# AN AGILE VM APPROACH TO MATCH CHANGING PROGRAM & PROJECT DELIVERY METHODS - SCOPING VM STUDY ACTIVITIES FOR DIFFERENT CIRCUMSTANCES

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## Abstract

The Value Methodology[1] (VM) sets out an excellent framework for the planning and improvement of a wide variety of programs and projects. However, its application is sometimes oversimplified, through the omission of some phases and critical activities, such that the process cannot reach its full potential. Accordingly, to both keep pace with fast-changing industry approaches and to deal with a wide range of application requirements, the enhanced VM was developed. This was described in a paper[2] and presentation at the 2017 SAVE International Summit.

Generally, the only limitations to outstanding VM success are: 1) applying it to the appropriate situation and scope, 2) timing of application, 3) depth and rigor through which the methodology is applied, along with, 4) VM team performance. However, there remains the issue of defining how many study activities are appropriate for different types of applications and circumstances. There is also an apparent paradox in that there is typically a requirement for short workshop(s) while addressing ever broader scope and demonstrating process rigor. This leads to the questions of:

- Where should the formal VM process begin and end?

- Should the VM be applied as one (or more) study workshop intervention(s), or as a continuing process throughout the life of a program or project?

- Should the VM be structured differently in order to serve various types of applications and for differing circumstances?

- Can the VM be agile (i.e. nimble) to suit such varying situations?

The purpose of this paper is to discuss today's challenges and improvements to the application of the Value Methodology for a wide range of (types, size and complexity of) programs / projects and timing.

## Context

Some program and project jurisdictions have their own particular view of how the VM should be conducted. Such views vary widely regarding timing of application, resources required and activities to be conducted. It is unlikely that a single VM approach can satisfy all needs, yet many study sponsors and practitioners will resolutely resist change to their current paradigm.

Recognition of different value improving needs and approaches is discussed following.

The VM is used to great effect in such fields as: transportation, environmental, building, manufacturing, industrial/process, etc.  VM studies can be applied across the full spectrum of the program and project life cycles through the stages of:

    I.      Strategic Assessment and Planning

    II.     Formulation, Definition and Development

    III.    Program and Project Execution

    IV.    Service Delivery and Renewals/Major Retrofits.

Many of today's VM study participants expect minimal involvement yet maximum effectiveness of outcomes. Ironically, workshop participant numbers are swelling to incredibly high (often part-time) numbers, yet facilitation resources are kept to an absolute minimum.

At the same time, there is a trend toward different methods of project delivery. For example, in the infrastructure sector, traditional delivery methods are based around a series of transactions, from owner, through consultants to contractors to suppliers, before handover to an operator/maintainer.  Separation of design from construction, with the resultant myriad of subcontracts can lead to adversarial relationships, introduction of more overheads and risk, along with creation of additional costs and less end value.  In this climate, the VM has often been applied late in the development stage (or even during the project delivery process) as an intervention, in an attempt to identify best overall value based on the whole life-cycle of activities and costs. This can be viewed as disruptive, when the real point is that the VM was applied too late for comfort and ability to be implemented to suit all parties.

Further, there is a disturbing trend toward token VM "drive-by" workshops. Several factors can cause this, not least the "over-busy society" that we live in today.  Additionally, follow-through of individual VM study recommendations tends to fall by the wayside, as project team members seek to regain the *status quo* and settle back comfortably into their familiar paradigms.  In essence, there is a lack of real value planning, continuity of related performance controls throughout the value chain and consequent loss of tangible value for owners and stakeholders alike.

It is the author's opinion that the root cause of some VM workshop results being less than stellar can often be traced back to various VM literature oversimplifying the process and misleading inexperienced practitioners and clients alike. Also, some participants confuse attractive looking VM tools with process. While powerful, the VM is not the simple-to-apply process that some people would have others to believe. The VM  may appear easy to the onlooker, but it does require a lot of effort and rigor from the team leader and support members. Experienced clients do recognize this and specify study requirements accordingly.

## Today's Needs

What do today's stakeholders expect from a value improving process? Much has changed since 1947 when the original value analysis process was developed. The transactional approach (e.g. through a chain of competitive tenders for cascading activities) for project delivery is unlikely to yield the best value for the owner. Moreover, just plugging the VM somewhere into this chain can often do no more than "go through the motions" of having conducted a VM study. This can lead to the VM workplan being unnecessarily limited by restrictions imposed through misinterpretation of why and how a VM study should be conducted.  However, it is likely that the practice will continue for some time yet.

