COLLABORATING TO DELIVER BETTER VALUE CAPITAL PROJECTS

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Abstract:
The challenge of getting the right projects delivered on time and on budget is still an issue for many organisations. Strategic business planning and project initiation procedures have been widely adopted but problems persist – why is it so? Have the procedures lost effectiveness or are they not properly embedded in the first place?

“We are ready for tender but over budget” and “we needed this workshop months ago” and “this is the first time all stakeholders have come together” are frequent phrases when value management is called on to assist. Why are these refrains so common and how can the issues that provoke them be avoided?

The rate of change in modern organisations is a source of problems because it leads to skills shortages, high churn of key staff, loss of communication and loss of corporate knowledge and culture. Although much good work has been done to develop effective processes, even the best may fail if not well communicated and embedded using quality procedures. Consequently, old problems re-surface requiring new attempts by new people to reinvent the wheel and too often there is a tendency to overlook or ignore previous well thought out procedures that embrace TQM, VM and RM.

What are some of the traps organisations fall into when developing rational, workable procedures? How can value management assist in developing enduring processes that give confidence to owners that capital works can be procured in a way that satisfies all stakeholders?

Many of these questions are addressed, based on the experience of Australasian Value Management in assisting agencies to make value decisions for capital projects. The experience of its Principal Harry Gough in assisting government agencies to develop robust procedures for ensuring the right resources are available when needed, in a best value way, is shared with readers.

Keywords:

Value, business-planning, resource-planning, stakeholders, project initiation, quality, procedures.

INTRODUCTION AND BACKGROUND

Continuing requests from government agencies for assistance in developing processes aimed at getting capital projects delivered on time and within budget encouraged me to write this paper.

I thought most Australian states had addressed these issues back in the 1990’s when it was proposed to marry strategic business and resource planning with robust project initiation processes.

At about the same time, value management (VM) was recognised as an effective method for developing and/or reviewing projects on the basis of function, cost and worth. Strategic Asset Management (SAM), and Project Initiation Process (PIP) were names given to some of the ensuing processes which were underpinned by integrated value management and risk resolution at appropriate approval points on the project timeline.

However, 15 years later, a significant number of VM workshops appear to be convened at the 11th hour to assist projects with pre-tender cost and time estimates well in excess of what was planned.

If the processes developed in the 1990’s were effective and properly embedded, one would think that by now the delivery of capital projects would be more predictable. I wondered why problems persist and decided to write down my thoughts as to what they may be and to provide some suggestions as to how they may be addressed. This paper takes an Australian perspective but I am confident the issues are not peculiar to Australia.

POSSIBLE CONSTRAINTS

Political promises and pressures

New capital works are often promised in the lead up to an election but opinions differ as to what is needed. Government may say it will demolish a hospital and build new but the opposition may promise to keep the old as well as build a new one.

Disagreement at political level as to how services should be delivered does not support rational strategic asset planning; nor does it promote proper analysis of the cost and worth of satisfying a particular need - against all other needs. In the case of the hospital, which proposal represents best value for the community and how can the agency properly plan its resources in the long term when the next election could cause a change in direction?

Duplication of authority and poor communication

In government, several authorities may have responsibilities for a capital project. Under a government minister and high-level approvals committees are many other authorities including: compliance agencies to ensure egalitarian, sustainability, statutory and environmental issues are appropriately considered; the client agency; consultants or a public design bureaucracy to deliver the project and the funding agency. They may not always agree and if communication is poor, threats to budgets and timelines may be introduced.

Complex and/or vague approvals processes can delay project delivery. VM workshops often echo the phrase – "we need approval for that but we do not know if it will come through; or when".

Unrealistic early project estimates

Delivery of a project can take five or more years from the time it was just a vague idea. Its owner will understandably be optimistic about what it will do and what it may cost but it is often forgotten that early estimates tend to become "cast in stone", at least from a funder's perspective.

As the project progresses, overly optimistic estimates, scope creep, increasing building costs and lack of attention to cost reviews all contribute to pushing an estimate beyond original expectations. When this occurs, central agencies such as treasury departments rightly ask for an explanation, causing further delay and more cost.

Turnover of senior managers and staff resulting in loss of corporate memory

Development of asset planning procedures appears to be a permanent project in some organisations. If key staff involved in developing planning procedures leave or move to another job it may mean starting over again, albeit with a different manager and possibly different ideas, each time it is revived.

