

THE CHALLENGES AND POTENTIAL OF VALUE MANAGEMENT IN LOCAL CONSTRUCTION INDUSTRY

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Abstract

The Malaysian economy has been a star performer over the past few years and indeed is one of the most dynamic economies in Asia. In line with the expanding national economy, the construction industry has grown at a two (2) digit annual growth continuously for many years. Things have suddenly changed since August, 1997. However, Malaysians need to accept the circumstances and to improve our professionalism, capabilities, competitiveness and resilience. This paper discusses the significant contribution resulting from the Value Management applications and how it can contribute to enhance those values. The paper presents Value Management methodology, its potentials and value enhancement attached to it and dispute the perception that Value Management is just another cost cutting technique. Its potential acceptance in Malaysia and construction industry in particular is no easy tasks as a lot of convincing and marketing need to be done and minimise the challenges ahead.

1.0 Introduction

Basic Concept

Value management is defined by the Australian/New Zealand Standard AS/NZS 4183:1994 as "**A structured and analytical process which seeks to achieve value for money by providing all the necessary functions at the lowest total cost consistent with required levels of quality and performance**".

The three key words in the above definition can be understood as follows :-

Value in the above context refers to the lowest cost to reliably accomplish a function in accordance with required levels of quality and performance.

Function refers to that which the product, service, project or system does to make it work or sell.

Total cost is that all costs determined as appropriate to the particular Value Management study.

There is a view held by some that Value Management is simply just another cost cutting tool, however it misses an important feature of

Value Management which is creativity and systems approach to validate a certain proposal. It has to undergo a structured and systematic Job Plan which emphasizes on the analysis of functions. The relationship between function, cost and worth is vital in Value Management study, which can be expressed as follows :-

$$\text{Value} = \frac{\text{Function}}{\text{Cost}}$$

The significant contributions and tremendous amount of savings resulting from Value Management studies led to its worldwide application especially in developed countries and many require formal Value Management studies for their projects above certain budget. Value Management has undergone some adjustments from the early days as developed by Lawrence Miles in 1947 in General Electric Company of USA.

In Malaysia, Value Management application is still at the infant stage. However, judging from the feedback that I gathered from the Value Management roadshow in 6 major towns in Malaysia and Brunei towards the end of 1997, the respond were very encouraging and many have shown their interest to further understand this technique.

The Value Management Process (Job Plan)

Standard Value Management methodology by the Institute of Value Management, Australia involves the commonly accepted phases namely :

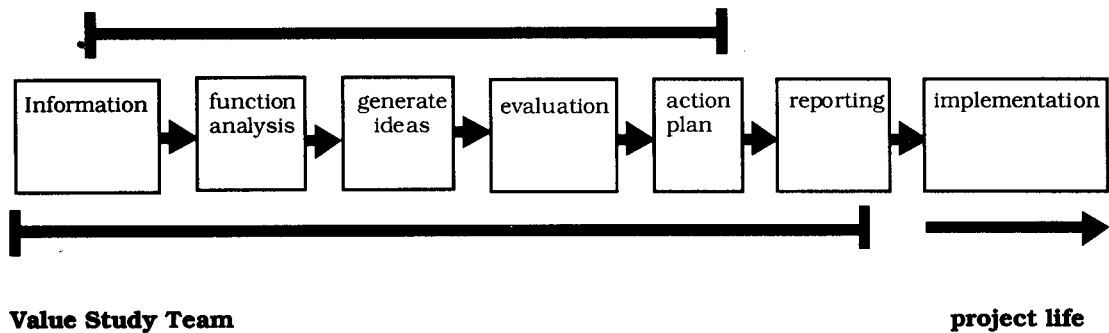
Information phase, analysis phase, creativity phase or generation of alternative ideas, judgement phase; selection of certain ideas for further consideration and evaluation of selected ideas; redevelopment of alternative value improvement proposals; action plan, and presentation of alternative proposals.

New South Wales, Australia, public sector model for the job is as below :-

Value Study Group

Workshop input

Say 2 days



Value Study Team

total study time frame

say 4 weeks

i. Information Phase

This gives the insight of the project to be studied. It is very pertinent that the background information needed for the study is identified and collected. The full understanding of the project and study objectives should be made to all participants during this phase. Some of the fundamental aspects of the study and project such as identification or project rationale from the perspective of stakeholders position e.g. conforming with corporate objectives and/or service strategies are discussed. Project assumptions, the problem situation, if any and key issues and concerns are highlighted.