In the meantime, particularly as the bureaucracy around procurement processes becomes increasingly more rigid and less effective in real terms, new approaches are coming to the forefront.  Continuing with examples of infrastructure work, we have had for some time, such delivery processes as design-build, EPCM, P3 / PFI, partnered/integrated project delivery, and construction management. There are now trends for more collaboration throughout the supply chain, toward something of a shared enterprise approach, with the VM study approach at the core.

The VM has to be responsive and complementary to all such approaches.  In its ideal role, the VM should play a key navigational role and have continuity, right from the stage of needs identification and strategic planning, through conceptualization, project design and delivery, to operations optimization and longer-term retrofitting/revitalization. This requires a change in mindsets of many people, i.e. from promoting VM workshops, to encouraging a holistic value improving approach.  In turn, we should ensure that our processes and outputs are in fact agile, as well as sustainable, extremely cost-effective and irrefutably useful to all parties concerned. Agile is defined as "*able to move quickly and easily*".

Agile is not meant to imply omission of critical aspects such as function analysis, or various activities because of time constraints!  However, it may not be necessary to have all members of a large workshop participate, for example, in a function analysis exercise. Function analysis is indeed powerful, but so are other techniques in the arsenal of a good VM team leader. Some applications of "standard" tools and techniques can be extremely effective, whereas when applied at the wrong time or to the wrong circumstance, they would be viewed as entirely inappropriate and a waste of valuable time. It is important to apportion study and workshop time appropriately to needs and resources, as well as capturing the continuing interest of all participants.

The VM is a wonderful thinking process for resolution of issues and problems. Even more benefits can be obtained by broadening its usage and flexibility to overtly address a range of considerations and levels of application. The agile VM provides a guiding framework for a value improving approach across the whole program/project life cycle.  The activities and considerations are selected for application, as needed, at different stages of program/project development and circumstances.

Figure 1 illustrates how the focus of applying the VM changes over the life cycle of a program or project.  This has a significant impact on the approach, emphasis and resource requirements for a value study.

Stages I and II focus on identifying where best overall value lies and planning to obtain it. Stage I concentrates on strategic and business aspects; Stage II focuses particularly on selection and clear definition of conceptual aspects.

Stages II and IV are concerned with how to realize and optimize for best value.  Stage III is more detail oriented for efficient project execution. Stage IV, the majority of the life cycle, focuses on improving the effectiveness and efficiency of service delivery.
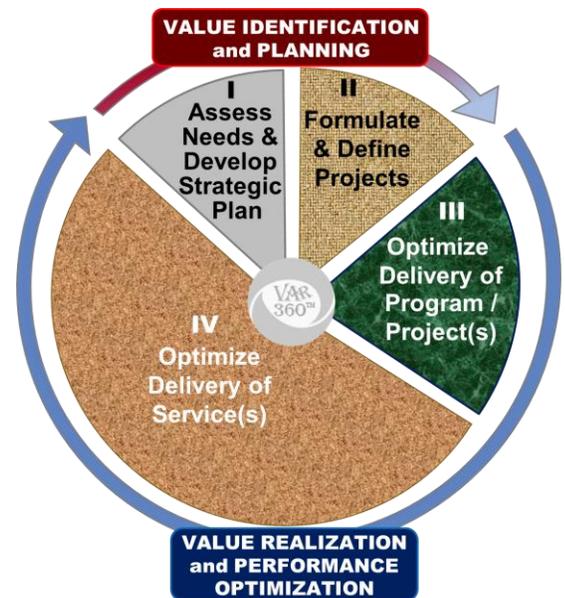


**Figure 1.
Differing Focus Re.
Time of Application**

## VM Study Considerations

The VM phases (information-function analysis-creativity-evaluation-development-presentation) are an extremely powerful sequence. However, it is unrealistic to expect it to work in a single workshop for all circumstances and application types.

There is currently an over-emphasis on the VM workshop (rather than the whole VM process). Diligent managing of the activities before and for each of the phases can "make or break" the perceived effectiveness of a VM workshop; the VM should be managed as a total process to include adequate pre and post workshop activities. The starting point of an effective value improving process is to identify a compelling reason for conducting such a review. This may not always be as obvious or as achievable as first seen. A high level diagnostic review (including a strategic FAST diagram) should be the first activity.