Many of those involved in the development of asset planning and procurement methods in Australia in the 1990's must have moved on to other things. It seems there has been some loss of appreciation of what VM is and how it can assist in the asset journey. VM is being introduced into the project delivery process too late, often after the project is already in trouble. VM practitioners are often told: "if this workshop was held earlier we could have saved a lot of time and money".

Lack of a "control" centre for evaluating "wish lists" and projects for worth?

In the private sector the project owner makes it very clear that a key VM objective is to "get the best return on investment" and senior executives attend VM workshops to encourage participants to challenge assumptions and look for better value.

In the case of government projects, VM practitioners can come under pressure from the project owner, delivery agency and/or external consultants, to support aspects of a project that may not necessarily represent best value.

In most government situations there is no clear value "champion" and whether a project proceeds or not may simply be a case of whether it is affordable. Where in government should the responsibility for achieving value goals rest?

Loss of senior management commitment

It is one thing to establish a good set of procedures and another to keep them up. Maintaining processes costs money and even if they are very good, they will fall into disuse if they are not embedded into agency culture. The importance of effective asset management can easily be forgotten when times are good but when problems re-emerge the processes need to be "re-invented", at a cost.

Empire building

Whether or not it is a functional necessity, an increase in the number and/or level of agency staff puts pressure on available accommodation.

Central agencies have the same pressures for more and better accommodation but empire building here can exert another, perhaps more significant effect that is likely to influence the way things are done in other agencies. A change in senior management usually means the incumbent is likely to want to put his or her personal stamp on how things are done. The changes may be largely cosmetic but even a new name for doing the same thing causes confusion and is likely to undermine support for existing, working systems. Service agencies are generally keen to adopt better procedures but become impatient if they feel it is "change for the sake of it".

In a project sense, almost everyone involved in the planning and/or delivery process, including consultants, has a vested interest in specific project outcomes. Some may take any opportunity to support and build their client's aspirations and attempt to "influence" them into accepting features that may not represent best value.

Fortunately, consultants who are aware of the VM method and understand the difference between essential and desirable functions respond well at VM workshops and actively assist in identifying the cost and worth of *all* functions.

Politicians, members of the judiciary, senior bureaucrats and others whose opinions are likely to carry disproportionate weight, make empire building a sensitive issue for VM facilitators. They may find themselves treading a fine line between doing the bidding of "important" people and doing all they can to encourage value adding ideas from workshop participants.

If the funding agency has reason to suspect unnecessary expenditure for whatever reason, it may insist on reviews that will delay the project; so who in government should handle this problem?

Lack of a common basis for planning

A senior central agency officer once complained to me that the bigger, more powerful agencies ignored his requests to comply with planning and project initiation procedures. In response to my question "can't you withhold funds until such time as they do comply?" He said, "At the end of the day we can't withhold funds from agencies like health, education, law and order and justice because it would have unacceptable political repercussions".

Less politically powerful agencies must obey the rules to get even their basic needs met so they ask "why should we meet central agency requirements if others that don't, still get what they want?"

All government agencies compete for the same pool of funds but there is confusion among some of them about what they must do to get their asset needs met. It is incumbent on central agencies to ensure not only that *their* requirements are well communicated but also to clearly set out what each agency must do to get the resources it needs. Unfortunately, this is not always done well.

Outsourcing value and other management responsibilities

At delivery stage, many agencies outsource the project management function to external consultants. There are many aspects of design and delivery that can be effectively handled in this way but outsourcing the procurement of value and risk studies is generally counter productive.

External project managers see part of their responsibility as being to push prices down and so they opt for shorter value and risk workshops as a means of achieving this. Many do not understand what VM is and so the engagement of a VM consultant may become just a "tick" against the "hold VM workshop" task on their project plan.

To properly review assumptions, analyse functions and give participants an opportunity for meaningful innovation, time and expertise is required. Although a small cost saving may be available through shorter workshops, the potential for unlocking significant new ideas that may vastly improve value, will be reduced or even lost. It is usual for a well run VM workshop to achieve a return on investment of 100 - 200 times the workshop cost. Half-day "VM" workshops have their place but can be no more than problem solving meetings, utilising at best a few VM tools.

