QUALITY AND VALUE MANAGEMENT IN CONSTRUCTION
~ Achieving Excellence through Value-Managed Quality System (VMQS)

Ong Hock Tek
VM Practitioner/Registered QS/Accredited Mediator/PanelArbitrator
BSc(Hons) MSc MBA DipM DipICArb MMIArb
MIVMA MISM FCIOB FRICS FSIArb FCIArb

Director

Of

Pro-Value Management, Malaysia
(a member of Entrusty Group of Companies)

INTRODUCTION

In recent years, Value Management ("VM") has taken a broader context and applications, moving from the usual "hard" to "soft" VM applications in the construction industry. Increasingly, the emphasis on economic value or value for money is shifting to other equally if not more important values such as environmental, social, stakeholders, systems, quality, etc.

This paper aims to provide a brief overview of the application of "soft" VM in quality management system (QMS). It reports the VM process and outcomes from a VM workshop and its follow-up sessions for a Group of Companies in Malaysia who has since achieved their ISO 9001:2000 certification.

The use of VM in developing a better quality management system is another example of VM shifting from the traditional or conventional "hard" applications into "soft" system applications. By integrating VM into a quality management system, called "Value-Managed Quality System (VMQS)", that complies with the recent ISO 9001:2000 quality standard, it is possible for construction companies to achieve better effectiveness and efficiency, as well as fulfilling the continual improvements requirement of the said international standard. Such value achievements and improvements should allow for sustainable competitive advantages to be realized.

Recently, the Masters Builders Association Malaysia (MBAM) has even adopted a group quality scheme using VMQS to facilitate contractors and sub-contractors in Malaysia to achieve their ISO 9001:2000 certification, accordingly. This is in line with the association's aspiration to promote and encourage contractors, sub-contractors and others to deliver quality works on their building and construction projects, both locally and overseas.

The subsequent contents of this paper is divided into the following headings;

- Value Management and its Recent Development in Malaysia.
- ISO 9001:2000 Standard.
- Quality Management and its Principles.
- Value-managed Quality System.
- The VM Workshop and Its Follow-up Sessions.
- Key Outcomes and Recommendations
- The MBAM Group Quality Scheme
- Summary/Conclusion

Key Words – Value Management (VM), Quality Management System (QMS), ISO 9001:2000, Value-Managed Quality System (VMQS), MBAM Group Quality Scheme, VM Workshop, Job Plan, Function Analysis, "Soft" VM.

VALUE MANAGEMENT & ITS RECENT DEVELOPMENTS IN MALAYSIA

Traditionally, the applications of the value methodology have been focussed upon products, facilities and projects, spreading from manufacturing to various industries, including the construction industry. It has evolved from Value Analysis (VA) during the Mile's days in the 1940s to Value Engineering (VE) in the 1960s and later to Value Management (VM) in the 1980s.

In the construction industry, VA, VE and VM are also terms used synonymously to describe a structured and systematic process to the identification of function of a building or facility to ensure that it can be constructed and delivered in the most cost-effective manner. The view of the terms being synonymous is also shared by Society of American Value Engineers (SAVE) International (SAVE website, 2003, which defined it as,

> "….synonymous with the term value management and value analysis, value engineering is a professionally applied, function-oriented, systematic team approach used to analyze and improve value in product, facility design, system or service – a powerful methodology for solving problems and/or reducing costs while improving performance/quality requirements."

Whether it involves a product, system, facility or project, the value methodology original and basic philosophy is about achieving good value and the removal of unnecessary costs, costs which do not contribute to its functions and/or purposes, thereby maintaining or enhancing its value, usually in monetary terms. Consequently, it is not about cost reduction, but more so on the eventual value outcome and achievement. In essence, VM focuses on value rather than on cost alone.

