

**THE DIVERSE APPLICATION OF VALUE MANAGEMENT
IN A LARGE ORGANISATION**

by

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Synopsis

Mr Filby will share with you some of the SEC's experience with Value Engineering/Value Management and to highlight some of the key lessons learnt. The opportunity will also be taken to indicate where VM is going in the SEC.

HISTORY

In the early 1980's the SEC had started site construction of the Loy Yang Power Station. This project, which was one of the largest capital works projects in Australia, consisted of a brown coal open cut mine and associated dredgers, conveyers and equipment, together with two power stations; Loy Yang A and Loy Yang B. In these early years, the Loy Yang A Power Station was in its late design stage/early construction whereas Loy Yang B was still in its infancy.

The SEC's earliest application of the VM techniques was largely centred around the 60 or so engineering systems associated with this project. As you can imagine attempts at improving the value for the LYA project were hampered by its well progressed stage of design. However, this did not stop us making substantial savings. These constraints were less applicable on the sister station Loy Yang B, where the Value Engineering approach has resulted in savings in excess of \$200m (1990).

For example a VE review of the boiler and structural framework for Loy Yang B resulted in a reduction of gallery areas of 20%; a lowering of the feeder floor by 15 metres; modular construction and an overall reduction in steelwork of 3500T when compared with LYA. This study resulted in savings of around \$30m.

Changes to the LYB auxiliary fuel system which, prior to the study was a complex system involving numerous backups, resulted in a more simple arrangement and saved in excess of \$10m.

These earlier engineering studies resulted in average savings of 50 times their cost and helped to show the Commission how cost-effective VM is. It also showed the impact VM has on attitudes in a large organisation.

In more recent times the VM JOB PLAN has been applied to numerous management systems and organisational structure reviews. Indeed it is difficult to envisage a topic that the VM techniques cannot be applied to.

A fundamental yardstick that I often use to determine whether VM would work on a topic is to see if I can identify the outline of a function diagram. If the answer to this first step is yes, then VM is an appropriate tool.

As an example, can you think of the functions associated with reviewing the health and safety procedures and manual in a large organisation such as the SEC.

MORE RECENT APPLICATIONS

As previously mentioned, an increasing number of our studies (around 50%) now deal with management systems. These topics are typically providing 100:1 return on the cost of the study. The last 22 such topics have the potential to save the SEC some \$150m (\$1990 NPV 5 years).

A recent example of this is the study which reviewed how the SEC handles recording and paying employees' salaries and the associated entitlements, such as sick leave, award payment, etc. This team found that in the Latrobe Valley we currently spend some \$11m per annum on the functions associated with this business. Some of the main issues identified by the team were as follows.

The current system -

- has very large volumes of paper;
- is very people intensive business with multiple handling and data input;
- has many inefficiencies associated with current procedures; and
- has a very high level of inquiries and inaccuracies with very little accountability.

The team's recommendations involved changing to an "exception basis" of reporting with significantly reduced paper; the adoption of a payroll system that was common for both wages and staff and the adoption of making supervisors accountable for the information. A trial of these recommendations has been progressing for around 12 months now and I understand that more widespread adoption is about to commence. I am sure you are thinking how much did they save - 40%. These recommendations are now spreading to the whole of the organisation - seventy positions will disappear. 40% of \$11m (\$19m for all SEC) can be saved.

Another typical management study looked at how the SEC handles the preparation of its Annual Budget. Any of you who have been involved in this typical process will understand that this team found the following:

- there are have excessive loops and iterations in this process (in many instances up to 10 cycles);
- there are many ambiguities and lack of clear responsibilities.
- the budget cycle is too short and there is insufficient preparation time (e.g. two days before Christmas).

I am sure many of you will be able to relate to these comments. Some of the key recommendations coming out of this study were:

- adopt a two-year budgeting cycle to improve the accuracy and remove surprises;
- improve the guidelines and obtain clearer guidance from managers on financial allocation and priorities;
- adopt greater use of electronic data transfer for budget information.

The teams' recommendations identified potential savings of 15% out of an \$8m per annum business.

KEY LESSONS

You cannot conduct more than 300 studies within your own organisation and not have some key lessons. I would like to talk briefly about these.

Perhaps the first key lesson is about teams and their selection.

THE KEY TO VM IS PEOPLE.

We have all heard about how VM requires a multi-discipline team to work. Well I believe that we are also looking for the right blend or mix of attributes in team members. Some of the range of attributes we are looking for in our team members are -

- 1 the **CHALLENGER** who refuses to accept the status quo and who continually questions.
- 2 the **CREATIVE** person to continuously stimulate the team and who can act as a catalyst to stimulate the flow of ideas.
- 3 the **ANALYTICAL** person who can be hard nosed and ensure realistic solutions are found and who help avoid the "wish list" or "group think" syndrome.
- 4 the **PEOPLE** oriented person who can help the team understand the impact of recommendations and who can help the team through difficult times.
- 5 the **TASK** oriented person who can help keep us on schedule.

