

VALUE MANAGEMENT GUIDELINES FOR THE MALAYSIAN CONSTRUCTION INDUSTRY

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ABSTRACT

As a result of a rigorous concatenated exploratory research using mixed methodologies, sustainable Value Management (VM) Guidelines for the Malaysian construction industry were developed. It is hoped to assist the future driving force in the further development of VM in Malaysia as well as paving the way for better implementation of VM which promises improved value for the clients of the Malaysian construction industry. Since there is no sound academic base and lack of understanding by the construction clients and the professional consultants towards VM in Malaysia, this paper is to enlighten the Malaysian construction industry on the availability and the existence of the prototype VM Guidelines resulting from the undertaken research.

Keywords: Malaysian Construction Industry, Sustainable Prototype VM Guidelines, Value Management, VM Implementation.

1. INTRODUCTION

Internationally, value management (VM) is an emerging paradigm that focuses on continuously increasing the value provided to the client, widely developed (Fong, 2004) and it is accepted as an important tool in recent management of construction projects (Ellis et al., 2005). VM is considered critical to the success of projects due to its ability to provide a basis for improving value for money in construction (Ashworth and Hogg, 2000); it focuses on value rather than cost and seeks to achieved an optimal balance between time, cost and quality (Kelly, Male, et al., 2004).

Currently there is a need for VM in Malaysia (Jaapar and Torrance, 2005; Jaapar, 2006) so as to enhance efficiency and to deliver maximum value to benefit the clients. The clients realise that creative and innovative solutions need to be integrated into the processes of the Malaysian construction industry.

Based on the literature (NSW, 1992; Kelly and Male, 1993; Norton and McElligott, 1995; Fong, 1999; Ashworth and Hogg, 2000; Che Mat, 2002; Kelly, Male, et al., 2004) and documents of case studies gathered, a working definition of VM that has been developed to best describe the current development of VM in the Malaysian construction industry is a multi-disciplinary, team orientated, structured, analytical process and systematic analysis of function which seeks best value via the design and construction process in order to meet the client's perceived needs (Jaapar, 2006).

The rationale for the development of the above definition rests on an epistemological application of VM in the Malaysian construction industry. It would also serve to enhance the perception of VM methodology of clients and practitioners in the local construction scene. The definition also encapsulates the three core elements, as propounded by Kelly, Male et al. (2004). In keeping to the ethos and philosophy of VM, the above definition of VM also reinforces that: it is a value system; it is team based; it uses function analysis to differentiate it from other management services.

This paper presents a part of *The Prototype Guidelines of Value Management Application for the Malaysian Construction Industry (VM Guidelines)* which is an outline of VM methodology practice primarily aimed at the Malaysian construction industry, specifically for clients who plan to commission VM

workshops, and for consultants, including the VM practitioners or VM facilitators who offer VM services.

2. THE LITERATURE REVIEW: VM IN MALAYSIA

VM was first introduced in Malaysia in 1986 (Jaapar and Torrance, 2005; Jaapar, 2006). Despite the benefits discovered as a result of its applications, VM has yet to be widely practiced in Malaysia (Jaapar and Torrance, 2005; Jaapar, 2006). The literature review undertaken also indicates a knowledge gap in the current developments and applications of VM in the Malaysian construction industry. The non-existence of a formal fixed structure in implementing VM has justified efforts in the research to produce practical VM Guidelines for application in the Malaysian construction industry. Only then continuous support from government agencies (Shen, et al., 2004) and the private sectors can be sought if some form of formal VM Guidelines is available to the public. Internationally, this type of support for VM has proved to benefit many construction industries.

Despite clear evidence that VM is still in its infancy in the Malaysian construction industry (Jaapar and Torrance, 2005), little is known regarding the industry's response to its application and how it is being applied. Literature review highlights that some client organisations in Malaysia have been applying some concepts of VM in their project operations (Jaapar, 2000; Jaapar, Ismail et al., 2001; Jaapar, Torrance et al., 2003; Abdul Ghani, 2004; Ong, 2004; Tan, 2005; Che Mat, 1999, 2002, 2006; Stevens, 1997; Hussein, 1998; Karim, 1999; Sulaiman, 2000; Shamsuddin, 2002; Tamim, 2002; Sareh, 2003).