The value methodology has been given due recognition through the Australian and New Zealand standards AS/NZS 4183-1994 and the relatively new European standard BS EN 12973:2000. The latter defined VM as " a style of management, particularly dedicated to motivating people, developing skills and promoting synergies and innovation, with the aim of maximising the overall performance of an organization". In its simplistic term, it is "A management approach to help in maximising the overall performance of an organization".

The Malaysian Construction Industry contributed to about 3.2 percent of its GDP totaling RM209.27 Billion (Economic Planning Unit 2001). The possible impact of VM applications in the said industry can be significant as a modest ten percent potential savings in the industry could generate an estimated total financial savings of RM670 Million using an estimated investment of RM22 Million, assuming a return on investment of 30:1. However, whilst VM has been widely practiced in countries like the USA, UK, Australia and Hong Kong, it is still not so in Malaysia due to the lack of knowledge and awareness of its existence and applications. VM can be considered still at its infant stage in Malaysia as only a handful of construction projects have been known to apply VM so far (Yeomans & Ong, 2001).

Whilst there are evidence of VM applications in the Malaysian construction industry, there is no known VM study been applied on QMS in Malaysia, to-date. Notwithstanding, it is hoped that with VM workshop on QMS described and discussed herein, it should provide clear supportive evidence that VM can be applied in quality management system to make it more efficient and effective. This application of VM in developing a better quality management system is another example of VM shifting from "hard" into "soft" VM system applications. The VM process and outcomes from the initial development and application of "soft" VM in quality management system (QMS) to achieve ISO 9001:2000 certification is described and discussed in the subsequent sections.

ISO 9001 : 2000 STANDARD

Since the introduction of ISO standards, there are over 2,750 companies having achieved ISO standards in Malaysia according to the Department of Standards Malaysia (DSM, September 2003), with many of them from the manufacturing industry. Of which over 250 companies are ISO 14000 certified. In the construction industry, there are just over 150 companies ISO certified.

The International Organization for Standardization (ISO) introduced its 9000 standard for adoption by

organizations. The standard comprised of ;

i. ISO 9000: 2000 Fundamentals and Vocabulary
ii. ISO 9001: 2000 Requirements of Standards
iii. ISO 9004: 2000 Guidance for Performance Improvement

The requirements of the standard, ISO 9001: 2000 promotes a process approach in the developing, implementing and improving a quality management system effectively in order to enhance customer satisfaction by meeting their requirements. It emphasizes on the importance of ;

- understanding and meeting requirements,
- need to consider processes in terms of added value,
- obtaining results of process performance and effectiveness, and
- continual improvement of processes based on objective measurement.

The salient provisions in said standard are riddled with emphasis for organization to meet customer requirements and satisfaction through continually improving the effectiveness of its QMS. For example, in clause 1.1, it requires an organization to demonstrate its ability to meet customer and applicable regulatory requirements consistently and to enhance their satisfaction through its effective application and continual improvement (including processes). In Clause 8, it requires the organization to monitor, measure, analyse and continually improve the processes through planning and implementation to ensure conformity of the QMS and product. Sub-clause 8.5.1 further emphasised the need for continually improvements in the QMS by using quality policy, quality objectives, audits results, analysis of data, corrective and preventive actions and management review.

The following diagram provides the QMS Structure of the salient provisions in ISO 9001: 2000.

QUALITY MANAGEMENT & ITS PRINCIPLES

A Quality Management System (QMS) is a management system that focuses on the quality policy and requirements of an organisation. It is essential for a QMS to be market-orientated so as to cater for the customers' current and future requirements or needs. To do so, the resources and activities need to be managed as a process, efficiently and effectively.

Most QMS employs the "Plan-Do-Check-Act" (PDCA) methodology (ISO9001:2000), whereby :

PLAN: Establishes the objectives and processes necessary to deliver results in accordance with customer requirements and organizations policies.
DO: Implements the processes.
CHECK: Monitors and measures the processes and product against policies, objectives and requirements for the product and report the results.
ACT: Taking actions to continually improve process performance.

