgeable quality information and could, via appropriate modes of knowledge conversion that was

dependent upon varied
contextual situations,
enable the creation of four
types of knowledge assets;
namely, routine,
experiential, systemic or

conceptual. To determine the types of OSHC activities that have not been extensively tapped in pursuit of knowledge creation, survey data from

231 Malaysian manufacturing companies was used. The empirical findings indicate that the following activities with knowledge creation

potential are relatively lagging in comparison to the other activities: access to reports provided by external experts, access to safety audits, collecting of

general information on safety and health issues, assist employer in safety and health competition, carrying out studies on safety and health at the

workplace, access to
internal and external
experts in determining
safety and health issues.

Keywords: occupational safety and health committees, committee scope, committee function, self-regulation, knowledge

creation model,
manufacturing companies

Introduction

In the year 1994, the Occupational Safety and Health Act 1994 (OSHA 1994) was introduced in

Malaysia. It heralded a shift from the traditional command and control method of enforcement in which the government, from the traditional

command through the
Department of
Occupational Safety and
Health (DOSH), assumed a
huge responsibility in
regulating the safety and

health of workers at the workplace to one of self-regulation, wherein all stakeholders at the workplace would assume responsibility for safety

and health at the workplace with ultimate responsibility vested in the employer (Yon, 2007; Soehod, 2007). Underlying the self-regulation concept are the

twin principles of employee involvement and joint commitment from management and employees (Levinson, 1987). The Roben's Report

completed in 1972, in the United Kingdom (Beck & Woolfson, 2000) is credited with promoting self-regulation as a regulatory system; hence the term

Roben's Model. However, it has been argued that the Roben's Model merely emphasized the need for employee consultation in advocating self-regulation

without perpetuating a specific form of employee involvement (James & Kyprianou, 2000; James & Walters, 2002). Self-regulation has been

institutionalized via legislative initiatives in a number of countries such as the United Kingdom, Canada, Australia and New Zealand to name a few.

In comparison to those countries, it can be observed that Malaysia has adopted this concept of self-regulation (Yon, 2007; Soehod, 2007)

approximately two decades after it came into fashion in the 1970s. It is argued that the institutionalization of the concept of self-regulation varies from one

country to another
(Hovden, Lie, Karlsen &
Alteren, 2008). The
differences are discerned in
the varied ways the twin
principles of self-regulation

are manifested in terms of coverage and functions:

- (i) whether the establishment of occupational safety and

health committees
(OSHCs) that comprise
of management and
non-management
representatives is
dependent upon

certain factors (size of firm, type of industry etc.);

(ii) whether OSHCs are a distinctive feature of

the self-regulatory
system;

(iii) the extent of rights and
powers vested in
members of OSHCs.

For example, in Canada the presence of an OSHC features distinctively in its self-regulatory system (O'Grady, 2000), but the same cannot be said of the

situation in the United Kingdom. In the latter, according to Wright and Spaven, (1998) the form of employee involvement is dependent upon the type of

workplace (unionized, non-unionized and offshore).
Legislative impetus in the
United Kingdom
necessitates the
requirement for trade

union appointed health and safety representatives that may lead to the establishment of OSHCs in the unionized workplace and the establishment of

OSHCs in the offshore workplace. With respect to non-unionized workplaces, the employer determines the form of employee involvement whereby

direct or indirect consultations are available options (Walters, 1997). In addition, the role and functions of members of OSHCs may vary depending

upon country origin
(Hovden et al., 2008) and
even within different
jurisdictions in the same
country (O'Grady, 2000).