Che Mat (1999) contended that the clients' understanding of the concept of VM is important as it is not merely considering the cost but also the relationship between value, function, quality and cost in a wider perspective. The fundamental contribution of VM is its ability to eliminate the unnecessary costs which do not contribute to the project's value, system and facilities. Furthermore, it is said to deliver better quality or functionality for the same cost.

Tan (2005) also advocates VM for the Malaysian construction industry as he considers it as one of the foremost and modern project management tools and techniques. VM also offers potential financial savings averaging around ten percent, assuming an investment of 30:1 (Ong, 2004). Ong (2004) emphasizes its effectiveness by stating that 3.2 per cent saving from a total of RM209.27

billion can produce financial savings of RM670 million by using an estimated investment of RM22 million.

2.1 Critical Success Factors for VM Studies

Kelly et al. (1996) state that VM studies could not be successful unless they follow the structured approach through the job plan. Additionally, Male et al. (1998) assert that these factors are important for the success of VM studies: there should be multidisciplinary team / appropriate skill mix, structured approach; the participants' VM knowledge; the presence of decision makers in the workshop; participant ownership of the VM process output; preparation prior to the VM workshop; the use of functional analysis; participants and senior management support for VM; and a plan for implementation of the workshop outcomes. Moreover, Fong (2000) and Kelly et al (1996) added that the success of the VM process is dependent upon the skills and experience of the VM facilitator (VMF) who can systematically create a team learning environment; and an awareness of the learning potential among the team members.

2.2 VM Guidelines

The developed VM Guidelines bring together the international best practices through the process of literature review together with the conducted empirical study outcomes discovered during the period of research. A variety of factors determine the success of VM studies and a combined effort from all parties is needed. It is hoped that by having the VM Guidelines, the path in implementing VM in the Malaysian construction industry would be easier, more effective and contribute to greater client satisfaction in the future.

2.3 Rationale for Developing Sustainable VM Guidelines for the Malaysian Construction Industry

The current VM practices in Malaysia do not rely on any specific guidelines and these have led to fragmentation and prevent some of these applications from achieving their potential and prominence. The VM Guidelines should be able to guide and help future users to achieve a transferable set of skills applicable across disciplinary boundaries and at the same time, with the support of the client, able to unlock the creative skills within the multi-disciplinary teams.

Since VM in the Malaysian construction industry is still in its infancy stage, many contributing factors will hinder its implementation in the industry. Thus, in ensuring familiarity towards the VM concept and methodology, the VM Guidelines would provide the much needed guidance. The VM Guidelines presented in this article are the first formal attempt to contribute to the next level of VM development in Malaysia. It is hoped that they become the basic fundamentals in the VM methodology.

The fundamental approach of these VM Guidelines is based on empirical research on VM application in the Malaysian construction industry which is designed to be directly applicable to the Malaysian construction culture. It also adheres to current international standard practices of VM (such as SAVE, 2005; BS EN12973, 2000; CIB, 1997). The main aim is to ensure that these VM Guidelines are able to assist future clients and their representatives in implementing VM for the Malaysian construction industry.

The VM Guidelines define the generic methodology of VM that will guide the future construction industry clients and to enable the consultants to apply VM systematically and effectively. It also consists of descriptions of the VM process; hence, VM implementation would be able to obtain the desired result. It was scrutinised and verified by a panel of professional representatives leading to changes to the final prototype VM Guidelines. However, further changes should be applied to it from time to time due to the continuous development as the Malaysian construction industry progresses. The prototype VM Guidelines are specifically designed for the overall construction industry and they are flexible to ensure future upgrading.