In QMS, continual improvement enhances the organizational capabilities and flexibility to allow it to react quickly to opportunities and to make continual improvement as a permanent objective of the organization. The following diagram illustrates the key quality related criteria and activities essential in meeting customer requirements and satisfaction (ISO 9001:2000, p.vi);

In summary, a good and effective QMS should adopt the following principles (ISO9000:2000, p.v) :

1. Customer focus
2. Leadership
3. Involvement of people
4. Process approach
5. System approach to management
6. Continual improvement
7. Factual approach to decision making
8. Mutually beneficial supplier relationship

VALUE-MANAGED QUALITY SYSTEM (VMQS)

Whilst ISO 9001:2000 stipulates use of quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review to achieve continual improvements in QMS, it does not state any specific approach or technique to meet or achieve them, other than the PDCA methodology. Essentially, the standard tells you what to do but not really how to produce an effective and efficient QMS.

A Value-Managed Quality System (VMQS) is a way forward to towards achieving a more efficient and effective QMS that can also provide for continual improvements. It is defined as "A quality management system that complies with the current ISO standard by integrating value management into the quality system for continual improvements"(Ong & Loh, 2002). Essentially, VMQS guides you on WHAT and HOW to do it. Whilst most QMS is concern with "doing the things RIGHT" by through policies and procedures to meet the customer requirements efficiently, VM focuses on "doing the RIGHT things" by aiming to achieve value by ensuring effective policies and procedures and continual improvements meet or enhance customer satisfaction. With the combination of the two powerful and effective methodologies, VMQS allows the notion of "Doing the RIGHT things RIGHT" to be realised.

In VMQS, VM can be introduced into QMS in three ways;

1. When embarking on a QMS
2. Reviewing an existing QMS
3. Continual improvement of any QMS.

For companies already ISO certified, they can also review and integrate VM into their QMS to ensure continual improvements thereby enhancing their efficiency and effectiveness. The VMQS Project Master Plan, suggests that VM can be integrated into a four phased QMS programme, namely:

Phase 1: Initial Project Planning
Phase 2: Value Management Workshop
Phase 3: Quality System Documentation
Phase 4: Compliance Audit

In Phase One - Initial Project Planning, the tasks include the QMS project launch and QMS team appointment (selection and defining their roles and responsibilities). This phase also involves an initial assessment or Gap Analysis of any existing organization policies and procedures as well as an ISO 9001:2000 Management Awareness Training to the people in the organization.

Value Management Methodology and Workshop is introduced under Phase Two after phase one, preferably after gaining an appreciation of the existing organization policies and procedures. It is a two-day team orientated workshop to provide the participants with the understanding and appreciation of the philosophy, appreciation and applications of VM.

Phase Three is basically concern with the quality system documentation preparation and implementation. The tasks involve process mapping and its documentation, trial implementation, finalization of documentation, internal audit training and implementation.

The last phase, Phase Four entitled "Compliance Audit" is to ensure that all ISO documentation prepared and implemented are in compliance with the ISO 9001:2000 requirements. This phase involves a review of the documentation by the management and any deficiencies are corrected following the compliance audit.

Several benefits can be identified with VMQS, namely:

a)   Better quality system and performance;
b)   Better focus on company's and client's objectives;
c)   Foster and improve team working;

d)	Achieve value for money;
e)	Improved functionality and efficiency;
f)	Reduction in time and costs;
g)	Higher value and quality of services, design, etc.;
h)	Increase public image (willingness to improve);
i)	Encourage creativity and innovation;
j)	Improves efficiency/effectiveness in utilising resources;
k)	Improves risks management;
l)	Increasing/sustaining competitive advantage;
m)	Ensures continual improvements.

THE VM WORKSHOP AND ITS FOLLOW-UP SESSIONS

The following is a brief account of the VM workshop and its follow-up sessions conducted for three companies in their pursuit to have their quality management systems (QMS) certified to ISO 9000:2001 standard involved in providing engineering design, project management and town planning services.