In Malaysia, via section 30 of the OSHA 1994, workplaces with 40 or more employees are mandated to establish OSHCs. In addition,

Regulation 5(2) of the
Occupational Safety and
Health (Safety and Health
Committee) Regulations
1996 (OSHCR 1996)
stipulates that the

composition of OSHCs
must at the very least have
an equal number of
management and non-
management
representatives implicitly

underlying the joint nature
of OSHCs. A collective
perusal of the OSHA 1994
and the OSHCR 1996
prompts one to conclude
that the OSHC is a

distinctive feature in the OSH self-regulatory system adopted in Malaysia. The justification for OSHCs is based on the theory that occupational safety and

health are best achieved through empowering managers and non-managers at the point of production to enforce compliance with standards.

In many industrialized countries they are regarded as the cornerstone of safety and health policies (Eaton & Nocerino, 2000).

The concept of empowerment that enfold the OSHC is recognizant of the indigenous knowledge of the non-management member of the OSHC and

thus thrusts him/her in the role of a knowledge worker to a certain extent regardless of the actual job function undertaken. Thus, it would be apt to

determine whether the
functionings of an OSHC
can be conceptualized
through the lens of
knowledge management,
and to determine after a

span of fifteen years from the passing of the OSHA 1994, the type of OSHC activities that are lagging in terms of knowledge creation. This would enable

employers, policy makers, professionals in safety and health and organizational designers to view the OSHC in a different light. In addition, the assessment of

the OSHC as a potential knowledge creation vehicle in the area of OSH at the work place may validate its centrality in the Malaysian self-regulatory model. A

discovery of the types of activities relatively least performed by OSHCs despite legislative sanctions may also be indicative of the extent of

employee involvement and hence the pulse of the self-regulatory system in Malaysia, and reflective of whether the path towards a systems approach in

Malaysia (Soehod, 2007)
would be smooth or strewn
with impediments along
the way. A systems
approach is defined by
Bakri, Mohd Zin, Misnan

and Mohammed (2006) as a planned, documented and verifiable method of managing hazards and risks at the workplace in a systematic way and is part

of the overall management system. They argue that such a system will enable firms to comply with their duties under the OSHA 1994. However, the

success of a systems approach is dependent upon varied factors one of which is employee involvement (Saksvik & Quinlan, 2003). The focus

has been on manufacturing firms because the Social Security Organization's Annual Report of 2009 and the DOSH Annual Report of 2009 indicate that the

manufacturing sector has the highest number of accidents compared to other sectors.

Literature Review

The literature review elucidates the following observations, concepts and theories:

- (i) legislative impetus
does not translate
readily into practice;

- (ii) knowledge
management can result

in generation of
knowledge asset;

(iii) knowledge
management is
dependent upon
enabling factors.

***Tension between Law and
Practice in the Role and
Function of OSHCs***

Countries that absorbed the
spirit of the Roben's Model

acknowledged the
importance of employee
involvement in their
adoption of the self-
regulatory system in the
area of occupational safety

and health. This was actualized either via legal provisions relating to the establishment of OSHCs, the role and function of OSHCs through safety

representatives or provisions emphasizing the need for consulting with employees (regardless of form of consultation) in stipulated areas. Studies

have been conducted in the United Kingdom by James and Kyprianou (2000), James and Walters (2002) and Walters and Nichols (2006) show a tension

between legislative impetus
and implementation
attributable to varied
factors noted in James and
Kyprianou (2000) and
Walters (1995) such as the

following: power relationships between managers and workers; approach adopted by enforcement agencies, workplace size and origin,

degree of trade
unionization, industrial
sector and the political,
social and economic climate
within which it operates.
Some of the studies

reviewed by O'Grady
(2000) also lend credence
to the fact that a tenuous
relationship between
legislative impetus and
implementation may also

prevail in other countries that have imbibed the spirit of the Roben's Model. This possibility may have inspired the study by Nichol, Kudla, Manno,

McCaskell, Sikorski and
Holness (2009) who
discovered that joint OSHCs
that had been legislatively
sanctioned for more than
thirty years in Ontario,

Canada were functioning well in acute care hospitals in terms of legislative compliance and availability of resources and experts. However, gaps in

functioning were noted in the following areas: lack of joint OSHC member education beyond certification training and suboptimal status and

visibility of joint OSHCs
within the organization.
Thus it is invaluable to
determine how OSHCs in
Malaysia were functioning

in terms of legislative
compliance.