I believe no other single method is as well suited to developing effective planning and project initiation procedures as Value Management. Function analysis and other VM tools are effective in assisting stakeholders to ensure each planning and delivery phase is focussed on achieving best value outcomes for the projects but the beauty of VM is that it can call on almost any other tool to assist as appropriate. Total Quality Management (TQM) is especially suited to working in conjunction with VM to improve planning processes over time.

WHY DOES VM WORK?

Value management is effective because it is a group process that utilises the knowledge and innovative skills of stakeholders and promotes the use of basic common sense:

- As individuals we have different sets of value and/or "success" criteria and our priorities are different. This presents a challenge in multi-disciplinary organisations to get agreement on what is a real functional need, to get agreement on the true cost and worth of functional objectives and to agree on how a successful outcome should be measured.
- Lack of consensus on such basic issues affects project timelines and cost objectives. In a VM workshop, stakeholders are brought together in an environment where they can freely communicate and express their views but they are also expected to take ownership of outcomes.
- At the end of the day it is functions the project owner is paying for; VM focuses on

functions and the cost and worth of functions. It also gives participants an opportunity to use their innovative skills to discover better value ways of doing things in terms of project components, the project as a whole and/or the system within which the project exists.

- VM utilises a methodology proven over more than 60 years that has been successfully utilised in many economically powerful countries. A skilled independent facilitator provides non-biased direction and mediation in a method that enables stakeholders to achieve better value outcomes for capital projects, operational processes and anything else that enables the delivery of functions.

In the case of planning and project initiation processes, I believe VM is a valuable and essential adjunct for developing logical procedures to expedite the development of a capital project from a vague idea to an effective facility that accommodates services in a best value way.

EMERGENCE OF A NEW CAPITAL ASSET

The need for a new capital asset should only come out of an *effective strategic service/business planning process*. Having established processes that relate enabling assets to business strategies and vice-versa is pivotal in ensuring value and risk considerations are part of the procurement process.

Service and business strategies are often the subject of frequent change driven by customer needs, demand, technology and the availability of assets and other resources. To ensure services remain relevant and the necessary resources are available when needed, a cyclic process of Strategic Resource Planning (SRP) should be carried out in conjunction with Strategic Service and Business planning (SSP). Linking resources to services in a planned, structured way provides opportunities for adding value and reduces the likelihood of losses due to unforseen risks.

Both SSP and SRP require planners to take a stakeholder perspective (including that of customers) and to clearly understand why the organisation exists and where it is heading. Questions that should be asked include in this order:

- why does our organisation exist and what is our business?
- where is the organisation at in terms of business outcomes and services?
- what are the drivers of change?
- what direction should we be taking? and;
- what resources do we need to ensure services are effectively and efficiently delivered into the future?

The diagram below has been developed by the writer to demonstrate the interdependency of services and asset resources. It suggests that outcomes of Strategic Service Planning (SSP) may include: recognition of a need for change in how things are done, identification of changes in demand, suggested opportunities for new services and identification of services that are no longer relevant or needed. Such outcomes will almost certainly impact on all enabling resources, including assets and need to be fed into the strategic resource planning process so that necessary changes can be initiated proactively.