The VM Team comprised of the management and staff involved in the design, operations, finance and management/marketing functions of the three companies. As the team was relatively large (i.e. about 40 persons in total), they were divided into five groups of manageable size, each concentrating on a separate and different area of study established at the said workshop. A six stage VM Job Plan methodology was adopted and facilitated by a VM facilitator, accordingly.

Prior to the VM workshop, the VM Team had already undergone Phase One of the VMQS process, which included the initial assessment or Gap Analysis of the existing organization policies and procedures as well as an ISO 9001:2000 Management Awareness Training together with the other people from the Group.

The types of processes and clauses identified then as being relevant and applicable to the companies include:

Types of processes	ISO Clause
1. Management Review process.	4.1, 5.6
2. Control of Documents process.	4.2.3
3. Control of Records process.	4.2.4
4. Resource Management Planning & Maintenance process.	6.1,6.3,6.4
5. Human Resource Training & Development process.	6.2
6. Pre Contract & Tendering process.	7.2
7. Project Design & Development process.	7.3
8. Regulatory Research process.	7.2.1
9. Purchasing,Subcontractor Selection & Evaluation process.	7.4
10. Project Planning & Implementation process.	7.5
11. Project Monitoring & Measurement process.	8.2.3, 8.2.4
12. Post Contract Servicing process.	7.5.2
13. Control of Monitoring & Measuring Devices process.	7.6
14. Customer Communication & Satisfaction monitoring process.	8.2.1
15. Internal Audit process.	8.2.2
16. Control of Nonconforming Works process.	8.3
17. Corrective Action process.	8.5.2
18. Preventive Action process.	8.5.3

An integrated report on the contents and recommendations for implementation (including the presentation and report by the five groups on their area of study) was submitted to the Group management for their consideration and decision after the workshop and its follow-up sessions.

The following section provides a brief account of the VM workshop and follow-up sessions.

<u>The VM Workshop</u>

The VM workshop used a typical VM Job Plan Methodology, comprising of the following common stages;

1.   Information
2.   Analysis
3.   Creativity
4.   Judgement
5.   Development
6.   Recommendation

In progressing through the above stages, a range of sub-processes such as team building were introduced to enhance the group dynamism and teamwork of the VM Team, as well as to harness the collective tacit knowledge and expertise of the participants.

The agenda and programme for the 2-day VM workshop was discussed and agreed with the Group's management prior to the conduct of the VM workshop and follow-up sessions.

Prior to the conduct of the VM Job Plan stages, a short presentation giving an overview of the VM and VMQS background and philosophy was presented by the VM Facilitator. The presentation included team building exercises to foster and enhance the group dynamics and team working amongst the staff and management of the three companies, which totalled about 40 participants.

<u>Stage One - Orientation/Information</u>

The aim of this stage of VM is to provide the relevant information to establish the area/s for VM study. Its provides opportunity for the VM participants to understand the issues and constraints, as well as to disseminate and exchange relevant information amongst themselves.

The orientation/information stages began with each company's Management Representative (MR) giving a short presentation of their company's background, organisational structure, functional departments and their operational procedures & practices. They were encouraged to include a master or overall layout and flowchart chart showing the linkage of key processes.

Following the presentation by the MRs, the staff and management from the three companies were then divided into five VM groups, each being represented by staff and management of the three companies.

The VM workshop objectives established at the outset were :

- To understand value-management (VM) and value managed quality system (VMQS) methodology;
- To review and improve the current Group practices and procedures;
- To review and improve the various documented processes in the quality management system;
- To foster team working amongst the staff and management personnel.

It is during this stage that the areas of VM study were established and selected by the five groups using brainstorming and group nominal process. Each of the five groups identified six important areas of study and they then come together to decide and agree on five most important and common areas of study. The following list the five areas, in the order of importance:

1.   Filing & Document Storage System;
2.   Working Environment;
3.   Training ;
4.   Staff Welfare ;
5.   Communication / Work Flow.