So as you can see we are not asking for much just a team that can walk on water.

Some of the scars that I have obtained from particular studies I think can be partially attributed to having an inappropriate blend of personalities on a study and perhaps my inability as a facilitator to provide the missing attribute. For example, a team made up largely of analytical types may be difficult to motivate into the creative phase.

So a key lesson that I have learnt is that I now use the above points as a check list to minimise the risk of getting too many personalities of the one type.

One of the other key lessons that I have learnt, at least from our organisation, is how to get decisions made. Many managers are often reluctant to make decisions; however, I found that by adopting a purely professional approach and by persistently following through with the implementation meeting success rates for obtaining decisions have increased significantly. Locking in the key players is a vital part of this. It is worth mentioning that in the early years of introducing a VM program into an organisation selecting a topic with some fat in it, i.e. "a winner" will help to get the runs on the board.

Some other lessons that we have learnt are -

- conduct the study as close as possible to the physical location. This enables the team to stretch their legs on the site. It is surprising how many times a team gains new insights into their topic as they wander around;
- determine the person most affected by the study and its possible outcome and make sure that they are an active team member, or are closely involved;

- always - but always - start a study with a function diagram.

As many of you experienced facilitators will know, VM is a bit like a journey into the unknown and whenever I feel apprehensive I remember the words of one of Australia's leading VM practitioners, Eric Adam who said;

"How do you turn people from being reluctant slaves into willing volunteers? - You -
**GENERATE TRUST,
 RECOGNISE SUCCESS,
 ACCEPT SOME MISTAKES."**

It is always a source of inspiration to watch team members rise to the challenge during a study; to gain confidence and then to move forwards.

As a facilitator I gauge my success by my ability to empower a team rather than by my power over a team.

Enough of my motherhood statements; perhaps a little on VM and the future.

THE FUTURE

As the SEC moves further and faster into TOTAL QUALITY IMPROVEMENT, and as our business becomes more competitive on an international scale, it is my belief that Value Management will form a major tool in our quest for continuous improvement. I see its greatest potential being in the area of cross discipline teams. The advantages of VM in our organisation are:

- it is well understood and accepted in the Organisation;
- there are already thousands of people trained in its application;
- there's almost no topic that will not benefit from the structured approach of VM;
- its very structure aligns people to the key objectives and customer requirements;
- it is the only tool I have seen that uses "FUNCTIONAL ANALYSIS" to create understanding in a team and that uses the "WHAT MUST IT DO?" phase to really challenge the status quo.

In conclusion, the potential for the use of VM is almost endless.

I am unaware of any other tool that offers 100:1 return.

As a challenge in our organisation, it is my intention to make VM a Beacon for continuous improvement. How do you intend to do it for your organisation?

Our gathering here today is vital for Australia. As VM practitioners we have a crucial role to play in helping Australians improve their position in the world. The key to VM is people and creating understanding. The key to the growth of VM in Australia lies in the people in this room. I implore you to help us all lift our game and I challenge you to apply our own tools, particularly Functional Analysis, to what we hope to achieve from these few days together.

**A REVIEW OF VALUE MANAGEMENT IN AUSTRALIAN
POWER GENERATION FIELD**

by

Jack Gregory

Synopsis

In reviewing the status of Value Engineering in the Australian Power Production field it is relevant to see it in the total context of the power scene in the developed world.

In common with trends in many developed countries, there has been a significant downturn in the growth of demand for energy in Australia when compared to long term growth rates.

This trend has created short and long term, financial problems for electric power authorities.

1. INTRODUCTION

The State Electricity Commission of Victoria (SECV) with whom the author was Manager Value Engineering for several years has enjoyed a sustained load growth for several decades of some 7% per annum which has reduced in recent years to some 3% per annum. This low rate of load growth is expected to persist into the foreseeable future.

This means that in the short term the construction program, with 8 - 10 year lead times is currently over-capitalised compared to revenue. The SECV are, therefore, impelled to find means of minimizing immediate capital and operating expenditures.

Currently, long term adjustments are being made to the capital program with consequent progressive reduction in staff levels to match the expected 3% load growth.

In this climate, general managements of electrical authorities in Australia have intensified efforts to both reduce and control costs. Value Engineering and Value Management are seen as making an ongoing important contribution to this effort.

