



ATTITUDES - A CRITICAL FACTOR IN THE NEW AUSTRALIAN/NEW ZEALAND VALUE MANAGEMENT STANDARD

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"Value Management is a structured systematic analytical process which seeks to achieve value for money by providing all necessary functions at the lowest total cost consistent with required levels of quality and performance". The process may be applied to management decision making at any level of the organisation and specifically may be applied to projects, products, systems, services or processes.

It is generally acknowledged that it was Larry Miles who noticed that alternate products and materials used due to war time shortages during WWII often satisfied the need better and more cheaply than the original chosen material. He and the General Electric company developed these techniques immediately after the war, and were able to consistently obtain substantial cost reductions in existing products using a form of functional analysis to systematically eliminate unnecessary costs, without reducing reliability or saleability.

Subsequent use and development of these techniques by the US Navy in the 1950's and 1960's was called Value Engineering. Later use of the techniques in the wider areas of management, manufacturing, construction and services now tends to use the term Value Management.

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Brian participated in his first formal Value Management Study in 1979, for the Woolworths Distribution Centre at Yennora and has been an avid supporter of Value Management methodologies ever since. Brian is an accredited Value Management practitioner with NSW Public Works and has been a member of the Standards Association Committee OB/6 for the preparation of the Australian/New Zealand Standard on Value Management.



While to my knowledge neither the British nor the US have yet developed a Standard, it is appropriate to acknowledge that the Europeans have been at this for quite some time. The Germans had the first Value Analysis standard out in 1973 with a major overhaul and second edition in 1987. Other countries included Hungary in 1977, Austria and France both in 1984, India 1986 and Poland at a date I cannot determine.

Standards Australia identified a potential need for an Australian standard on Value Management partially driven, in 1989/90 by NSW government and later, other state government requirements for Value Management studies on all significant Capital Works projects.

Major public and private sector organisations however are also adopting the methodologies on a voluntary basis because they see direct benefit to the bottom line.

Why Have A Standard?

A Standard having some official or semi-official status always provides for uniformity of terminology, approach, methodology and outcomes and allows for consistency and comparability between practitioners.

After looking at a lot of potential objectives for the Australian Standard, the foreward acknowledges that "The purpose of this Standard is to provide guidelines to clients and other users for the application of Value Management.

This Standard defines terms, establishes the essential elements necessary to achieve effective Value Management and clarifies roles and responsibilities".

Its important to note that the Standard is **not**:

- a training manual or handbook on VM;



- a listing of all the:
 - personal/professional attributes of a successful VM facilitator,
 - techniques for group interpersonal behaviour
 - creativity and brainstorming techniques
 - decision making and analytical techniques available.

Definitions

The Australian Standard defines Value Management (and Value Engineering and Value Analysis, but then reverts to the term Value Management for the rest of the document) and other terminologies such as the Job Plan, Value Management Study, Value Management Facilitator and Function Analysis.

Applications

The Standard acknowledges that the highest potential benefit from Value Management occurs at the earliest stages in the life of a project. There is nothing magic about this. The earlier the studies are carried out, the potentially higher savings that may be made at a time when incurred costs are still minimal. Early information from the United States is now backed up by the experience of the Australian practitioners that benefit/cost ratios of 50-1 can easily be achieved with VM Studies carried out at the early planning stage, ie. for every dollar of costs incurred in the running of a Value Management Study, \$50 of proven savings can be made. It is important to note that even later in the final design stage, benefit/cost ratios of 10-1 can still be achieved in most cases.

It is also important to note that Value Management Studies can be held early in the project life cycle, to prove the need for the project or for a particular solution to the project. It is now also common practice to hold a second or indeed even a third VM Study during the design phase to look at particular design solutions.

The Standard then identifies many typical applications for Value Management including:



- a) construction,
- b) manufacturing,
- c) systems, services and processes,
- d) management decision making,
- e) Value Management incentive clauses.

Value Management incentive clauses offer financial incentives to contractors by a sharing of the savings generated by the contractor and by contractor-initiated changes to contract specifications, scope of work or methodology.