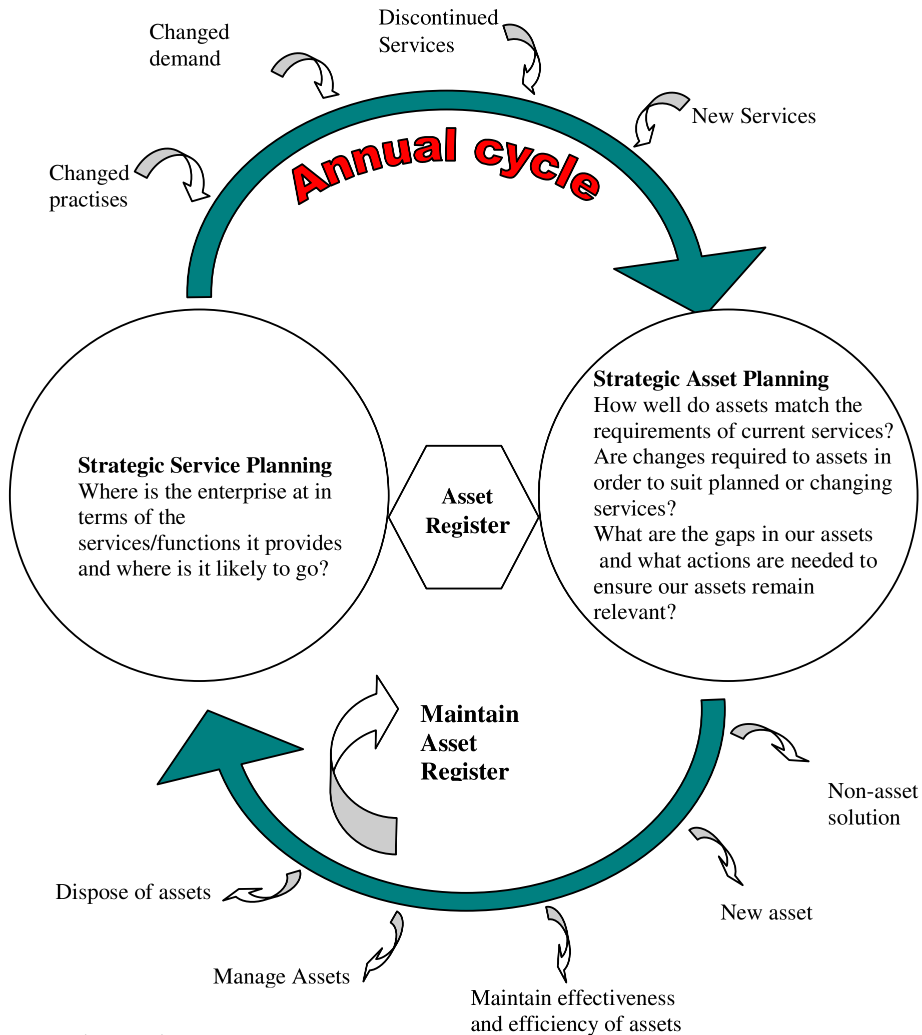
Outcomes of strategic asset planning may include strategies for managing, maintaining and reducing or increasing assets to suit service needs. A strategy to increase assets may include building a new capital asset; in this case a project initiation process (PIP) as discussed below will be necessary.

As the diagram indicates, the outcomes of strategic asset planning need to be fed back into the strategic service planning process because if for one reason or another it is not possible to increase assets, a rethink of business strategies may be necessary. In this case a reassessment of projected business/service growth, demand management initiatives or some other strategy will need to be identified in order to maintain services. If VM can be employed to find innovative ways to increase, change, or develop services without increasing assets, then clearly this is a better value "non-asset" solution and is shown in the diagram as a valid outcome of strategic asset planning.

If the processes illustrated in the diagram are made part of an organisation's culture, then service changes will be predictable and the right assets will be available when needed. Lack of, or inadequate SSP and SRP commonly results in last minute responses to an asset need, thus increasing the risks of time and cost overruns and the wrong resource being procured. Moreover, there is also a risk that business outcomes and/or reputation will be detrimentally affected.

The diagram is relevant for all enabling resources including: human, information and financial resources. It also highlights the need for the often overlooked (except by finance officers) Asset Register which is a key source of information for any strategic review of assets. Unless planners have up-to-date information on existing assets in terms of quantity, availability,

The Periodic Cycle of Strategic Planning that links Resources with Services



condition and functional adequacy they will find it practically impossible to determine accurately what needs to be added (or taken away) from the asset pool to meet projected service requirements.

The diagram recommends that annual (at least) updating of the asset register should be part of the SSP/SRP process. This is generally the case for human and financial resources but assets and information resource registers are often not well maintained.

VALUE MANAGING CAPITAL PROJECTS.

An increase in value may be described as "providing all necessary functions at less cost or, increasing functionality for the same or some additional cost" (it is not unusual for the private sector to spend more than originally planned if the ROI is disproportionally increased). Risk on the other hand can be described as "something that may or may not happen in the life of a project, process or thing that has the capacity to cause loss of one form or another".

If risk can cause loss then surely risk must be considered in the context of value. In the discussion to follow, Risk Resolution (RR) includes: identifying risks, assessing risks for likelihood and consequence and suggesting management or mitigation measures. Contingency planning is often dealt with as an afterthought but well thought out contingency plans may avoid costly risk management or avoidance measures - thus improving value. The writer believes value engineering (VE) and risk resolution (RR) come within the scope of value management (VM) and they are considered in that context.

