

# VALUE MANAGING PROJECTS TO DELIVER STAKEHOLDER VALUE

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More and more, projects fail to deliver outcomes acceptable to all stakeholders. Projects can no longer be judged on economic benefit alone. Investors are realizing that projects must deliver “Triple Bottom Line” outcomes and stakeholder management has become just as important as “cost, quality and time”.

Partnering arrangements have helped to improve communications and avoid conflicts between client and contractors. But how is the increasing number of other stakeholders being managed? Many of these stakeholders have the power to derail the project if not engaged constructively at the right time.

Value management techniques have been around for almost 60 years. Early applications concentrated mainly on cost reduction to deliver the essential functions. These same techniques, practiced by skilled group facilitators can assist project managers and their clients to develop project briefs, review designs and manage project risks in consultation with key stakeholders. The rigorous structured process of value management ensures balanced value for money outcomes.

## 1. Background

No longer can a successful project be defined purely by the achievement of target time, cost and quality. Satisfaction of a wider set of stakeholder needs is becoming a more relevant barometer of success or failure. Barton (1995) concluded that project managers face substantial challenges in satisfying these needs and expectations especially with complex construction projects where *“Clients seek investment assurance, predictability of outcomes, value for money as well as participation in the overall planning and procurement process. Users seek more consultation during planning phase. Community groups demand more consultation and participation especially in public sector infrastructure projects. Design consultants seek a clear brief and ways to minimize or eliminate rework and the global community expects ecological sustainability to become a primary consideration.”* Dallas (2002) examined the causes of project failures and found that it is usually possible to group these causes into three main categories:

- Poor understanding of the value drivers for stakeholders
- Poor stakeholder management, and
- Uncertainties and unpredictables that exist at the start of any project

Project managers are now well versed in managing the risks associated with this third category but it is the first two that can often cause the most grief.

Critical to the successful delivery of a project is a clear project brief and a clear understanding of the project objectives from all perspectives. Barton (2002) defines the challenge for project managers as *‘to capture, from a pluralistic, stakeholder perspective, core values that will drive planning, design and construction of projects’*.

## **2. The Evolution of Value Management**

The Queensland Power Industry provides a good example of the traditional use of Value Engineering / Value Management, using teams of planning, design and operational staff to critically review and challenge traditional designs. Through the mid 1980s and early 1990s more than \$200 Million had been saved on the 1400 megawatt Stanwell Power Station, the strategy for the half-life refit of Gladstone Power Station had been developed by a series of value management studies and power lines had been designed to minimise impact on sensitive environmental areas.

These studies had been carried out in the planning and design review stages of each project and had largely involved a single final decision maker even though a number of external stakeholders were involved. In most cases, these studies had been conducted in a single multi-day workshop with participants taken off line for the duration of the study. These studies were mainly process-driven with minimal intervention from the facilitator. Early facilitators in America often worked teams through a series of worksheets.

The current situation has somewhat changed. There are generally more than one and sometimes several key stakeholders with commercial and broader interests. The range of stakeholders involved makes longer workshops unviable and cost reduction is no longer the main driver. Baguley (1992) advocated the inclusion of a formal value management study as part of the project concept development to get maximum value and reduced resistance to change. Value Management is now a much more flexible process and a valuable tool for managers in all levels of organisations. Dawson (2002) has examined the evolution of the application of value management. He has identified five stages, which he has designated:

1. From process to people
2. From curative to preventative
3. The wider application of value management
4. From a single workshop to a series of workshops
5. From technical participants to executive participants

## **3. Using Value Management for Infrastructure Projects**

Ensuring value for money solutions for all modern projects requires focused input from a range of stakeholders. It does not just involve the installation of a standard technical solution or 'state of the art' process. To configure a 'best fit' solution, a design team can provide extensive technical expertise but they also require the best available information about the following to allow them to optimise the process:

- Current operations
- Expected market growth and investor expectations
- Environmental constraints and considerations
- Local site and environs issues
- Policy constraints

Our experience with other processes has shown that the use of a value management study as an integral part of the design development process is the most effective way to gather this information. Not only does the value management process assist in optimising the design, it

also resolves conflicting expectations and ensures stakeholder commitment to the proposed solution.