In line with Mootanah (2000, p.135) who stated that dynamic methodology is developed 'to ensure an explicit way or structuring one's thinking and actions. Methodologies contain model(s) and reflect particular perspectives of 'reality' based on a set of philosophical paradigms'. The VM Guidelines are tailored to help the users from 'what' steps to take and 'how' to perform those steps and most importantly the 'reasons' why those steps should be taken in that particular order. According to Mootanah (2000), the structuring of the VM process is to make sense of the situation where the VM methodology users are able to consider the reasons for the ordering of a set of activities or steps as implied by the proposed Guidelines.

The secondary objective of the VM Guidelines is to serve as a starting point for the Malaysian Government in assisting proponents of VM methodology to develop further from its current infancy stage to a much more mature stage by

implementing it as part of the requirement of the Malaysian construction project delivery process. It is presented in tabular format and it abstracted the essentials to ensure the process of VM applications is made easy. The VM Guidelines are designed to be flexible and user friendly. The target audiences are the clients and practitioners of the Malaysian construction industry.

These VM Guidelines attempt to provide the knowledge, essential tools and VM techniques to handle the project's complexity, to obtain the desired results and to improve the value of the project. It is hoped that by applying the procedures of the VM Guidelines it would offer a more reliable and confident outlook for the future VM users as the process is more transparent and able to assist in the value creation rather than cost focus in the industry.

3. RESEARCH METHODOLOGY

3.1 Formulation Process of VM Guidelines

The research took a similar process to the three stages of Liu (2003) which led to the development of a VM framework for the China construction industry. Besides inputs obtained from the literature reviews, questionnaire surveys, interviews and case studies, this research added on an observation process together with the VM documents to enhance the applicability of the prototype VM Guidelines in the Malaysian construction industry.

The first stage of the development process of the prototype VM Guidelines was the framework of the Guidelines which were abstracted from the job methodology. It was developed based on seven questions of what, why, how, when, who, where and how much. To answer the questions, references were made to the published VM materials that consisted of standards, books, reports, manuals and theses produced by the professional bodies, practitioners, researchers and academicians. The process resulted in the development of the draft of the prototype VM Guidelines whereby the unique needs of the Malaysian construction industry were taken into consideration.

The second stage was the input from the overall research methodology which was inserted into the draft prototype whereby the synthesised results of surveys, interviews, observations of VM workshops and information from the VM documents on the applications and VM practices in Malaysia were used to ensure their applicability in the Malaysian construction industry.

BACKGROUND

Value Management (VM) is 'a multi-disciplinary, team orientated, structured, analytical process and systematic analysis of function which seeks best value via the design and construction process to meet the client's perceived needs' (Jaapar & Torrance 2005). It is a proactive, creative, problem-solving service, using a multi-disciplinary team oriented approach to make explicit the client's value system and is targeted at stages through out the development of a project or the life of a facility" (Kelly & Male 1993; Norton & McElligott 1995). It is also a means of group decision support (Green 1999), the most promising method in co-ordinating professionals from different disciplines (Shen 1995) as well as a method to help the clients better achieve their goals (Connaughton & Green 1996; Male, Kelly et al. 1998).

The VM procedure also encourages the development of a value culture within the organisation which eases the path to accomplishing desirable change by instilling a process for structuring the interaction of often disparate value systems to find an acceptable outcome to move a project, service or organisation forward (Kelly, Male et. al 2004). Thus, it can be summarised as a goal-setting process that aims to satisfy the client's project requirements as well as it concentrates on improving the relationship between value and the client. From the mid 1980s, VM has been adopted for use as a value-for-money measure within the construction industries of a number of countries (Kelly, Male et al. 2004) such as US, UK, Australia, Japan and other European countries.

