A UNIVERSAL MODEL FOR PROMOTING VALUE MANAGEMENT

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Abstract

Value Analysis, Value Engineering, Value Management, Hard VM, Soft VM – what exactly is this process? Explaining to the uninitiated is not always easy and can lead to confusion at best. Even those who participate in a successful value management workshop walk away with an impression that the process has been defined by what they have just experienced. Another day, another focus and another facilitator is likely to mean the process is somewhat different.

Defining Value Management so that it can be packaged and promoted as a superior problem solving process may be difficult, especially in competition with reproducible 'flavour of the month' management techniques such as TQM, Six Sigma, MBO, and similar sounding VAM or 'Overhead Value Management'. But Value Management has continued to deliver results in an ever-increasing range of applications for more than 60 years whereas many of these other techniques burst onto the scene, flourish for a while then become subjects of academic interest only.

This paper aligns the value management process with the revised Australian Standard, due for release in mid 2005. It develops a simple model of the VM process that it can be promoted and marketed to a range of potential users.

1.0 Introduction

There are many ways in which a Value Management study may be undertaken but certain procedures are fundamental to the methodology. The set of procedures is commonly referred to as the Value Management Job Plan.

It is possible to phase the process over several days or even weeks and also possible to hold studies at various stages of the project.

This need for flexibility is acknowledged and reflected in the Australian and New Zealand Standard for Value Management AS/NZS 4183:1994.

Value Management methodology involves each of the following phases being considered in a structured, systematic format:

- Information Phase – Project scope and appreciation of background information.

- Analysis Phase – Assessment of functions, activities and structure to develop understanding of the issues.

- Creativity Phase - Generation of alternative ideas for providing functions

- Judgement Phase - Selection of certain ideas for further consideration and evaluation.

- Development Phase - Alternative value improvement proposals that lead to a presentation of best value proposals in a report and implementation.
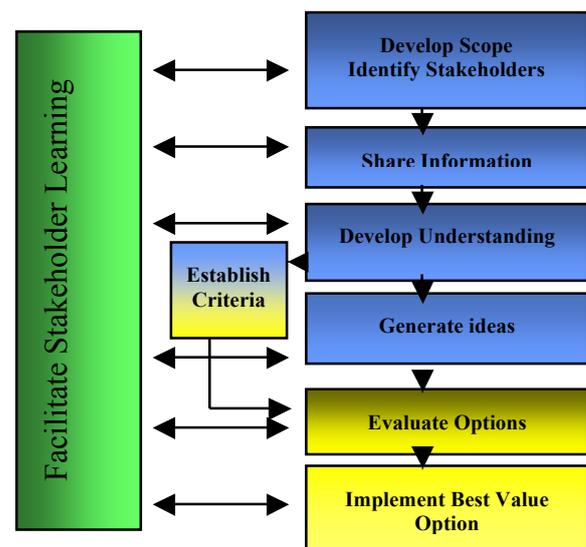

Fig 1: Australian Standard AS4183: 2005

Figure 1 is a simple representation of some of the concepts in the draft revised Australian Standard for Value Management[3], which expands on the Job Plan using functional outcomes to define the phases.

2.0   A Model for Value Management

The value management community needs a simple model that encapsulates the VM Job Plan and the various standards around the world. The Quality Movement was united behind the "Plan, Do, Check, Act" Cycle.

Figure 2 presents a model for promoting Value Management[2] as a consistent set of phases held together by a facilitation process.
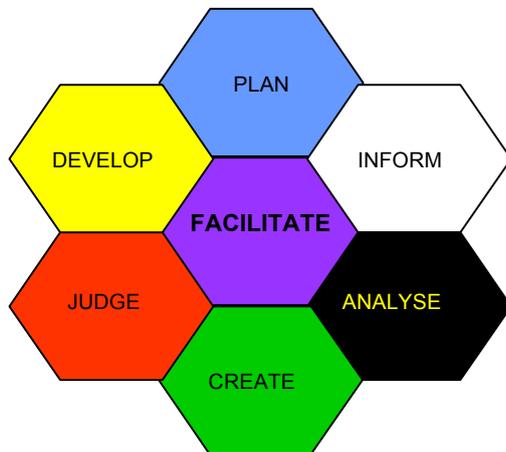