2. DEVELOPMENT

The development of VM/VE in the six states and two territories of Australia may be summarized as follows:

STATE	AUTHORITY	INITIATED VM/VE
Victoria	SECV	1980
New South Wales	ECNSW	1984
Queensland	QEC	1986
Western Australia	SECWA	1988
Tasmania	HEC	1989
Northern Territory	PAWA	1990

We therefore have the situation of five states and one territory practicing VM/VE.

3. EXPERIENCE

3.1 SECV

Several years of experience have allowed the SECV to adapt and simplify the VE approach to satisfy the particular needs of power generation authorities.

In the 300 or so studies undertaken they have suffered a few poor results, but have, nevertheless, identified more than \$200m of potential future savings and to date have implemented over \$100m worth on current projects. The cost of the VE/VM workshops to date is some \$2.0m. Typical savings identified on studies have values of over 100 times the cost of the studies.

Some twenty departments and 800 people have been involved in the studies to date demonstrating the multi-disciplinary, multi-departmental nature of VE/VM.

A significant number of Value Management studies have also been undertaken, some of which were particularly useful in encouraging in a practical way the development of industrial democracy. There is an increasing trend to use the technique in administrative and organisational studies.

3.2 ECNSW

Have undertaken many VE/VM studies after the initial training of ECNSW officers with the SECV and further assistance from VE consultants.

3.3 QEC

Have carried out extensive VE studies particularly on a new power station development (Stanwell PS) resulting in the identification of potential savings of many tens of millions of dollars.

3.4 HEC & SECWA

Have undertaken several studies since initiation of VE in the last 2 years, identifying several million dollars of potential savings.

3.5 PAWA (NT)

Are about to embark on the introduction of VE to the power and water functions of this authority.

4. ORGANISATION

4.1 The importance of the appropriate corporate organisation for effective VE has become more and more apparent to us as the work progressed.

It is now well understood that the VE workshop is the "fun" part of VE, albeit involving long hours of demanding work. We consider we are perhaps only 50% along the track at the conclusion of the workshop.

The organisational aspects that help assure the overall effectiveness of VE start well before, and finish some time after the VE workshop. It is lack of appreciation of the importance of these aspects that give VE a bad name in an organisation. Organisational arrangements must take account of this important requirement.

Starting out on VE in a large corporation is somewhat akin to an act of faith. General management must believe it will be a useful adjunct to the efficient operation of their business. Management must be prepared to commit appropriate, enthusiastic resources to its introduction and maintenance.

Consultants have a valuable role to play but their services must be utilised intelligently and thoughtfully. A consultant coming in cold to a power company, managing a single workshop and leaving them to it is a practice fraught with danger and may be shortchanging both management and the VE profession.

This kind of approach is perhaps appropriate to a small company or where it is requested that a VE consultant carry out a single study on a specific one-off project without the objective of establishing the basis for on-going application of value engineering.

For a large, complex company, such as occurs in electrical power production, a different approach is required.

Based on experience in the SECV and elsewhere, the following approach is suggested:

1. Appoint a Value Engineering Facilitator to champion development of a VE program (not necessarily full time).
2. Retain a top consultant to help introduce a VE program in concert with the Value Engineering Facilitator (tenure of consultant to be in the order of 6 months, but not necessarily on a full time basis).
3. Establish Objectives and Strategies to implement and develop VE; gain top management support and implement.

4.2 OBJECTIVES

The objectives are clear:

1. To introduce VE/VM into the design and construction activities first ("Pareto" area).
2. To promote general acceptance at all levels with eventual independent use.
3. To progressively spread the application of VE/VM on merit throughout the total organisation.

4.3 STRATEGIES

The strategies to achieve these objectives may be summarised as follows:

1. It is vital to make a positive resource commitment to promulgate VE (ideally select a thick skinned, enthusiastic, dedicated, widely experienced, pragmatic and credible person for your VE Facilitator).
2. Use of a Functional Analysis diagram as a basis for seeking organisational consensus on overall strategy is an effective approach.
3. Document agreed procedures. Inclusion in your Quality Assurance Program is recommended.
4. Emphasise the following detailed strategies in practice:
 - Involve management and other key players.
 - Establish clearly that the VE Team members are working for general management - not the VE Facilitator.
 - Professional presentation of results is a very important first step to acceptance.
 - Thoughtful team selection is a must. The team quality is all important.

5. CONCLUSION

There is little dispute that real and significant value improvements, and cost savings, have been made in electrical authorities using VM/VE.

These gains have not been made without overcoming considerable difficulties with credibility, acceptance, and resistance to change. The practice of VM/VE is not free of its share of detractors. Practitioners must be particularly sensitive to "white anting" of VM/VE recommendations during the critical implementation phase, and organisational arrangements in this phase must be very sound.

As the "price" of freedom is said to be "eternal vigilance", this is also the case in maintaining the ongoing success of VM/VE!