Value Management is process that provides structure and techniques to allow a group of stakeholders to critically review projects and ensure that value for money is obtained in delivery of functional requirements. A prime focus in conducting Value Management studies is to gain the commitment of stakeholders to the recommendations of the workshop. This ownership makes the delivery of the project and sign off of agreed deliverables much less torturous.

Yeomans (2002) believes that, even though there is still an emphasis on reducing costs, there is a growing recognition of the other benefits of the process itself. *"..in a nutshell, VM improves communication by having all players "singing from the same song sheet" as an outcome of the Information Stage and the inclusive nature of the process enabling true, deeper and shared understanding. It saves time (contrary to the detractor view) by both identifying opportunities to reduce time schedules and achieving in a one or two-day workshop what might takes months under the usual way of doing things. It enables a framework for a brief to be established in a very short period of time capturing the best information collectively available thus enabling all concerned to "get it right first time". It inherently promotes a sense of ownership of ideas and outcomes and a realisation that each participant was part of something bigger than themselves. It generates genuine teamwork rather than an aggregate of well-intentioned and qualified individuals operating in a professional vacuum. It enables quality and performance expectations to be clearly defined and enhanced or balanced within a best value context. And it has the potential to deliver triple-bottom-line outcomes, possibly like no other process."*

#### **4. Addressing Project Management Risks with Value Management**

Value management workshops are now seldom conducted in one long multi-day session. The best results are achieved by conducting shorter workshops at various stages in a project to address specific risks and to deliver progressive value. Some projects only need a review at one stage or the benefit of additional reviews is not recognised.

##### **4.1 Lack of clarity and understanding of client brief leading to scope creep.**

This is best addressed by a concept value management study initiated by the client and involving key internal and external stakeholders. This workshop (usually 2 days) reviews and challenges all the information about the project, identifies clearly what the project outcomes should be and examines ways these outcomes might be achieved. It is critical to have the involvement of third party stakeholders early in the process to assisting in defining the outcomes and expectations. Outcomes of such a workshop might be an operational solution that avoids capital expenditure, a clear brief for a capital solution or a range of possible solutions that need further development before making a final decision. Some organisations have been most innovative by including some preferred supplier consultants in this workshop and then sending them away to develop options based on the brief from the workshop. This avoids the time and effort involved in writing a comprehensive design brief and generates competition between providers to deliver cost effective and innovative solutions.

#### **4.2 Not getting commitment of all stakeholders leading to delays in approvals, scope creep and waste of time.**

This workshop (usually 1 day) is used to review the design concept before getting final client approval to go to tender or another procurement process. This workshop could be the follow up stage to a Concept VM Study where planners or designers were sent away to develop and cost options. This workshop would normally test planning assumptions, present technical options considered and evaluate options against the agreed criteria to select best value option to proceed forward with. Once again it is critical to involve representatives from key stakeholders to ensure understanding and commitment to the proposed direction. This avoids issues being raised by these stakeholders later in the project life that might cause approval delays, scope variations or time spent in investigating and reporting on spurious issues. Organisations such as Brisbane Water have used this approach to assure management that the proposed solution has been rigorously reviewed and signed off by key decision-makers. Participation in a workshop at this stage is an excellent introduction to a project for newly appointed key project team members.

#### **4.3 Sub-optimal technical design or some options not considered leading to higher life cycle costs.**

The timing and initiator of this more traditional value management (or engineering) workshop depends on the procurement process. For construct to specified design type contracts, the review may take place as part of the specification development process and prior to request for tenders. Two or three days (in single or split sessions) are usually required for such a review but would be shorter if it was a continuation of a series of reviews. The workshop participants would normally include an independent technical specialist to challenge technology and operational end users to ensure long term “operability” and “maintainability”. Getting “constructability” assurance can be achieved by including in-house or consulting construction staff on team or better still, conduct the review after the award of the construction tender and include actual construction team members. This would normally require some contractual condition requiring participation and having some pre-agreed means of managing changes in scope and cost, eg incentives for shared savings. Some construction organisations recognise scope for savings from specification and offer shared savings as an incentive if they are awarded the contract and the client is prepared to participate in a structured value management review.