<u>Stage Two - Function Analysis</u>

Function Analysis is basically a disciplined approach to meet the needs and required function/s. Function Analysis System Technique (FAST) diagram was used to illustrate how depending functions are graphically arranged to allow for "how" and "why" questions to be addressed logically. The technique assisted in the analysis of each function to eliminate unnecessary processes and provides a framework to seek better ideas or options.

Function Analysis using FAST diagramming was developed for all the five areas of study to illustrate the depending functions in each area of study. One of the five developed diagrams, is shown below.

WORK ENVIRONMENT

<u>Stage Three - Creative / Speculative</u>

This stage involved the generation of ideas in a free and creative way through brainstorming with the absence of any criticism or preconceived inhibitions. Such technique forces the existing and initial developed processes as well as any assumptions to be rigorously challenged and the ideas generated were focussed on the basic functions established under the earlier stage.

All the five groups were facilitated to generate ideas to meet the required functions. A sample of the ideas (8 each) generated on the five areas of study is tabulated below:

TRAINING (16 ideas)	BETTER ENVIRONMENT (12 ideas)
1. Coordinate structured training for each department	1. Invest in ICT
2. Learn from completed project	2. Provide area & personnel for storage
3. Compulsory stint at site	3. Larger working area
4. Apprentice "mentor" system learning	4. Facilitate people movements
5. Allocate annual budget for training	5. Safe work area
6. Attend BEM / IEM / MIP free / cheap seminar / courses	6. Prevent eating on working area
7. Sponsor selected staff for higher learning	7. Comfortable & relax atmosphere
8. Departmental monthly training	8. Reduce noise interference
FILING & DOCUMENT STORAGE SYSTEM (17 ideas)	STAFF WELFARE (14 ideas)
1. Proper document flow	1. Staff of the month competition
2. Proper catalogue system	2. Monthly mini gathering
3. Minimise storage space	3. 'Solat Hajat" / Tahlil / Happy hour session
4. Establish networking system	4. Birthday gathering (occasionally) and present (cheap one)
5. To provide paperless storage (hard disk)	5. Within and inter-department meeting
6. Safe from hazard, fire, animal, fungus and ants	6. Management and staff meeting
7. Storage retention time	7. Family day / sport day
8. Need librarian / document controller	8. Frequent staff course & seminar

<u>Stage Four - Judgement</u>

The Judgement or Judicial Analysis stage involved the use of analytical or convergent thinking through screening, ranking and culling of ideas generated during the Creative/Speculative stage to give the most value improvement potential.

The ideas are evaluated by listing the advantages/disadvantages of each idea with the aim to justify them rather than merely rejecting them. Some ideas were combined and/or expanded and those that failed to perform the functions were rejected. This elimination and consolidation process eventually produced a shorter list of viable judged ideas. The following list a selection of the judged ideas in the three of the five areas of study.

Filing & Document Storage System (Total 8 judged ideas)

Item	Proposed Change	Advantages	Disadvantages
Systematic filing	• To overhaul and reorganized with the help of external professional assistance. • A better filing and storage system	• Easy access • Traceability • To avoid lost of document	• Cost for consultation • Need a bigger storage • Cost for extra human power of auditing & controller
Enhance with ICT facilities	• Upgrade to ICT facilities main function	• Less storage • Paperless environment • Easy access • Easy traceability	• Cost for facilities, maintenance & professional training • Chances for management to decide for reducing man power.