***Knowledge Management
Producing Knowledge
Assets in the Context of
OSHCs***

Goel, Sharma and Rastogi
(2010) extol the three main

benefits of knowledge management; and define knowledge management as a term to loosely refer to the broad collection of organizational practices

and approaches related to the generating, capturing and disseminating knowledge relevant to firms' business. One of the three benefits of knowledge

management as extolled by Goel et al. (2010) is the critical role that knowledge management can play in the strategic management of human capital and

leverage its knowledge
base for business
performance and
improvement. Given the
justification for the
establishment for OSHCs as

mentioned in the earlier part of the paper that is to draw out and utilize the indigenous knowledge of non management employees for the

improvement of OSH at the workplace, it is argued that knowledge management has a critical place in the activities of OSHCs.

Chen, Huang and Hsiao (2010) in their study find that knowledge creation and knowledge sharing, the twin pillars of knowledge management, are drivers of

organizational
innovativeness; and that
the relationship between
the two 'drivers' and that of
organizational
innovativeness can be

moderated by
organizational climate
(supportive climate,
innovative climate) or
organizational structure
(less formalized, less

centralized and more integrated). The concept of innovativeness has been defined by the authors as, 'propensity for a firm to develop new elements or a

new combination of already known elements in products, technologies or management. It involves the acquisition, dissemination and use of

new knowledge'. Thus innovation in the manner defined is a potential outcome of the activities of OSHCs as legislated in Malaysia in the context of

improving workplace
occupational safety and
health (see Table 2); and
prompted the researcher to
view the activities from the
lens of knowledge

management theories and concepts.

Lin and Wu (2005)
conceptualize the creation
of knowledge via the ISO

9001: 2000 quality management system. They were able to specify knowledgeable quality information and its manner of conversion into quality

knowledge via the appropriate activity that takes place in a particular context resulting in a type of knowledge asset. Several modes of conversion are

noted: socialization
(sharing of tacit knowledge;
for example, interaction
with customers and
supplier), externalization
(tacit to explicit; for

example, writing to
articulate tacit knowledge),
combination (explicit to
explicit whereby explicit
knowledge becomes more
complex) and

internalization (explicit to tacit; for example, actualizing work practices).
The contexts in which an activity with knowledge creating potential takes

place are conceptualized as follows: originating (individual and face to face interaction), dialoguing (collective and face to face interaction), systemizing

(collective and virtual interactions) and exercising (individual and virtual interactions). Four types of knowledge assets are identified: experiential

(skills and know-how),
conceptual (concepts or
designs), systemic (product
specification, manual and
documented information)
and routine (actions and

practices). The conceptualization of the knowledge creation process in the context of quality management led the researcher to query its

applicability in the context
of the workings of an OSHC.

Enablers of Knowledge Management in General

A plethora of studies have focused on varied factors (strategy and leadership,

corporate culture, people,
information technology)
that enable knowledge
management. Yeh, Lai and
Ho (2006) in their case
study of two companies

were able to verify the academic theories relating to knowledge management enablers with real practice in the industry. They discovered that for the

strategy and leadership
enabler the formation of a
culture of sharing is
important; for the
corporate culture part, it is
important to form a culture

of sharing that is
supplemented by IT; for the
people enabler part,
channels of learning and
incentive programs are
important in addition to

training courses; for the IT enabler factor, it is important to ensure speedy search of knowledge for its re-use other than the mere digitization of knowledge.

Premised upon the argument that OSHCs are channels of knowledge management, it is argued that these enablers may have an impact on the

knowledge management
activities of OSHCs.