Figure 2: Proposed VM Model

The alignment with the Australian Standard is as follows:

- Pre-Workshop Phase (PLAN)
- Share Information Phase (INFORM)
- Develop Understanding Phase (ANALYSE)
- Develop Ideas Phase (CREATE)
- Evaluate Options Phase (JUDGE)
- Develop and Implement Recommendations Phase (DEVELOP)
- Facilitate Stakeholder Learning (FACILITATE)

Every value management study will go through these phases. However the facilitator may choose different tools and techniques within each phase, depending on the study focus, the level of stakeholder knowledge, time available, the number of participants and a range of other factors. Some of the activities that one might expect to find in each phase are explained below.

3.0   PLAN - The Pre-Workshop Phase

3.1   Determine Scope of Study

Critical to the success of any value management study is having the right people addressing the right problem at the right time. It is therefore essential that client sponsors of the study meet to review the scope. They must ensure that the scope is not too narrow that it restricts the opportunities for major breakthrough improvements, eg a focus on reducing the capital cost of construction compared with optimising service delivery.

3.2   Identify Stakeholders

Equally important is getting all the key stakeholders involved. A preliminary analysis of the issues likely to arise will assist in identifying those persons who can contribute information, analysis/technical skills or who need to be included as any changes will affect them or their processes. From this analysis the team to participate in the study is chosen. This is dealt with in more detail in the section "Facilitate Stakeholder Learning".

3.3   Plan Workshop Agenda

The faciltiator will then develop an agenda for the workshop. This agenda should include all phases of the VM process but the tools used may vary depending on the focus of the study, the team composition and size and the time available.

3.4   Brief Team Members

Before the workshop, team members should be briefed on the task and their expected role. Some participants may be requested to present background or technical information that needs to be prepared and possibly researched. This briefing may take the form of a formal meeting with the faciltator and sponsors or could form part of a pre-workshop information package sent out in advance.

3.5   Gather Information

The amount of information sent out in advance of a workshop will depend on the existing knowledge of the participants about the subject of the study. Some pre-reading to set the scene and get participants thinking is good but if there is too much information, it is unlikely to be read. Sometimes questionnaires can be used effectively to focus participants on key issues and prepare them for discussions during the workshop.

3.6   Organise venue, catering, etc

Finally, an effective value management workshop requires a suitable venue that allows

team members space to interact. Room layout should cater for easy break out into smaller groups for discussions. Ideally the venue should be located away from normal workplaces so that effort can be focussed on the workshop. Audio visual equipment and other workshop materials needs should be planned and ordered ready for use.

4.0 INFORM - The Share Information Phase

The first and undoubtedly the most important stage of development of any process is the foundation upon which it is developed. In the total time span for the study the information phase typically occupies the greatest time and will go through much iteration in the total process and require the greatest effort.

4.1 Review Scope & Objectives

The objective of a system or project needs to be tested. Modern project management identifies that the key to a project is the clear identification of scope whereby objectives are clarified, constraints are identified and a broad strategy is developed. The situation analysis is designed to establish from the group or team conducting the review the actual problems, and in many cases, the opportunity that the project team is facing.

4.2 Present Background Information (Project and System Overview)

The establishment of where the project/system has come from will assist in understanding of the rationale behind a project at a point in time.

This phase of the Information segment is best provided by the Sponsor of the study and will further assist in development of the creative platform.

The overview can best be described as providing the system view of the project and how the project under review fits into a wider picture.

4.3 Present Cost Information

Equally important is having the best current cost estimates available not only for capital costs but also other life cycle costs.

4.4 Visit Site

Often a team will include a site visit in their study program as the physical dimensions and surrounding environment assist in building understanding of the issues.

4.5 Test Assumptions

Critical to the success of any analysis is the determination of what is assumed by the various participants in a process. As projects evolve through their life cycle particularly in the embryonic or concept phase stakeholders and professionals from many persuasions will accumulate their own perception of a project, their own paradigm or lens through which they view the world.