As a result of a rigorous empirical study on the practice of VM in the Malaysian construction industry (Jaapar 2006), these prototype Guidelines of VM are the first attempt undertaken in this way to encourage further application of VM methodology in a consistent manner. Since very limited published materials on theories and principles of VM are available locally, these prototype Guidelines are to fill the gap. The resulting VM Guidelines are suggested to be the guidelines in the implementation of VM application. They are based upon the empirical findings from the Malaysian construction industry, as well as the international current practices of VM. By having these Guidelines of VM, it is intended that the continuous support from the Government agencies can be sought to promote their further application in the Malaysian context, as internationally it has proved to benefit many construction industries. It is hoped that these VM Guidelines will be a driving force in the further stages of VM development in Malaysia leading to a better future direction for VM implementation to achieve better value in the Malaysian construction industry.

These Guidelines offer a standardised Job Plan methodology for application in the Malaysian construction industry to reduce uncertainty towards the VM concept and application. The presented elements were based on the established publications and the experiences provided by the Malaysian practitioners. These provide a basic and holistic pattern of system on VM methodology and taking into consideration salient information for the VM practices. It is also designed to be simple and user friendly to encourage further usage of the VM methodology in the Malaysian context in a consistent manner.

The employment of these VM Guidelines should ensure that the integration of the value for money concept is instilled into the undergoing construction projects resulting in better functions, considerable benefits and increased value leading to the possibility of cost savings (Appendix A) and greater client satisfaction. These VM Guidelines demonstrate a structured and integrated VM process towards all the main construction project stages. There is also evidence to support the view that the appropriate application of VM in construction projects can assist in improving not only communication and decision making but leads to the improvement of harmoniously relationships between the various participating parties.

Figure 1: The Background of the VM Guidelines.

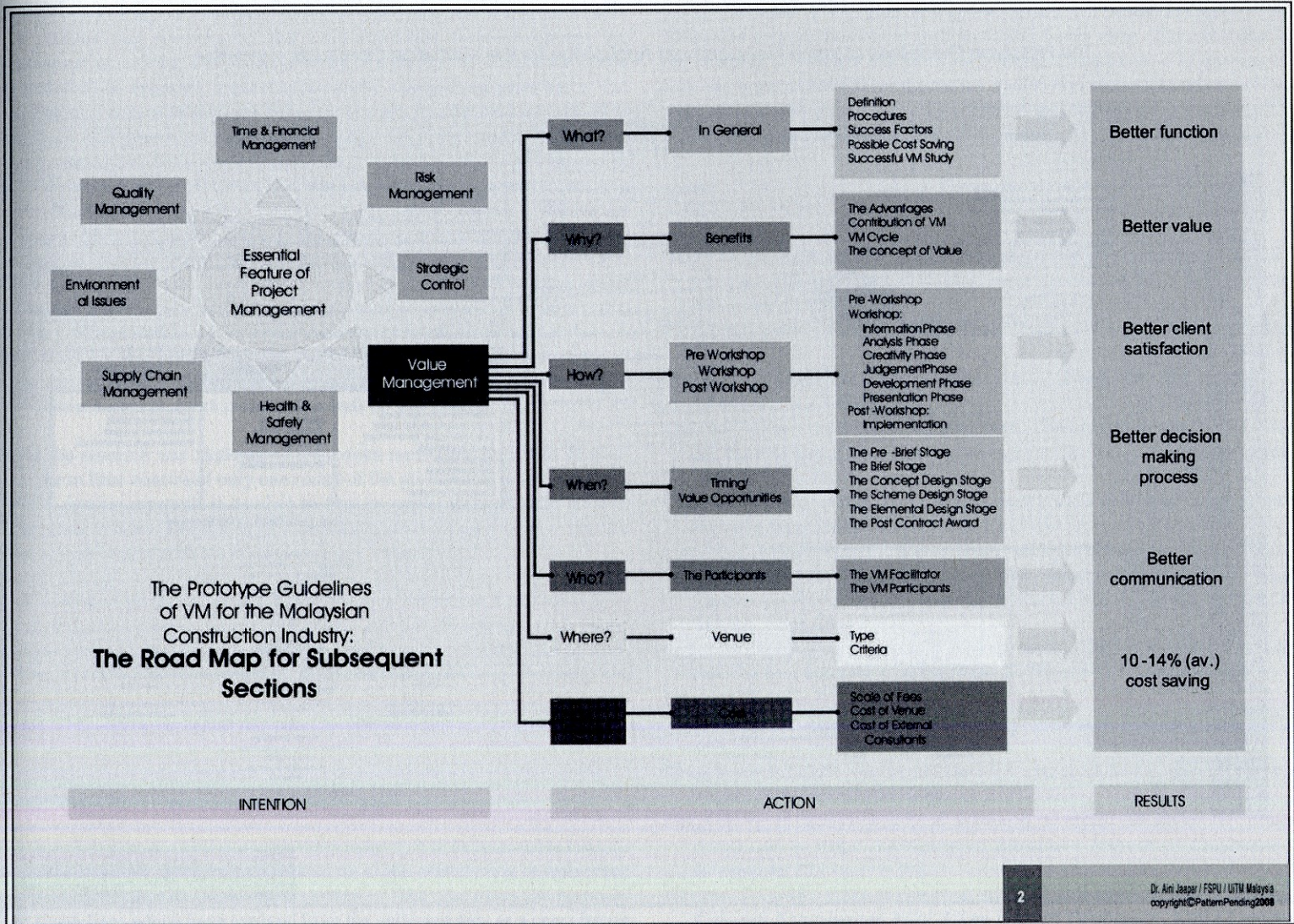
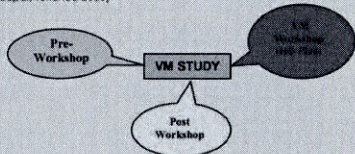
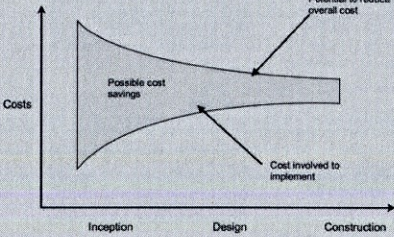