ii. Analysis Phase

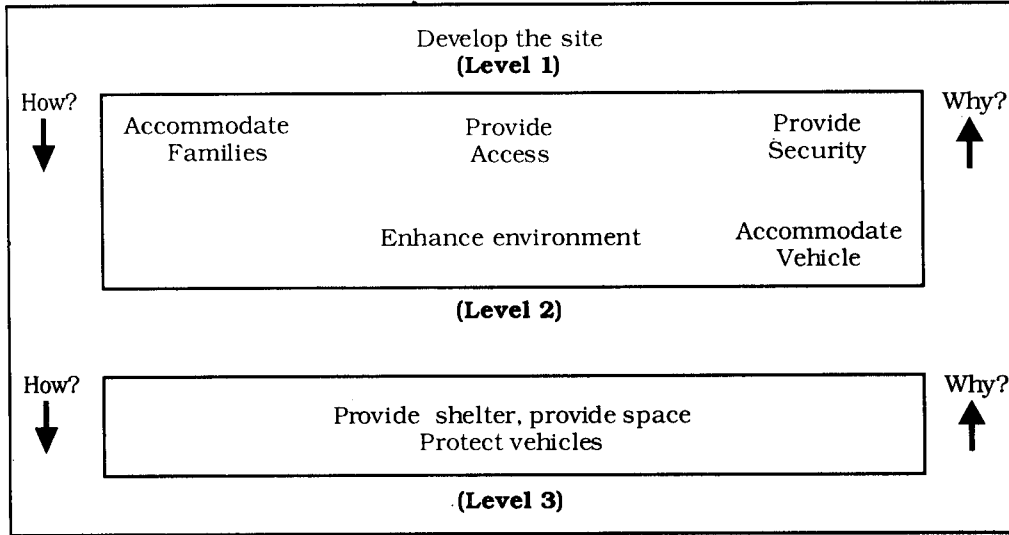
The establishment of project functions during this phase sets Value Management apart from other cost reduction methods. Key questions are asked during this phase;

- What does it do? (What are the functions?)
- What does the function cost?
- What is the function worth?
- What must it do?, (to ensure that the functions are performed reliably)

The group prepares Value Management tool known as the FAST diagram, which is the acronym for Functional Analysis Systems Technique, and is a diagram which sets out the listed functions using a system technique.

On the other hand, the technique can utilize the concept of functional hierarchy which is possible to move from a higher level of hierarchy to a lower level by asking the question "How?" and to move from a lower level of hierarchy to a higher level by asking the questions "Why?". This can be seen from the diagram below as an example.

Diagrammatically



iii. Creativity Phase

The creative thinking technique/s are adopted in order to generate a large mass of ideas. Questions like

- "Can we simplify anything?"
- "Can we eliminate anything?"
- "Can we add anything?"
- "Can we combine anything?"
- "Can we re-locate anything?"
- "Can we change anything?"

are normally asked to stimulate creativity. The ideas that sometime look unconventional are generated when considering

- What are the alternatives?
- Which alternative/s satisfy the function?
- What will the alternative cost?

iv. Judgement and Evaluation

Ideas from the creative phase are examined by the Value Management team in terms of their feasibility and that can be developed into proposals. Teamwork discussions are vital as to achieve some kind of consensus solutions. Value Management tools such as evaluation matrices is often used to rationalize the ideas. Many ideas are often consolidated or combined

as to narrow down the best possible alternatives but conforming with the functional requirements.

v. Development Phase

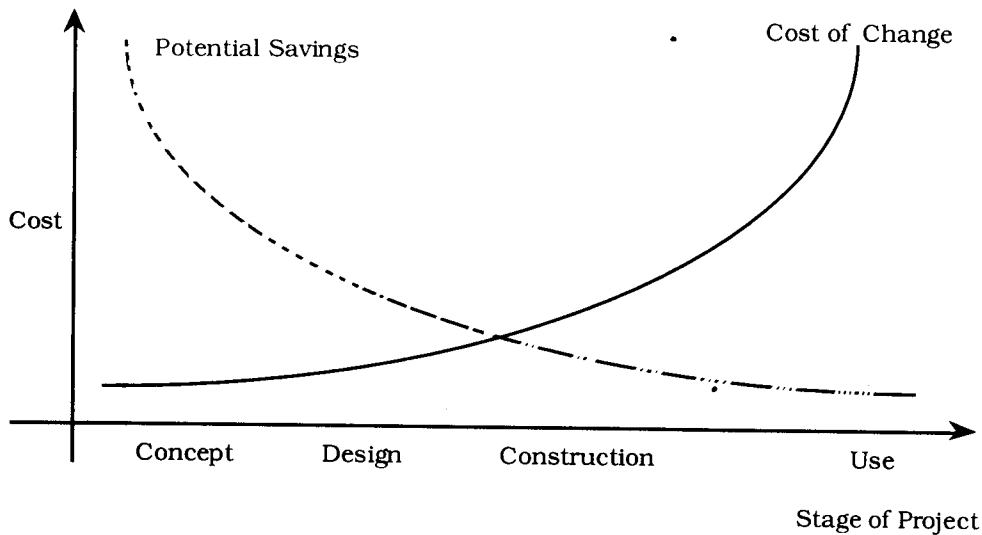
The ideas that have been evaluated and selected earlier are developed in greater detail. What improvements and changes have been made compared to the original concepts/designs. The pros and cons of alternatives are weighed as to determine their viability. Each alternative is costed preferably the full life cycle cost of the building depending on the availability of data.