They provide a formalised method to encourage contractors to suggest contract changes which reduce the overall cost to the owner. The contractor's reward is a share in the resultant savings.

Such changes, which lead to more economical ways of carrying out the work, while still providing the essential functions required by the owner, invariably include the elimination or modification of requirements found in excess of actual needs.

Essential Elements

The Standard acknowledges that to ensure the best possible outcome of a Value Management Study, it is necessary to obtain a correct balance of three essential elements:

- core methodology,
- commitment of the participants, and
- management of the process.

Core Methodology

As in any problem-solving approach, it is necessary to adopt a structured methodology. In VM terminology this is called a Job Plan and in the case of the Australian Standard, follows the approach taken by Larry Miles.



Miles' Job Plan Phases

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

The Job Plan has to be flexible and adaptable so it can be applied over a wide and extensive range of VM topics. It is important however to follow systematically through the phases:

1. **Information phase:** Collecting all relevant information such as customer requirements, specifications, details of any constraints or relevant policy decisions, and the costs involved in a proposed or existing project.
2. **Analysis phase:** Listing significant functions, and, where necessary, determining the cost of each function, or, in some cases, who is now responsible for performing each function. It may also be considered appropriate to develop a FAST (Functional Analysis System Technique) diagram, to determine those functions which are to be subject to more detailed Function Analysis. In other cases, it may be considered preferable for the group/team as a whole to decide which function should be subjected to a more detailed analysis.
3. **Creativity phase:** Using focused lateral thinking processes, list for the selected functions, the numerous alternative ideas or options for performing existing or proposed functions. A large quantity of ideas (and not solutions) should be generated and recorded at this stage without any judgement or criticism.
4. **Judgement phase:** Apply analytical judgement to the lists of ideas or options to select the alternatives which will achieve the necessary function at lowest total cost, consistent with required levels of quality and performance.



Specialists or experts may be called in to assist and deciding the alternatives which will be developed as recommendations.

5. **Development phase:** Consider the problems involved in implementing the developed recommendations, how they can be overcome, recommend action by whom and by when, and, as required, prepare a Value Management report.

The whole success of this methodology requires the study team to:

- have an orientation towards concrete targets,
- be function centred in thinking and working,
- separate the creative from the evaluation phases,
- work in interdisciplinary teams.

It is important that the analysis follows the structure or Job Plan and that the team does not advance into a subsequent phase until the previous phase is completed.

Much of the strength of the methodology comes from the active participation of all the VM team members in a group environment. It is the group interaction that is a key element in the generation of options. The dynamics and synergy possible from a properly motivated study team can be awesome to see in full flight.

Its important to note that the process is "application neutral" i.e. it can be applied to any form of problem solving, especially complex problems not susceptible to algorithmic solutions.

Commitment of Participants

The most successful Value Management Studies come when all the personnel involved help create a suitable climate in which the group concerns are accepted ahead of personal self interests.

To do this, the team and the VM facilitator must promote:



- co-operative behaviour,
- acceptance of unfamiliar approaches and solutions,
- being able to modify individual's behaviour to overcome resistance to change,
- adherence to the Job Plan methodology and time constraints
- the ability the question existing solutions,
- the ability to create a climate fostering creativity and initiative.

Management of The Process

If the results of VM Studies are to be successfully introduced into organisations and projects, the top management should be familiar with Value Management and its methodologies, should be committed to its introduction and should provide the resources and support for its introduction.

In preparation for a Value Management Study, a Value Management brief is prepared, study objectives agreed, suitable team participants selected and an experienced facilitator appointed. Selection of the members of the Value Management team will depend on the subject of the study, with the number of participants typically varying from 4 to 20 and in some cases more than 20. It is necessary that key individuals and participants be familiar with the process, be committed to its implementation and know what to expect from a study. Typical Value Management Studies can vary in duration from 1 to 5 days.

The best Value Management Studies use interdisciplinary skills and expertise across and through existing hierarchical organisational and project structures.