In a design and construct type contract, the value management design review may be specified as part of service or may be offered by some contractors to ensure full understanding of client expectations before embarking on design process. For complex projects, especially those that interface with existing operational plant, a series of small reviews could be conducted for each section of design. Queensland Alumina used such an approach with interfacing the materials handling systems for its new Calciner Plant. Operational sign-off for not only the design but also the proposed plant “cut in” was critical to project success.

#### **4.4 Cost over-runs or target costs not able to be achieved.**

Using value management only when cost over-runs occur or when target costs can not be achieved is not ideal but it can provide a useful tool to consider options for cost reduction. If the project is well under way with design and even procurement commitments made,

then opportunities may be limited. However in project delivery processes that include alliances or partnering where mechanisms have been set up to share in the pain or gain, value management has a definite role to assist in bringing project target costs down through rigorous and honest review by project partners. Matthew Locke (2002) explores the application of value management to long term collaborative agreements. He believes that value management is “*a catalyst that not only enables partners in the agreement to change their culture, it helps to develop a common understanding of the situation and facilitates the development of innovative solutions*” that have delivered major savings in capital, operational and maintenance expenditure.

#### **4.5 Not learning from mistakes or failing to document lessons learnt for future reference.**

Using a structured value management workshop to document “lessons learnt” and quality of “as built” outcomes is an effective way to conduct a post occupancy review. A half or one day workshop is an efficient way to collect feedback from all stakeholders.

### **5. Community Involvement**

My colleagues in Tasmania have used the structured value management workshop to ensure effective consultation with the community for major infrastructure projects. Mayor Carmel Torenus (2002) who partook in one of these studies defined the approach as follows: “*A Value Management Study is a formal consideration of community and other stakeholder requirements in terms of technical, economic and environmental attributes that may be affected or that may be incorporated into an activity or other development.*”

Many attempt this task by way of one-on-one interviews or even by sending out questionnaires to stakeholders. Other public consultation processes are predominantly information sessions where the community is progressively informed and concerns are collected in feedback sessions. But these approaches fall far short of what is required when dealing with complex public sector infrastructure projects such as hospitals, courthouses, bridges or roads. What is needed in such cases is direct interface of the various stakeholders, in a forum where they can work together and, vitally importantly, learn from each other. Value management allows the community participants to contribute more constructively and generate real commitment to the outcomes.

### **6. Achieving Sustainable Outcomes**

The author has facilitated a number of pre-feasibility studies to justify investment in projects that deliver demonstrable environmental improvement. One of these projects, a sugar mill has now progressed to the construction of a \$50 Million co-generation plant. The plant will export ‘green power’ all year round, will utilise recycled sewage effluent in the process and provide a solution for waste disposal while providing the opportunity for extending the sugar-crushing season to take advantage of local conditions. Stanwell Corporation and Rocky Point Sugar Mill owners, the Heck Group, are jointly developing the project.

Refer Stanwell Corporation’s web site [www.elementalpower.com](http://www.elementalpower.com) for details of project.

Prior to this study, Rocky Point Sugar Mill at Woongoolba near Beenleigh in South East Queensland had a number of bagasse-fired boilers providing steam to a small turbo-alternator

(2.4 MW), to plant drives, the sugar production process and an ethanol plant. Power used in the process was supplied from the turbo-alternator and purchased from the grid. The internal power was only available during the 20 to 22 week annual crushing season.

The team challenged the need to restrict energy production to only the sugar-crushing season when bagasse was available. The boilers in a sugar mill are capable of being fired with a number of biomass fuel sources – biomass refers to an energy source that is naturally self-sustaining. The prime alternative biomass source was identified as the green waste produced in Queensland's southeast corner and normally transferred to land fill or burnt. The most economic plant arrangement was the installation of 30 MW turbo-alternator and boiler that is sufficient to supply the electrical and steam needs of Rocky Point Sugar Mill and distillery and export 'green energy' equivalent to the annual usage of more than 18 000 average homes. This project will displace sufficient coal-fired generation to reduce overall carbon dioxide emissions by about 130 000 tonnes per year.