vi. Presentation

The full report is produced on the outcome of the Value Management study that contains executive summary, full detail of the workshop process, recommendations amongst others.

When to apply Value Management and Its Duration?

Value Management study can take place at any stage in the development of a project. However it is acknowledged that there is the potential for greater return on investment if it is used at the very early stages illustrated in figure below.



The cost of making changes and remedial works will be greatly increased later in the development stage.

There is no fixed rule concerning the Value Management study duration, however the 40 hour workshop is well established duration. In Australia and New Zealand a two-day Value Management study for conceptual proposal is widely accepted.

Take the case of a housing development. The developer normally engages a planning consulting firm to prepare the zoning of the development. A copy each will be distributed to other respective consultants such as Quantity Surveyors, Civil Engineers, Mechanical and Electrical Engineers, Land Surveyors and in many cases the Property Consultants to do the market analysis and pricing.

Each respective Consultant will then provide feedback based on mostly their own area of expertise and boundaries which in some cases judging on wrong assumptions. Substantial amount of time is taken to produce a master plan and numerous revisions are common. Preliminary estimates and financial analysis as many as 20 times are not unusual.

In Value Management study, unlike the traditional design process, it depends upon a multi-disciplinary representative group of people working in a structured workshop led by an independent Value Management

facilitator. The workshop process capitalises on the opportunity to explore the overlapping areas of knowledge and experience between various disciplines and expertise. As such the time taken to prepare say the master plan is very much reduced.

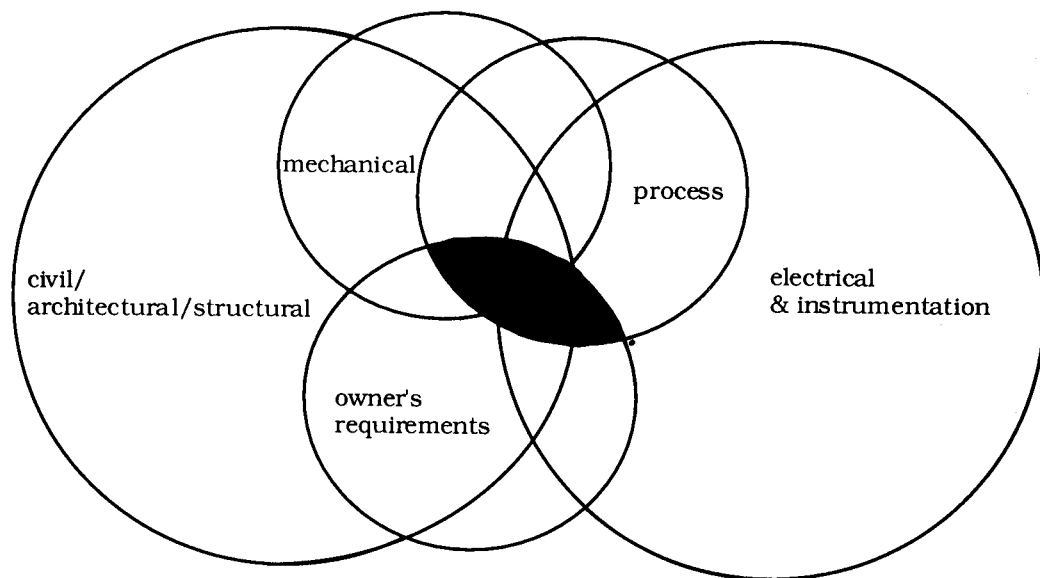
Why Value Management?

Despite increased recognition of Value Management's benefits and marked level of success worldwide, its full potential is yet to be realised especially in Malaysia. Like many other techniques or disciplines that have to undergo the stage of a wareness prior to public recognition, Value Management is of no exception. As such a continuous process of educating and marketing is essential. Among significant contributions and potentials of Value management are :

i. Value Management Promote Systems Thinking

Prof. Roy Barton strongly advocates the concept of Value Management as a tool for systems thinking, to look things in a broader perspective rather than just the brick and the mortar issue.