The assumption phase looks for exactly what it is assumptions and not answers or judgement. The establishment of the actual position the project/system is at a given point in time provides the platform for moving forward. The establishment of what is 'given' provides the envelope for exploration during a VM study.

4.6 Challenge Current Thinking

This is reflected in what is known as the constructive overlap where individuals are encouraged to go beyond their normal perspective to challenge the current proposals, boundaries, dominant thinking and constraints, and question their own and others' ideas. It is critical that all members of the group are given opportunity to participate within the environment of constructive discontent.

5.0 ANALYSE - The Develop Understanding Phase

The principal objective of the Analysis Phase of the Value Study Workshop is to establish collective understanding of the data, assumptions and function of the system.

5.1 Identify Functions

At the core of Value Management is function analysis. A project, system or strategy can be analysed by identifying all of its functions and performance criteria, against which resources and cost can be ascribed.

Functions can also be represented in hierarchies to allow a better understanding and appreciation of the purpose of a system, project or strategy and of the relationship between functions at different hierarchical levels.

The greater insight to the overall purpose and specific functions of the system under review affords a better prospect of developing improved solutions by solving real problems and meeting the real needs.

The primary objectives of Functional Analysis are to identify the basic functions and reveal alternative means of achieving the objective.

It should always be remembered that the process of functional analysis is not an end in itself but is simply a vehicle by which we identify areas of potential value improvement.

5.2 Cost Functions

Having identified the functions using functional analysis, it is now necessary to assign costs to each function. What is the total cost of carrying out a function?

Where appropriate, life cycle costing is adopted to ensure a balance between capital and operating costs is maintained in any solution. Discounted cash flow is used to allow comparison of solutions with different capital and operating expenses over their life cycle.

Once the functions have been costed, a cost histogram of the functions is developed which highlights high cost areas. It should be noted that functional costing presents a different picture of a project's costs to that presented by traditional costing and cost models. This alternative perspective often raises issues that need to be investigated.

5.3 Identify Outcomes

This stage involves the development of a set of criteria against which we will test the options. We are seeking to find and prioritise the factors that will allow us to differentiate between options.

The evaluation team should list all the outcomes that the various stakeholders would expect in a solution. From this list, the mandatory requirements are separated by asking the question: "What MUST the option achieve or deliver?"

5.4 Value Outcomes

The remaining project outcomes / features are desirable criteria and should be weighted in importance to allow differentiation of options which satisfy the mandatory criteria.

5.5 Identify Concerns

The establishment of this area within a VM study identifies key concerns and issues that become apparent during the study.

5.6 Analyse Trends

Another activity that assists in developing understanding is analysing trends – What happened in the past? What happens now? What is likely to happen in the future?

6.0 CREATE - The Develop Ideas Phase

Value Management provides a structured forum for stimulating and harnessing the creativity of stakeholders. It emphasises team rather than isolated individual creativity by mixing the multi-disciplinary skills and experience of the study participants.

6.1 Generate ideas

Various techniques are used to harness creativity in the group format. Brainstorming, for example, plays an important part in the VM workshop process. This is the time within the problem solving process when divergent thinking is necessary, when it is incumbent on members to produce a volume of diverse ideas.

Other de Bono techniques can be used to expand an initial set of ideas and make groups think outside the square.

6.2 Harvest creativity outcomes

When we use creative thinking, we often put forth a lot of effort but then only take about 20 percent of the output. Harvesting means asking, 'What is our output?" and then taking as much as possible from our thinking.

After ideas have been harvested, they need treatment. Treatment means asking, 'What are we going to do with the output we have harvested?" It is possible that the creative effort has produced a specific idea that is both valuable and practical. If so, we can move directly to assessment. The idea will take its place alongside the other ways of dealing with the matter. Usually, however, the output needs further treatment.

6.3 Interview Specialists

A specialist may be invited to a workshop to be interviewed by a team at a stage when they have built a foundation of knowledge and can structure questions to explore specific gaps in their knowledge, thus extracting maximum value from the specialist's time. The specialised knowledge often provides additional ideas or support for concepts being explored.