Training (Total 10 judged ideas)

Item	Proposed Change	Advantages	Disadvantages
Coordinated structured training	• Develop comprehensive training manual	• Organised and systematic • Comprehensive • Need of staff and career development is fulfilled.	• Time constraint • Extra working hours needed in preparing manual training
Learn from completed projects	• Person in charge of project to document and disseminate their knowledge • Highlight crucial points what we can learn mistakes/lessons	• Sharing of knowledge • Learning from mistakes • Other people can learn to improve, not to repeat mistakes • Develop standards for future use • Improve company knowledge	• Limited to certain projects done or available project

Work Environment (Total 9 judged ideas)

Item	Proposed Change	Advantages	Disadvantages
ICT/Internet Networking for all staff	• Overall network system equipment maintenance • IT Manager/Server • Wireless • Software/Hardware Updating • Equipment Maintenance	• Reduce time • Centralise system • Back-up System • More efficient work methodology • Better communication • Internet connection	• High cost – capital cost, maintenance cost, set-up of a new department
Refurbish / Redesign office layout	• New working modular layout • Big space • Enhancement of environment – Landscaping • Specific space for pantry / recreational	• Better and beautiful office look for staffs and visitors • Cheerfulness of office • More staff motivation • Good company / office image • More space for storage • Air / quality lighting	• Cost minimized with involved of staffs

Stage Five – Development

This stage is usually the final development and refinement process, which involves the checking and verification of viability, fit for purpose, value for money, benefits, depending on the selected ideas or alternatives. As this VM study involved mainly processes and practices/procedures, it was difficult and time consuming to determine the savings or financial implications of the selected ideas during the workshop. Objective evaluation techniques such as life cycle costing, energy use modeling and computerized cost modelling appraisals to establish the cost of the preferred ideas were not applicable.

The development of viable ideas was confined to determining whether the advantages far outweigh the disadvantages and its perceived contributions or benefits towards the Group. Such development and evaluation on the selected ideas are more subjective assessments rather than objective evaluation, traditionally. Subjective evaluation techniques such as criteria weighted charts could have been employed without the time constraints.

Nevertheless, most of the judged ideas were chosen for further consideration and/or development (i.e. contents and process flowcharting) for integration into the QMS documentation at the subsequent follow-up sessions. As the Group's management has targeted to achieve ISO 9001:2000 certification by the end of this year, further development of several judged ideas were deferred until after the said certification, due to the time needed to do so. Upon their detailed development, they can be included at the next management review and audit, usually six months after the certification. This can then also form part of the continual improvements as provided in the ISO provisions.

Stage Six - Recommendation

This stage comprises two phases, a visual presentation followed by a written report submission to the Group's management. The presentation encompassed the various stage outcomes and the final recommendations put forward to the Group's management for their consideration and approval.

Follow-up Sessions

The main aims of the follow-up sessions were to allow for detailed consideration and development of the recommended options or ideas and for the review and reconsideration of the various QMS documented processes for logic sequencing and improvements i.e. process mapping and documentation.

During the follow-up sessions, each company's objectives, policies, structure and work activities, including the process flow charts and procedures documented for the QMS documentation were reviewed by the QMS teams together with the VMQS consultants. Any appropriate amendments/revisions were made, accordingly. For example, a review was made on the original three separate design processes and their flow charts, which included design processes for turnkey, design & build and conventional procurement systems. Following a function analysis study, which questioned the basic function of design, it was concluded and decided that one common design process could be adopted. In addition, it was decided that design VM should be included to form part of the design process in order to allow for better design considerations and decision in meeting the client's requirements.

The following shows an abstract of the process flow and procedure of revised design and development process (part) after VMQS.

Another significant outcome was the review on each company's organisational structure, whereby it was suggested that a matrix structure be adopted for the Group to allow for better integration and management of the companies under the Group.

After the reviews, all the companies made the necessary revisions/additions and completed their draft ISO documentation for subsequent follow-up and presentation sessions. The final follow-up session involved the

management review attended by the QMS teams, group leaders and top management of all the three companies. They were requested to consider, review and reflect upon the VM recommendations and the concluded draft ISO documentation of each company's processes and for the management to make their decision on them prior to implementation.