If strategic service/business planning and strategic asset planning indicate that new functions or increased functional turnover needs to be accommodated then another process, specific to project delivery, needs to begin. There are various names given to it but essentially it is a five to eight phase project initiation process (PIP). PIP takes a project from strategic planning through to delivery and beyond. An example of a well thought out Project Initiation Process was developed by the Western Australian Treasury in 1995[1].

All organisations have their own terminology to identify decision points in the PIP process but the basics are:

The concept phase: where functions are confirmed and options that may satisfy accommodation requirements are developed;

The evaluation phase: where options for meeting service requirement are evaluated so that a best value option can be chosen;

The definition phase: where a design brief, based on agreed functional requirements, is developed;

The delivery phase: where the project is documented and procedures for construction and delivery are implemented; and

The review phase: where both the construction phase and the operation of the facility are evaluated so that lessons learned can be fed back into the strategic planning and project initiation processes. The review phase is generally not well disciplined and often the lessons learned are not built into future projects.

Value management, value engineering and risk resolution are important in facilitating the asset procurement process and maximising opportunities for achieving best value outcomes. The following chart illustrates opportunities for their use in assisting the passage of a project from strategic service and resource planning (the shaded part) through to the delivery stage and beyond.

RID – Risk Identification RM – Risk Management VM/VE – Value management/Engineering.

Project Phase	VM	VE	Risk Resolution
Pre-Project initiation: strategic service, business and resource planning.	To assist stakeholders to make best value strategic business and resource decisions.		(RID) focuses on risks to political/business/ service outcomes.
Concept	To assist stakeholders to develop innovative, best value options to meet a resource need and establish an evaluation brief.		(RID) focuses on identifying high-level risks to the funder, stakeholders and services.
Evaluation	To assist stakeholders to evaluate and choose a best value option that will deliver required functional outcomes.		(RID) still focuses on high-level risk but risks associated with design and delivery begin to emerge.
Definition	To assist stakeholders to develop a delivery brief based on agreed functional requirements.	To assist stake-holders to look for innovative ways to add value to designs and ensure all functional needs have been met.	(RID)/ (RM) reviews and updates identification of project risks and initiates management strategies.
Delivery	To assist stakeholders to choose best value procurement methods, develop contracts and deliver partnering agreements.	To assist stakeholders develop innovative, value adding ways of achieving construction programs and project outcomes.	(RM) reviews and updates project risk identification and management for the project and its operation.
Review	To assist stakeholders to learn functional and contracting lessons from post occupancy and post construction studies.		(RID) reviews and compiles risks encountered in project delivery and operation.

ADDRESSING THE ISSUES

To improve the way we plan, develop and deliver new capital assets all stakeholders need to be involved and they need to take ownership of the process. In addition, they need to agree on where control should lie for the overall good of services.

The suggestions outlined below address the issues raised and have the potential to improve functional, time and value outcomes for the asset planning and delivery processes. They are aimed primarily at government institutions but the principles are applicable to any large enterprise.

Maintain effective procedures

Develop and agree effective procedures for strategic service planning, strategic resource planning and capital project initiation. This is a big task but not impossible as it has been almost achieved more than once. Value management will assist in developing a focus on functions but a determined commitment from the top is needed to ensure appropriate resources are provided to make it happen and also to ensure procedures are properly embedded into the cultures of all appropriate agencies. The development of the processes must itself be well planned, independent of any particular agency and must utilise a team approach so that if a key member leaves, another can immediately step in and assume the role.

Mandate procedures

Strategic planning procedures must be logical, easy to understand, reflect common sense and be mandated for all branches/agencies so that effective annual strategic service and resource planning really does take place.

Similarly, a project initiation process must be easy to understand with clear and unambiguous decision points. Moreover, central and funding agencies need to mentor and assist service agencies to develop and maintain the resources they need to carry out the procedures.

Mitigate political and other influence on process

Dealing with political influence on rational asset development is difficult because come Election Day, constituents are free to cast their votes in accordance with their needs. Even so, governments and oppositions should be made aware that logical, planned processes need to be put in place and maintained to ensure the community gets the facilities it really needs in a best value way. A multi-partisan approach is essential to ensure government and opposition politicians understand the need for transparent, long-term processes based on functional and service needs rather than political expediency. An opportunity exists for all politicians to support the processes as an adjunct to their promises of open, accountable and fair government.