Good management techniques dictate that the brief and objectives be approved by top level executives, that the best available experienced members participate in the study, and that an appropriate action plan be agreed before the conclusion of the study.

The success of the Value Management study does depend largely on the skills and abilities of the facilitator.



Facilitators must have a thorough knowledge of the Value Management process, procedures and techniques and be able to demonstrate competence in:

- group management skills,
- communication skills,
- analytical skills,
- interpretation skills,
- questioning skills,
- lateral thinking skills.

There is no doubt that the success of Value Management Studies depends on the proper interaction of:

- core methodology,
- commitment of participants,
- management of process.

The table overleaf and extracted from the new Standard, shows typical objectives, questions, activities and techniques for each of the Job Plan phases.

Roles and Responsibilities

This section of the Standard identifies the principal roles of the Facilitator and the participants involved in the Value Management Study. It also provides a check list of responsibilities to be assigned as a precursor to the conduct of a Value Management Workshop.

Value Management Standard Outcomes

1. The availability of the new Australian/New Zealand Standard on Value Management will allow clients/consumers to:



VALUE MANAGEMENT : ACTIVITIES AND PROCESSES

PHASE	TYPICAL OBJECTIVES	TYPICAL QUESTIONS	TYPICAL ACTIVITIES/TECHNIQUES
Information	<ul style="list-style-type: none"> Confirm VM objectives Clarify assumptions Provide information base Set scope of study 	<ul style="list-style-type: none"> What is VM purpose? What is rationale? What is timetable? 	<ul style="list-style-type: none"> Presentation Graphics Cost, energy, area models Pre-reading Life cycle costing
Analysis	<ul style="list-style-type: none"> Rationalise data Clarify functions Understand system links Test parameters Select high result functions 	<ul style="list-style-type: none"> What does it do? What does it cost? What must it do? What are performance criteria? What are quality criteria? 	<ul style="list-style-type: none"> Function analysis FAST diagram Function hierarchy Priority matrix
Creativity	<ul style="list-style-type: none"> Generate alternative ideas Gain multi-discipline input Maintain non-judgemental environment Encourage the unconventional 	<ul style="list-style-type: none"> What are the alternatives? What else satisfies function? 	<ul style="list-style-type: none"> Lateral thinking Creative thinking Sub-topic focus Sub-group facilitation
Judgement	<ul style="list-style-type: none"> Assess and cull ideas Promote further options Focus on solutions Target value improvements Promote communications Seek group/team consensus 	<ul style="list-style-type: none"> What do alternatives cost? What alternatives are functional? What ideas link together? Acceptability of options? 	<ul style="list-style-type: none"> Rating/weighting Life cycle costs Multidisciplinary input Group/team interaction Common/corporate sense
Development	<ul style="list-style-type: none"> Refine improvement options Document rationale Present outcomes and recommendations Engender ownership 	<ul style="list-style-type: none"> What are the value improvements? Why change from status quo? What further actions are needed? What decisions required? 	<ul style="list-style-type: none"> Cogent report and executive summary Clear action resolution Co-ordinate actions Action plan and follow up



- describe an approach and methodology that will make it easier for them to commission VM Studies;
 - describe an approach and methodology that will stop clients and VM Facilitators prostituting the Value Management process.
2. The Standard will provide creditable educational assistance to clients as to what the Value Management process is all about.
 3. The Standard provides a basis for future training manuals by identifying the key steps and elements within the Value Management process.

In this respect Eric Adams' text on Value Management is a good start. It may be that the Australian Institute of Value Management or some of its eminent members may develop training manuals and guides for use by industry.

4. The Standard provides a basis for assessing the success of the Value Management process, provides a basis for post-study audits as to whether the methodology was correct, whether the commitment was in place and whether the management of the process was all that it should have been.
5. The Standard provides a basis for assessing the success of Value Management Facilitators by clients for their own purposes, by The Australian Institute of Value Management for grading of the facilitators or by government bodies for the accreditation of appropriate and experienced facilitators.

Ladies and Gentlemen, I commend the Standard, and appropriate attitudes, to you.