In one study on the condominium development that involved the author, the designer proposed the floor to ceiling height of 10' 0". After being asked what is the purpose and function of that, they responded that it was for marketing purposes, which was then disputed by



Constructive Overlap

marketing guys. The Building Bye-Laws only requires 8' 6" floor to ceiling height. However it was then decided to go for 9' 0" in height. The proposed building was 12 storey of 12 blocks. There was a saving of RM1.0 million per block with the overall savings of RM12.0 million.

ii. Establishing Customer Needs

The function analysis allows us to establish customer needs as we can identify those needs due to the participative nature of the Value Management study. Those needs statement can also be prioritised and sets the direction to achieve those needs.

iii. Value Management Change Proposal (incentive clause)

Australian Department of Defence incorporates the incentive clause in their procurement contract where the contractor is allowed to offer alternative proposal to the components through Value Management Change Proposal Programme, but not compromising on the quality nor function. The saving will be shared

between the contractor and the client on certain agreed terms.

iv. Staff Development

Team building is promoted during the Value Management study and as such it is an important staff development exercise as every participant feels that he is needed and ideas generated are noted and discussed. They also learn to work under certain pressure as the deadline for the submission of the report has to be met. The satisfaction is felt due to the savings as a result of Value Management study which they participate.

v. Partnering

Smithies (1993) in his article "Partnering - An Extension of the Value Management Process" described the partnering concept is a way of overcoming the traditional adversarial and litigious nature of the construction industry. It is a process for improving relationships among those involved on a construction project to the benefit of all. Partnering uses structured procedures involving all project participants to:

- define mutual goals,
- improve communication; and
- develop formal problem solving and dispute resolution strategies.

The immediately obvious common areas are that both are structured, systematic and focus on a workshop as a prime means of facilitation. Furthermore, Partnering is based on the fundamental human value concepts of common sense, trust and commitment, which all practitioners would doubtless see as vital to the success of Value Management.

vi. Vehicle for change

One of the most important aspect of value Management study is to generate as many ideas as possible and the creation of new and innovative methods. Change is an essential aspect in today's and future business success. Due to holistic and participatory approach of Value Management Study the change that is going to be created in any organization will not be much disrupted as the various levels of staff are involved in creating change to be more competitive.

vii. Identifying and Removing Unnecessary Costs

One of the objectives of Value management is to eliminate unnecessary costs without reducing reliability and saleability.

Unnecessary costs are defined as follows :-

- "... costs which do not meaningfully contribute to the product to which they accrue" (Mudge, 1971),
- "... costs which add nothing to the value of a product, or are not essential to achieve the specified functions" (Crum, 1971),
- "... costs which provides neither quality, nor use, no life, no appearance, no customer features" (Miles, 1972).

From the above arguments, there is without doubt that value management has great potentials to be implemented in Malaysia. Public Works Department in collaboration with Higher Learning Institutions may take leading role in promoting this system especially during the present economic situation.

On the other hand eventhough the prospects for the Value Management looks bright here, there are several issues that we have to overcome to ensure its acceptance :

i. "I have no time" Syndrome

Stephen Covey in his book "7 Habits of Highly Effective People" makes an analogy of sharpening the saw to relate to the importance of continous improvements. "Kaizen" that revolves around similar understanding is an important Japanese management concept that partly makes Japan as it is today. Statements such as "I have no time to sharpen my supervisory skills as I am too busy supervising" or "I have no time to sharpen my management skills as I am too busy managing" "I have no time to sharpen my design capability as I am too busy designing" etc. are common phenomenon.

ii. Change of Working Culture

Value Management promotes innovations and changes and this is crucial to survive in this modern world but it is known that how difficult to change habits and present working culture in any organisation.

iii. Management Support

Value Management is unlikely to succeed and prove its significant contributions with the support from the top level management. A lot of effort has to be done to persuade and convince these people and perhaps actively involve in the workshop itself.

iv. Attitudes of the Design Team

When I was involved in running the Value Management workshop in the early 90's, the designers especially were quite reluctant to get involved and skeptical about the benefit of applying Value Management and thought that this was just another cost cutting exercise and merely finding faults to their designs.

Conclusion

It is important to note that Value Management (then called Value Analysis) was first applied in 1947 and progressed to where it is today. Value Management provides a good platform for the members of the design team and stakeholders to discuss and solve the problems in the best possible manner and works best for the construction sector due to the nature of its activities that involve many disciplines and background. As an individual, as a worker, as a manager, no matter what our positions are, we have to be open, pro-active in our attitude to accept new things and value improvements as Miles (1993) once quoted that "habits take us where we were yesterday and attitudes keep us there".

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