Figure 2: The Road Map for the Value Management Guidelines.

The Prototype Guidelines of Value Management Application for the Malaysian Construction Industry

Concept	The Elements	Purpose	Activity/Sequential Steps	The Nominated Critical Success Factors For VM Studies	Explanatory Note		
VALUE MANAGEMENT	WHAT?	In General	<p>VM in the construction industry is a multi-disciplinary, team oriented, structured, analytical process and systematic analysis of function which seeks best value via the design and construction process to meet the client's perceived need. (Jaapar, Torrance 2006)</p>  <p>Figure 1: The VM Procedure Source: Jaapar & Torrance (2005)</p>	<ol style="list-style-type: none"> Deliberate consideration should be given to the duration of the VM workshop application as it effects the projects objectives, scope of study, project characteristics, the participants and overall requirements of the project Multi-disciplinary team with appropriate skill mix The skill of VM facilitator The structured approach through the VM process A degree of VM knowledge on the part of the participants Presence of decision makers in the workshop Participant ownership of the VM process output Preparation prior to the VM workshop The use of functional analysis Participant and senior management support for VM A plan for implementation of the workshop outcomes (Male, Kelly et. al. 1998; Kelly, Male et. al. 2004) 	<p>Primary core elements of VM(Kelly, Male et. al. 2004):</p> <ul style="list-style-type: none"> Value system Team based system The usage of function analysis leading to in depth understanding towards the project <p>The Job Plan is:</p> <ul style="list-style-type: none"> A prescribed series of steps that implement the VM methodology (Kermode, Sivaloganathan et al. 2000) A guide to VM implementation of the basic process (Kermode, Sivaloganathan et al. 2000) Used to manage the focus of the team's thinking leading to collective innovation rather than uncoordinated individual activity <p>The VM Workshop:</p> <ul style="list-style-type: none"> Typically carried out by the VMF and the selected participants, continuously 3- 5 days or 4-7 days of duration (Kelly, Male et. al 2004) 15-20 participants should be the ideal number of VM participants for 2 days study (Che Mat 2006) 		
			 <p>Figure 2: Opportunity to Change a Design</p>	<table border="1"> <thead> <tr> <th>Pre-workshop Stage</th> <th>Workshop Stage (Job Plan)</th> <th>Post-Workshop Stage</th> </tr> </thead> <tbody> <tr> <td> Establish VM timetable Determine study objectives Select study facilitation team Gain stakeholder commitment Select participants Arrange venue Brief participants Brief presenters Circulate information </td> <td> Information phase Analysis phase Creativity phase Judgement phase Development phase Presentation phase </td> <td> Implement action plan De-brief stakeholders Distribute study report Evaluate study performance </td> </tr> </tbody> </table> <p>Table 1: The Details of VM Procedure</p>	Pre-workshop Stage	Workshop Stage (Job Plan)	Post-Workshop Stage
Pre-workshop Stage	Workshop Stage (Job Plan)	Post-Workshop Stage					
Establish VM timetable Determine study objectives Select study facilitation team Gain stakeholder commitment Select participants Arrange venue Brief participants Brief presenters Circulate information	Information phase Analysis phase Creativity phase Judgement phase Development phase Presentation phase	Implement action plan De-brief stakeholders Distribute study report Evaluate study performance					