6.4 Research new technologies

Taking advantage of new technologies is critical in developing innovative solutions. What might previously have been unachievable could now be possible due to

advances in technology. Research must however be carried out to ensure that the technology has reached a level of maturity and reliability that matches the process outcomes.

6.5 Improve ideas

Having created as many ideas as possible to improve the system the group evaluates them.

Those considered to be worthy of pursuit are assessed in more detail by either the Team as a whole or by sub-groups to maximise the quality of each member's contribution. Where necessary supplementary information may be sought to improve the ideas. As discussed in harvesting of ideas, ideas can be improved or made relevant through further treatment and shaping to fit the current situation.

6.6 Develop options

The output of a creativity session may be an option preferred by the Team as its solution to the system. Alternatively, it is better to develop a few or several options to be subject to detailed appraisal before a final decision is made.

7.0 JUDGE - The Evaluate Options Phase

The principal objective of the Evaluate Options Phase of the Value Study Workshop is to 'apply analytical judgement to select alternatives which will satisfy the system's functions and performance criteria.'

7.1 SWOT Options

Systematically evaluating each alternative and analysing its advantages and disadvantages before making a final decision are the most important factors in effective decision making. The more explicit the systematic evaluation, the less likely that an alternative will be overlooked or rationalised away.

7.2 Estimate costs

The first screening of options is done against the mandatory requirements. This is a "Go - No Go" test with those options failing to satisfy any of the criteria, being set aside.

This means that unless an option is able to meet some minimum level of compliance with a particular criterion, it will not be accepted.

7.3 Compare performance

However, once this is satisfied, there may an opportunity for further differentiation by rating options against the same criteria but, in their ability to deliver enhanced value over and above the minimum level.

Options are then rated against these and other of the weighted desirable criteria. Reasons for awarding scores should be progressively documented.

7.4 Evaluate risks

Before proceeding with acceptance of any option, a brief risk assessment should be carried out. For each of the top 2 or 3 highest scoring alternatives, the team should evaluate what could go wrong. A starting point might be criteria where the option did not score very well.

Review the preliminary choice from the decision analysis if the risk is considered too high.

7.5 Identify best value option

The highest scoring option is then considered the 'best value choice'. Another technique that is quite powerful is to consider the cost of alternatives separately from the value criteria. The value scores for each alternative are then divided by the "apples with apples" cost to determine the relative "value for money" for each alternative. Once again the highest score is considered the best value for money choice

8.0 DEVELOP - Develop and Implement Recommendations Phase

The principal objective of the Development Phase of the Value Study Workshop is to develop, refine and select options and then document and report on the outcomes of the Value Study with actions required enabling implementation.

8.1 Enhance Best Value Option

In this final phase of the Workshop the team focuses its efforts on developing refined improvement options and rationale for them. This phase is likely to continue after the workshop, especially in situations where further investigation or information is required before a final decision or recommendation can be made.

Their decisions and recommendations are confirmed against the study and project/system objectives for consistency and relevance.

8.2 Assess Implementation Risks

A preliminary implementation plan is developed for the preferred option. The risks

of achieving each step in this plan are then assessed and mitigation strategies integrated into the plan.

8.3 Present Recommendations

Often teams are asked to present their findings to an audience of peers and decision-makers. This is a powerful way to test the team commitment to, and the practicality of the recommendations. A well-prepared presentation and a united response to questions will greatly assist acceptance of the recommendations.

8.4 Document Study

The value study report is an important record of what was considered during the study, and provides a decision path to the final recommendations. For any project, this report should become an important planning document available to project managers.

8.5 Manage Actions

An Action Plan is created and responsibilities and deadlines agreed. These actions represent those tasks, agreed by the participants, as being necessary to progress the project's / system's implementation.

8.6 Implement Project

The involvement of project staff in a value management study provides them with, not only a thorough knowledge of the underlying concepts on which the project is based but also an established communication link with all key stakeholders. Both these aspects are immensely beneficial to the successful delivery of the project but difficult to measure.