King, Kruger and Pretorius
(2007) affirm the multitude
factors that act as

knowledge management
enablers but argue
persuasively that culture is
the decisive factor in
successful knowledge
management systems; and

that inculcating a knowledge sharing culture in a diversified environment is not an easy task. In their study, King et al. (2007) discovered via

their single case study of a diversified work environment that several factors (language barriers, discrimination, individual based educational systems)

could impede knowledge sharing that is a precursor to knowledge creation. The said study was compelling as the Malaysian workplace comprises a heterogeneous

workforce in terms of ethnicity, educational background and language spoken, and the barriers discovered in the said study may explain ineffective

knowledge sharing among
members of OSHCs.

Study Objectives and Questions

The purposes of the study are twofold:

(i) to determine the type of knowledge assets created via the activities of OSHCs that are regulated by the OSHCR 1996 and

(ii) to determine the type of OSHC activities that have not been extensively tapped in the creation of knowledge.

In relation to these two objectives, the two research questions formulated are as follows:

1) What are the types of knowledge assets that can be created through the activities of OSHCs in Malaysian manufacturing firms?

2) What are the types of OSHC activities that have not been extensively tapped in the creation of knowledge to improve

OSH at the Malaysian
manufacturing
workplace?

Methods

To answer the first question, the Knowledge Creation Model for ISO 9001:2000 conceptualized

by Lin and Wu (2005) is used. In their paper, they explicitly define the concepts and elucidate how every activity in the ISO 9000:2000 Quality

Management System is tied to knowledgeable quality information. Every activity takes place in a given type of context whereby the said context allows every

activity to be converted to quality knowledge through a specific knowledge converting mode. The end result would be a type of knowledge asset that

enables the improvement of quality management at the workplace. In the same vein, activities of the OSHCs as regulated by the OSHCR 1996 were analyzed but

placed within the context of improving occupational safety and health (OSH) at the workplace.

To answer the second question, a questionnaire survey was conducted using the sampling frame of all Malaysian manufacturing companies

with OSHCs (4, 337)
provided by DOSH in
September 2008. One
thousand survey packages
were posted. Each package
comprised two sets of

identical questionnaires:
one to be answered by a
management
representative (MR) and
another to be answered by
a non-management

representative (NMR).
Data was collected from
April 2009 until January
2010. Altogether 278
respondents participated in
the survey: 196 MRs and 82

NMRs. The responses were evaluated statistically using SPSS software version 17.0. The final data set comprised 231 cases only as cases that were outliers

were removed and if a MR and NMR originated from the same manufacturing company the NMR was eliminated from the data set. The latter elimination

was done because the unit of analysis was the manufacturing company and the response of either the MR or NMR would be representative of the

company. Either response of MR or NMR would be representative of the firm because type of representative did not have a statistically significant

impact upon perception of legislative compliance with OSHCR 1996 (denoted as OSHCR) because premised upon assumption of variance being violated, the

p value was 0.308 (>0.05), when Independent sample t test was run. This finding could perhaps be attributed to the OSHC operating in a different population.

Perhaps in the Malaysian landscape members of OSHCs regardless of type see themselves unified for a common purpose that benefits all employee types.

Stratified random sampling was the method employed and the ratio of each category to the sample matched the ratio of each category to the population

whereby category refers to the type of manufacturing company.

Results and Analysis

Table 1 below displays how every activity of the OSHC is linked to specific knowledgeable quality

information, and via the knowledge transformation mode becomes quality knowledge regarded as a type of knowledge asset in the context of OSH for the

workplace. The conceptual knowledge assets when acquired consists of explicit knowledge that enable the OSHCs to make recommendations that are

reactive (prevent OSH issues from reoccurring) and/or proactive (prevent OSH issues from occurring) in nature. Their acquisitions by members of

OSHCs are dependent upon interaction with third parties: employees, internal experts and external experts. It is thus argued that the prevalence of the

conceptual asset type
enables OSHCs to be aware
of the OSH environment at
the workplace and
simultaneously to be at the
forefront of current

knowledge in the field of OSH and thus be able to make appropriate recommendations in the context of the workplace.