Note: Early stages of VM application would ensure better return on investment (Che Mat 2006)

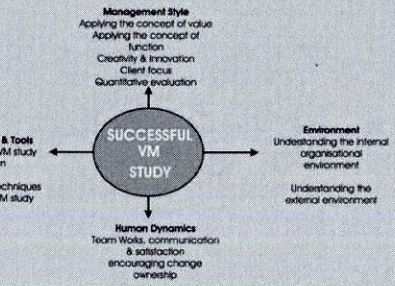


Figure 3: The Essential Ingredients of a Successful VM Study
Adapted & Modified from: Kelly, Male et. al. (2004)

Figure 3: VM in General.

In the third stage, the prototype VM Guidelines was disclosed to a panel of professionals. The panel consisted of seven experienced client representatives and professional consultants who were consulted for their comments, suggestions and views. The panel consisted of a public client, a private client, an architect, an engineer, a quantity surveyor, a project manager and a VM facilitator. They were selected based on chosen criteria such as they were members or representatives of the appropriate professional bodies and organisations (such as Public Works Department, Construction Industry Development Board, Real Estate Housing Development Association, Institute Value Management Malaysia, Institute of Engineers Malaysia, Institute of Surveyors Malaysia, Malaysian Architects Association and Project Management Institute). Most importantly, all had undergone the process of VM workshops. Between them, they have a cumulative total of 20 VM workshops experiences and an average of 20 years of working experience per person in the construction industry. The objective was to seek their comments, advice and opinions on the proposed VM Guidelines. The comments, improvements and views received from the panel were incorporated into the prototype VM Guidelines. As a result, minor changes were made to the draft of VM Guidelines.

Since the research was made up of a rigorous methodology, it was decided that due to time constraint only one round of the pilot testing was conducted. Hence, further research is needed to test its applicability to the general Malaysian construction industry to ensure its future development towards a more dynamic approach for managing future value.

The method of research triangulation adopted in the research has adequately addressed issues related to the methodological rigour of research of this nature and has also addressed issues related to validity and reliability. Documents, literature reviews, surveys, interviews and observations are uniquely juxtaposed in a holistic blend to obtain the data desired in order to map out the landscape of the VM field in the Malaysian construction industry.

4. CONCLUSIONS

It is hoped that the Malaysian construction industry will be responsive towards the proposed VM Guidelines, thus, leading to the establishing of influential political support for its future implementation. The study sees the proposed VM Guidelines which have evolved from the collected data as a consultative document rather than a set of instructions.

VM does have a positive impact as it provides a vehicle for establishing the project rationale. It also generates options which will benefit the future of the Malaysian construction industry in providing better value. The assistance of the Ministry of Finance and the Public Works Department will provide the start and impetus needed for the further application of the VM process in the Malaysian construction industry whereby the endorsement towards VM methodology will lead to further growth.

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