In terms of total energy generated per annum, this progressive new biomass industry is one of the largest biomass projects in Australia and will give a new lease on life to the sugar farms in the Woongoolba area and ensure the survival of the Rocky Point Sugar Mill for at least another 20 years.

About 100 jobs will be created during the 21-month construction period. Permanent jobs will also be created, including fuel supply contractor personnel when the plant is operational.

Wood Mulching Industries (WMI), a Queensland-owned company based at Cannon Hill, will determine the most suitable blends of biomass to use in Rocky Point's boilers. They will coordinate supply of all the project's non-bagasse fuel requirements.

The problem of a glut of biomass at Council refuse dumps and landfills throughout the region will be solved for a many years by the commissioning of the Rocky Point Project.

The condenser is cooled by tertiary treated water from the Gold Coast City Council's reclaimed water. This same reclaimed water is purified in the cogeneration plant's de-mineralised water plant for use in the boiler-steam turbine water cycle.

Ash, which forms from non-combustible material such as dirt, is left over after burning biomass in a boiler. This will be removed from the site on trucks to be used as a soil conditioner in landscaping work. The wastewater from the boiler and from the condenser cooling system is passed through wastewater treatment ponds and then used to water the crops for the local cane farms.

This project and other similar projects with sugar and paper mills are demonstrating that a commercially viable project can also deliver significant environmental and social benefits to both the local and global community.

To achieve this 'triple bottom outcome' required a structured process to enable the incubation and acceptance of new ideas that challenged conventional thinking and the courage of the developers to fund such projects. Value Management conducted by an independent facilitator provided this structure and was critical to the success of this and several other studies involving multiple stakeholders at the pre-feasibility stage.

## **7. Integrating technology to harness Value Management**

A critical element to the success of value management studies is involving the right people. To overlook an end-user or other key stakeholder could negate all benefits of the study. This in turn becomes a criticism of the VM process in that getting all key stakeholders together for a workshop is both expensive and difficult (in terms of availability). This has resulted in VM workshops being shortened with a resultant loss of effectiveness.

Having all participants together in same room is without doubt the most effective way but there are now advances in Internet and web technology with tools that enable same time but different place meetings to be effectively conducted. Already many of these tools are being used in project management to effectively manage information and communications. C.K. Lau and David K.C. Yau (2002) used a value management study to develop an interactive project management system to manage their company's construction projects using web communications.

The meeting system "IdeaFocus", used by the author to facilitate and document all his workshops, allows remote participation in workshop activities by stakeholders unable to attend the meeting. The software allows the remote participant to see all outputs being captured electronically in the workshop and to contribute in real time to the discussion, ideas generation or decision making. This real time collaboration using eMeetings will make value management workshops more effective through better representation. Pre- and post workshop participation will also be more effectively managed.

## **8. CONCLUSION**

In summary, value managing projects to deliver stakeholder value consists of a series of VM workshops throughout the lifecycle of a project. Depending on the project and the situation, these workshops should be considered either individually or in concert as a valuable methodology for use by project managers to deliver maximum value to all stakeholders.

The maximum benefit is however, achieved by the client utilising the process in the concept development phase. By convening a program of structured workshops during the development phase of the project, the project team can set off with a thorough, common understanding of the project and its priorities. They will gain clear insight of what drives value, who are the key stakeholders in the project and develop robust strategies for managing risk. Value management can be used most effectively to add rigour and structure to community consultation exercises where public support is critical to project success. These workshops will ensure that the foundations for effective project management are in place.

Further value can be gained through use of traditional value management reviews of designs to ensure the technical solution best fits the desired outcomes and reinforces end user, construction and investor commitment to the chosen solution. The use of value management to develop strategies to overcome project difficulties and cost over-runs is yet another traditional use. Agreed pain / gain sharing arrangements make alliance partnerships a fertile ground for innovative use of value management to optimise projects.

Logically a structured workshop approach to the post occupancy review is likely to save time and produce balanced responses from all stakeholders.

Finally, advances in web technology and meeting software will provide further opportunities for more effective use of value management in projects.

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