**Table 1: Knowledge
Created within OSHCR
1996**

**Please See Table 1 in Full
PDF Version**

Table 2 below displays the results of the descriptive analysis. The cut-off point for the mean value is 3.5238 and below in determining which OSHC

activities are lax. Based on that, yardstick committee functioning is relatively lax in several areas: access to reports provided by external experts, access to

safety audits, collecting of
general information on
safety and health issues,
assisting of employer in
health and safety
competitions, carrying out

studies on safety and health at the workplace and access to internal and external experts in determining safety and health issues. All the items denoted in Table

2 are the functions that are legislatively prescribed via the OSHCR 1996 and were measured using a five point Likert scale whereby respondents were ask to

circle the extent to which each of the functions is carried out ranging from none (0=none) to always (5=always). Excluding the activity of the OSHC in

relation to safety competitions, all the other lagging activities are dependent upon the knowledge of third parties. In addition, they are

reflective of the lack of
ability in generating
conceptual knowledge type
asset that was argued
earlier to be of importance

in making the OSHC a
firebrand of sorts.

**Table 2: Results of
Descriptive Analysis for
Twenty Items on
Committee Functioning**

**Please See Table 2 in Full
PDF Version**

Discussion

The conceptual analysis
that applied the Knowledge
Creation Model
conceptualized by Lin and

Wu (2005) proves that the said model and its related concepts are applicable in making meaning of the activities of OSHCs. More importantly, it proves that

the OSHCs have the ability to create knowledge assets that are relevant in maintaining and improving the state of OSH at the workplace. In a way, this

justifies the importance of mandated OSHC as an essential feature in the shift toward self-regulation in the watershed year of 1994 when the OSHA 1994 came

into being. In addition, by viewing OSHCs as a channel for knowledge creation, members of OSHCs and employers alike would have a clearer understanding of

the main functions of OSHCs and how they are inextricably linked to knowledge management. However, the empirical analysis shows that

manufacturing firms in
Malaysia are not
extensively tapping the
knowledge creation ability
of OSHCs via these
activities: collecting general

information on safety and health issues, access to reports provided by external experts, access to safety audits, carrying out studies on safety and health

at the workplace and access to internal and external experts in determining safety and health issues.

The reasons for such a state of affairs are many:

- (i) top management not being committed to OSH issues in general

whereby OSH issues
are perceived as an
expense rather than an
investment;

(ii) top management being
unable to appreciate

the knowledge creation
ability of OSHC and
thus being
unsupportive of it
whereby its
establishment is

merely for the sake of
legal compliance;

(iii) top management may
be uncomfortable with
the conceptual type

knowledge assets in
the form of
recommendations for
continual improvement
that may touch upon
the work environment

and be proactive in
nature entailing safety
expenditure that is
perceived by
management at best
based on clairvoyance;

(iv) members of OSHCs
may not be motivated
enough to undertake
the abovementioned
activities owing to lack
of time or absence of

incentives as legislation does not mandate that safety work would be subject to any form of remuneration whereby members of OSHCs

have to carry out safety work on top of the expected workload;

- (v) members of OSHCs may not be able to

undertake those activities owing to financial constraints as such activities may not be budgeted for by top management.;

(vi) members may also need some training in how some of those activities need to be carried out for example how to conduct studies

relating to OSH and
how to collect general
information.

These varied reasons can
be neatly attributed to

factors originating from management commitment or scope and content of training with a substantial emphasis on the former because section 30 of the

OSHA 1994 in Malaysia imposes a duty upon the employer to establish OSHCs when the threshold of forty or more employees is reached at the workplace.