KEY OUTCOMES AND RECOMMENDATIONS

The key outcomes and recommendations resulting from the VM workshop and follow-up sessions can be summarised, as follows :

1. To streamline the possible common processes in Administration (General & Maintenance), Accounts/ Finance, Human Resource and Training for all three companies;
2. To revise and reorganise the quality objectives established;
3. To revise the relevant policies and procedures;
4. To revise the design processes;
5. To incorporate VM into the design process;
6. Management is to consider changing and adopting matrix organizational structure for the Group.

Following the aforesaid VM workshop and its follow-up sessions, the QMS representatives from the VM Team, were subsequently required to review, revise and finalize the processes and QMS documentation by incorporating the outcomes and recommendations. They were also required to provide the records of QMS implementation for subsequent the final review sessions (3 days) thereafter. A tabulated summary of the outcomes and recommendations for one of the three companies is provided below. The tabulation compares the status "Before QMS Introduction" and "After QMS Introduction (Before and After VM). Essentially, the comparison illustrates the outcomes after Value-Managed Quality System (VMQS) application.

A Comparison Before And After VMQS

No.	Documents	Before QMS	Comparison After QMS Introduction	
			Before VM	After VMQS
1	Quality Policy	NAV	A	I
2	Quality Objective	NAV	A	I
3	Organisation Chart	NAV	A	I
4	Control of Documents	NAV	A	I
5	Control of Records and Storage	NAV	A	I
6	Management Review	NAV	NAV	A/I
7	HR Employment, Training and Evaluation	NAV	A	I
9	Admin Facilities & Equipment Maintenance	NAV	NAV	A/I
10	Customer Feedback Processing	NAV	NAV	A/I
11	Design & Development Processing	NAV	NAV	A/I
12	Detail Engineering Design Process	NAV	A	NR
13	Turnkey / Design & Built	NAV	A	NR
14	M/E Construction Stage Drafting Process	NAV	A	NR
15	Design and Build Contract flow chart for Highway and Bridge Division	NAV	A	NR
16	Post Contract Design	NAV	A	NR
17	Pre-Contract Design	NAV	A	NR
18	Drafting Process (Conventional)	NAV	A	NR
19	Drafting Process(Turnkey/Design & Build)	NAV	A	NR
20	Tender Acquisition	NAV	A	NR
21	Purchasing	NAV	A	NR
22	Outsourcing of Works	NAV	NAV	A/I
23	Planning & Control of Printing Work	NAV	NAV	A/I

24	Construction Supervision & Control - Design Office	NAV	NAV	A/I
25	Construction Supervision & Control-Site Office	NAV	NAV	A/I
26	Construction Supervision & Control - Preparation of As Built Documents	NAV	NAV	A/I
27	Control of Customer Property	NAV	NAV	A/I
28	Internal Audit	NAV	NAV	A/I
29	Corrective and Preventive Action	NAV	NAV	A/I
30	Quality Plan	NAV	NAV	A/I

Key :　　　　　　NAV – Not Available　　　　　A – Available　　I – Improved　　　　NR – Not Required

THE MBAM GROUP QUALITY SCHEME

Recently, the Masters Builders Association Malaysia (MBAM) has adopted VMQS in their group quality scheme to facilitate and guide contractors and sub-contractors in Malaysia towards achieving their ISO 9001: 2000 certification, accordingly (MBAM, 2004). The scheme is in line with the association's aspiration to promote and encourage contractors, sub-contractors and others to deliver quality works on their building and construction projects, both locally and overseas.

In essence, the VMQS fosters "Doing The Right Things Right" concept and ensures that the quality management system developed for any construction companies can deliver more effective and efficient organisational and work processes continuously to achieve better quality work and products, consistently. It changes the traditional mindset and construction approach into dynamic companies capable of delivering quality construction and performance excellence at international quality standard.

The MBAM Quality Group scheme launched recently comprises upto six (6) construction companies, each represented by upto four company representatives, to undergo a five phased quality development programme, namely

Phase 1 – Orientation and QMS Introduction
Phase 2 – VMQS Introduction
Phase 3 – VMQS Documentation
Phase 4 - VMQS Implementation
Phase 5 – Compliance Audit and Certification.