9.0 FACILITATE - Facilitate Stakeholder Learning

Engaging all key stakeholders so that they get a genuine understanding of the problem and an appreciation and ownership of the recommended strategy is the core of the value management process.

9.1 Plan Stakeholder Engagement

What distinguishes Value Management from other problem solving processes is the high acceptance and successful implementation of recommendations. This is achieved not only by the rigorous analysis but also by the careful planning of how stakeholders are engaged. Success depends on getting ownership of outcomes and the progressive marketing of those outcomes to the decision-makers. The

total value management process is designed to educate stakeholders and through this better understanding, progress the recommendations.

All stakeholders identified in the pre-workshop phase do not necessarily need to be team members for the workshop. A stakeholder or industry expert who can provide specific information pertaining to only part of the subject being studied may be interviewed by the team to develop understanding. Senior Managers may become involved as sponsors of studies and by acting as sounding boards at various stages during the study. Others affected by the recommendations can be invited to presentations by the team, where they can question the team and influence the final recommendation. There are several ways to involve all stakeholders without having to have them all at the workshop.

9.2 Manage Process

An organisation initiating a value management study must be prepared to manage the process from pre-workshop through to implementation, as the workshop is only a part of the process. Engaging a facilitator to run the workshop section of the study is relatively straightforward. Scheduling the workshop and other meetings to get the right people there requires organisation and persistence. A critical element is management support in making attendance of staff a priority. Post workshop, an individual should be given responsibility for implementation. Nominating a team leader or responsible officer from the start of the process is one way of ensuring ownership and a will to follow through. This officer would give any presentations, finalise reports and chase up team member tasks. Without this 'project management', excellent workshop outcomes may never be achieved.

9.3 Facilitate Workshop

Team members provide the content knowledge but the workshop requires a facilitator to direct the process and ensure all attendees participate and share their knowledge about the subject of the study. It is the facilitator's role to guide the team through the various stages of the value management process to deliver a set of recommendations, to which all the team are committed and have ownership. The facilitator should be independent of the focus of the study so that he/she concentrates on the group dynamics rather than the content. Eric Adam[1]

wrote about a facilitator being able to *"quickly gain the respect of the team members, and must be someone who has the ability to generate enthusiasm. A value management team will not achieve maximum result unless the members become enthusiastic and think positively. Whether or not they achieve this will depend largely on the ability of the facilitator"*. The Institute of Value Management Australia has a set of training and accreditation criteria that must be satisfied before a facilitator can be registered.

9.4 Integrate Specialists

Involving a specialist adviser in a value management workshop is an ideal way to utilise their expertise. The information sharing and create understanding phases provide a comprehensive brief about the problem and the background circumstances, bringing the specialist rapidly up to speed in a dynamic environment where ideas are being freely exchanged. The specialist is therefore able to tailor his / her advice and or ideas to fit the particular circumstances and to be interrogated first hand by other team members about other possibilities. The use of an external specialist or 'wildcard' in the team stops teams from becoming too insular in their deliberations.

9.6 Access Decision Makers

Getting access to decision makers is critical in maintaining the momentum that can be built up during a value management study. Access might be in the form of an agreed process to progress the study report so that it receives timely executive attention or it may be the opportunity to present findings directly to the executive team. During the series of design review studies for Stanwell Power Station, the teams were greatly encouraged (and challenged) by having the executive management team attend all their presentations of findings. The team's ability to answer questions at this session provided the decision makers with a good indication about the rigour of the analysis and the practicality of the recommendations and certainly assisted in getting approvals for the formal report.

9.7 Recognise Success

Finally, organisations must be prepared to recognise the success when a team delivers a good outcome. This not only encourages those involved, it also assists in developing the credibility of the process, which in turn makes

it easier to get the right staff released to participate in future studies. Recognition can range from a simple thank you to an article in the corporate newsletter to a celebratory dinner.

10 CONCLUSION

The model presented is simple to understand and removes the confusion often associated with value management. The adoption of a universal model is critical for the ongoing promotion and marketing of value management to new audiences.

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