Added to that is the
imposition upon the
employer of the duty to
ensure that members of
OSHCs have basic
understanding and

knowledge of functions of
the committee, the duty to
provide adequate training
and lastly the duty to make
available relevant
document and information

(regulations 29, 30 and 31 of the OSHCR 1996). These duties when breached would subject the person if convicted to a fine not exceeding five thousand

ringgit or to imprisonment for a term not exceeding six months or to both (regulation 32 of the OSHCR 1996). However, no prosecutions have been

made pursuant to the
OSHCR 1996 to date as the
provisions are difficult to
enforce on the part of
enforcement officers from
DOSH. How does one

determine for instance whether training provided by management to members of an OSHC is adequate? The word adequate is open to varied

interpretations coloured by the employer's perception as to what is adequate. In addition, how do enforcement officers determine whether

members of OSHCs have basic understanding and knowledge of OSHC functions? This is because the basic understanding and knowledge are

dependent upon employers interpretation of what amounts to basic knowledge and understanding of OSHC functions. Perhaps it can be

argued that at least the duty on the part of the employer to make available relevant document and information can be enforced as the nature of

the document and information have been specifically itemized in regulation 30 of the OSHCR 1996. However, how does enforcement ensure

whether in actuality the relevant document and information have been made available to members of OSHC? This is because it is always possible for the

employer to claim such disclosure has been made and difficult for members of OSHCs (especially those provided 'adequate' and 'basic knowledge' by the

employer) to deny
otherwise. More
importantly, there is no
obligation imposed upon
the employer to maintain
documents and information

of the nature described in
section 30 of the OSHCR
1996.

Conclusion

It is argued that the OSHCR 1996 lacks teeth; however, given the centrality of OSHCs in the OSH self-

regulatory system adopted
in Malaysia and the
potential of OSHCs for
knowledge creation in
pursuit of OSH
improvement at the

workplace, several measures can be undertaken to address this. The suggested measures are as follows:

- (i) educating employers on the benefits of investment in OSH in terms of tangible (reduction of losses attributable to OSH

issues) and intangible benefits (motivated workforce);

(ii) educating employers and safety personnel in

the firm as to the
potential of OSHCs to
act as an effective
knowledge creation
channel for the

improvement of OSH at
the workplace;

(iii) educating employers
and safety personnel in
the firm on the need to

ensure that the factors
(strategy and
leadership; corporate
culture, people and
information
technology) enabling

the functioning of the OSHC as a knowledge creation model are prevalent ;

(iv) educating members of the OSHC on their role as knowledge creators that is very much dependent upon their

ability to acquire and
share knowledge;

- (v) addressing factors
(language barriers,
high power distance

culture, discrimination
and individual based
educational systems)
that may prevent the
knowledge acquisition
and sharing that ought

to take place via OSHCs
that are reflective of
the diversity in the
Malaysian workplace;

(vi) the ambiguous provisions in the OSHCR 1996 should be prescribed with clarity so that the enforcement of those

provisions can be
enforced confidently by
DOSH enforcement
officers;

(vii) provisions of incentives by DOSH be made to workplaces that have an OSHC working effectively as

a knowledge creation
channel;

(viii) external experts such
as occupational safety
and health (OSH)

professionals, non-
governmental
organizations (NGOs)
and DOSH need to
initiate the
networking system

and utilize
information
communication
technology (ICT)
based systems
creatively and

effectively to allow for a continuous flow of information between OSHCs and the experts. External initiation is vital

because this channel
of knowledge creation
in the area of OSHC
has been mandated
but in terms of
practice is the least

utilized by the OSHCs
in the manufacturing
firms.

An appreciation and
recognition by the

employer of the OSHC as a channel for knowledge creation, and effective enforcement of the OSHCR 1996 by DOSH enforcers would cloak the OSHC with

the mantle of respect and authority that it requires. Only then can the suggested changes be made by the employer either willingly or upon threat of enforcement

to enable the effective functioning of OSHCs as a channel for knowledge creation. Active involvement from external experts provide an added

benefit in engendering the development of a knowledge activist type of member of the OSHC as envisioned by Hall et al. (2006) that would take

workplace OSH to a higher level in the manufacturing firm.

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