Briefly, during Phase One, the construction companies registered for the programme are required to appoint their own Management Representative (MR), Assistant MR and Document Coordinator (DC) for each company to undergo the group training and workshops conducted by the VMQS consultants. They will then be form the Quality Team within their company to assist in developing the Quality System. The MR should preferably be a member of the Top Management to ensure management participation and prompt approval for the system developed. Amongst the training topics covered are;

- Awareness & understanding of a Management System based on ISO 9000 standards
- The Principles of Quality Management
- Documentation & Implementation requirements.

In the second phase, the Quality Teams will be guided on the mapping of processes which already exist in their respective companies using a process model approach and how to integrate value management into their company quality system in order to be become more effective and efficient management system. Among the topics covered are;

- Process and Documentation Mapping
- What is Value Management (VM)

- The Philosophy of VM and VMQS
- Past and Present Developments
- Benefits of VM and VMQS
- The Concepts of Value
- Unnecessary Costs
- Job Plan and VMQS Methodologies

Phase Three basically involves the MR, AMR & DC working to meet the documentation requirements and supporting documents relevant to their respective companies. Site visits by the appointed VMQS consultants are made to assist in the briefing and implementation of a quality system to the various company personnel. Towards the end of this phase, each company will have finalised their VMQS documentation for review by an accredited Certification Body for the Adequacy Audit

During Phase Four, the participating companies should by now partially implemented their newly developed quality management system in their respective company. Guidance are provided towards full implementation including the need to conduct Internal Audits. Among the workshop and training topics include:

- Understanding the ISO 9000 Audit terms
- Audit Planning & Implementation
- Improving system through audit findings

In the final phase or Phase Five, the each company will have undergone their own Management Reviews. A Pre-compliance assessment will be conducted by the appointed VMQS Consultants to ensure that the company is ready for the actual Compliance Audit. The ISO 9000 Certification will be awarded by the accredited Certification Body upon the recommendations of the auditors after completing the Compliance Audit.

SUMMARY/CONCLUSION

In recent years, VM has extended the traditional value for money emphasis to value for stakeholders, environment, systems, quality, social, ethics, etc, which can be equally if not more important values. If the terms VA, VE and VM can be considered synonymous, then VM can certainly be classified under two broad categories, namely "hard" and "soft" VM.

From the literature review, it is apparent that VM has already taken a broader context and somewhat higher level applications. It has shifted from the usual "hard" VM to tackle well-defined and structured problems to "soft" VM addressing the non or ill-structured management and/or complex problems/issues by using larger multidisciplinary team. It is therefore no denying that VM has certainly evolved to become a more versatile and effective management tool.

The application of VM in developing a better quality management system as presented and discussed in this paper is another clear evidence of the shift from "hard" into "soft" VM system applications. The VM process and outcomes from the initial development and application of "soft" VM in QMS to achieve ISO 9001:2000 supports the notion that VM can be applied in quality management system to make it more efficient and effective. The VM workshop and its follow-up sessions demonstrated substantial change and improvements on the development of QMS after the applications of VM. Consequently, a Value-Managed Quality System (VMQS) can be the way forward to towards achieving a more efficient and effective QMS that can also cater for continual improvements. VMQS facilitates on WHAT and HOW to produce a more efficient and effective QMS.

In essence, a Value-Managed Quality System (VMQS) is concern with "doing the RIGHT things RIGHT" in order to enhance the efficiency and effectiveness of the quality delivery process to ensure that the end product or service can satisfy the customer's or client's requirements. It is the latest innovative quality management approach aimed at changing the traditional organizational mindset and construction approach into dynamic companies capable of delivering quality construction and performance excellence at international quality standard. Such value achievements and improvements should allow sustainable competitive advantages to be realized.

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