Familiarise staff with processes

Management and staff need to understand the link between services and resources and the methodologies available for achieving better value outcomes (e.g. provide VM familiarisation training). Every agency should have a nominated manager with the authority and responsibility for embedding the processes in agency culture and complying with annual reporting cycles. Encouraging project managers to introduce value management early in the project initiation process will assist in reducing abortive work, getting the right facility in the right place at an appropriate price and delivered on time.

Find a "Champion"

Public works agencies used to have wide-ranging control of agency submissions for new assets and insisted, with almost military procedure, on a high level of planning and justification before an application for funding went forward. As these agencies dissolved in favour of less autocratic public sector management, gaps emerged in the process for justification and delivery of capital assets. Attempts have been made from time to time, to install new central agencies between service agencies and the funder but it appears the gaps are yet to be effectively addressed.

To be successful in the long term, asset planning and delivery procedures need a permanent "champion". A separate, independent branch of the funding agency would seem to be the logical provider but to endure, the "champion" will need to be supported by both government and opposition politicians. The "Champion" must also have the authority to insist on and maintain control of value initiatives and the processes by which they are applied.

Maintain a process focus

Staff will come and go so all agencies, including the "Champion", should not rely on one person or put all its eggs in one basket in regard to maintaining and improving processes. Asset planning and delivery procedures need to be permanently written into organisational culture and allowance needs to be made for their review and improvement over time (VM and TQM are appropriate and ideal methods for this).

Many asset management procedures developed over the past twenty years are excellent processes but perhaps due to small glitches applicable to one or more applications or the loss of a "champion", they fall into disuse. An appropriate way of maintaining an enduring process is to write the procedure and a strategy for its continuous improvement into quality procedures.

Keep the "Champion" and funder up to date

From the earliest optimistic project scoping and estimates of cost there is bound to be change.

If justification for the project remains valid, the "Champion" and funder need to be kept up to date. Although this seems pretty elementary it is clearly not well done because many pre-tender estimates seem to be a bit of a surprise when the project reaches this stage.

At the end of the day the delivery of a needed asset will be delayed if agencies are afraid to let the funder know that costs are blowing out. Keeping secrets from the funder or ignoring cost blowouts has the potential to increase delays and costs. If this happens and additional funds can't be found at the 11th hour it may result in the deletion of the project from the works list; an outcome that may threaten services and embarrass the government.

Provide independent peer review

In addition to maintaining discipline for project justification and setting goals for value adding processes, the "Champion" should also have the authority to hold an independent external review of project rationale.

This should be undertaken by a panel sourced from a pool of reviewers representing a broad cross-section of the community but trained and qualified in reviewing projects for need, function and worth.

To give panel members an opportunity to properly understand the project, a supervised and facilitated session for this purpose should be held prior to the review. After the review, a chairperson should produce a report outlining review findings to the "Champion", the project owner, the funder and relevant agency and political stakeholders.

The importance of the independence of the pool of reviewers and their training in function and value analysis cannot be understated as it is pivotal to the success of this style of review. In Australia, several state governments have introduced similar processes but what happens if a review cuts across government initiatives may yet to be tested.

Control of value adding processes

With the demise of public works agencies, many agencies employ consultants to manage their projects, including the procurement of VM and other services.

Unfortunately, some project managers do not have a good understanding of the purpose and worth of value management and they tend to procure these services on the basis of price rather than outcomes. The writer believes this is a key driver in the trend towards shorter VM workshops.

Government agencies would not generally outsource their financial management so it makes no sense to outsource the procurement of value management services.

To ensure the benefits of VM, VE and RR are realised, the facilitator should be engaged directly by the project owner or preferably the "Champion"; moreover, the "Champion" should always be represented at workshops. In other words, the "Champion" should maintain ownership of value adding and value analysis processes.

SUMMING UP

This paper is based on observations made over more than 30 years working in government and private in a range of responsibilities including: project design, project management, development of strategic asset planning and management procedures, development of project initiation procedures, facility management and more recently; 18 years experience in delivering VM and related services in Australia and Asia.

It attempts to highlight some of the impediments to the building of enduring project planning and project initiation procedures and suggests measures to overcome or accommodate them. If the paper encourages the utilisation of value management for improving the way public assets are planned and justified, and the way they are developed, procured and assessed for performance, it will have achieved its purpose.

References:

[1] Department of Treasury 1995, *Project Initiation Process for Capital Investment in Non-Residential Buildings,* Capital Evaluation Unit, Government of Western Australia, Perth.