On the other hand, the function analysis phase should include other forms of analysis such as risk and performance. Following the strategic diagnosis, the most suitable scope, focus, study approach, timeframe and resources can be defined in overall terms.

When initiating a VM study, consideration should be given to a potentially wide range of varying requirements and constraints such as:

- Size, scope, complexity, repeatability. Risks, uncertainties and unknowns
- Urgency for issues resolution & implementation of solution. Size of the "prize"
- Affordability of end-product, potential for improved service and reduced deficit
- Long-term ownership implications (e.g. revenue, disruption, life-cycle costs)
- Social, environmental, political sensitivity. Corporate priority and reputational / brand image
- Type of program/project (e.g. transportation, environmental, building, manufacturing, industrial/process, etc.). Stage of work: planning, development, implementation, operations.
- Type of contractual relationships, constraints and limitations to potential change
- Availability of stakeholder representation; suitable pace of proceedings and competing priorities
- Potential return on the VM study investment.

Aspects such as these can impact heavily on the required study time and resources. Therefore, the VM must be, and must be seen to be, agile and responsive in its design and execution for different conditions. An inherent challenge is to ensure the "optics" of a seamless value improving process from end-to-end, (i.e. from initiation, through workshop preparation, reporting, approvals and implementation), while remaining within a competitively low budget. An additional factor is the method of procurement of the VM team leader and members. As well, timely submission of high quality reports that engage executive level management are important. It is the author's experience that the more freedom that is given to the team leader to advise and control the value study process from beginning to end, the better the results will be. Further, good connection with executive management is essential but is often missing.

## Levels of Application and Terminology

The practice of value improvement is peppered with an array of terminology and differing interpretations. There are, in effect, 3 levels of value improving reviews that use the VM sequence of information-analysis-creativity-development-presentation thinking (to a lesser or greater extent):

- ❑     **Value Assurance**[3] (VA) is an oversight process for making certain that senior management's expectations will be met; this includes ensuring continuing stakeholder confidence and optimum program / project performance. Value Assurance is conducted via a series of planning, independent, diagnostic reviews (VARs) and reports, from the outset of a program or project, through development, to execution, operation and final disposition. Where necessary, in-depth, decision enabling tools such as risk management and value engineering are subsequently utilized.

- ❑     **Value Management (VMt)** is a process for establishing best value from the outset of a project. This may be achieved through a series of "light" stakeholder consensus-building workshops and complemented by value analysis/value engineering techniques. As sub-sets of value management, **value scoping** and **value planning** workshop are terms that are also gaining in familiarity for use early in a project's life. There are also some short duration **issues resolution workshops** that fit under the umbrella of value management and follow just some of the VM steps and tools; being used as quick interventions to address specific issues and build stakeholder consensus.

- ❑     **Value Engineering (VE)** to improve high cost and high risk, complex projects. Value Engineering (according to US Public Law 104-106) is "*an analysis of the functions of a program, project, system, product, item of equipment, building, facility, service, or supply of an executive agency, performed by qualified agency or contractor personnel, directed at improving performance, reliability, quality, safety, and life cycle costs*". **Value Analysis** was the name originally given to Value Engineering.

## An Agile VM Approach

A "one size fits all" approach to VM activities can be confusing and tends to lead to difficulties for clients and consultants, particularly when competitive (*ergo* price) bidding for VM studies is involved.  It tends to becomes a matter, not of "*what should be done for best results?*", but rather one of "*which activities can be omitted to meet the imposed time and cost constraints*?". Clearly this is an unsatisfactory situation.

The number of considerations / VM activities has a direct bearing on the resource requirements and more importantly on the effectiveness of the outcomes delivered.  A small increase in appropriate VM facilitation and recording resources can have an exponentially high impact on the smoothness of the value improving study and its effectiveness.

Figure 2 shows a framework for identifying the type of application of a VM review in terms of level and depth of application, example number of a considerations/activities and extent of executive involvement. Team leaders require skill in choosing the most appropriate process and means of communication to suit varying circumstances. Integration of VM within overall program / project management processes is to be encouraged.  Value studies may be conducted in a compressed timeframe or over an extended period using connected and continuing proceedings to suit prevailing priorities and availability of information and team members. Even for a large, complex project, the value improving workshop may be just 3 days, following suitable preparatory activities.
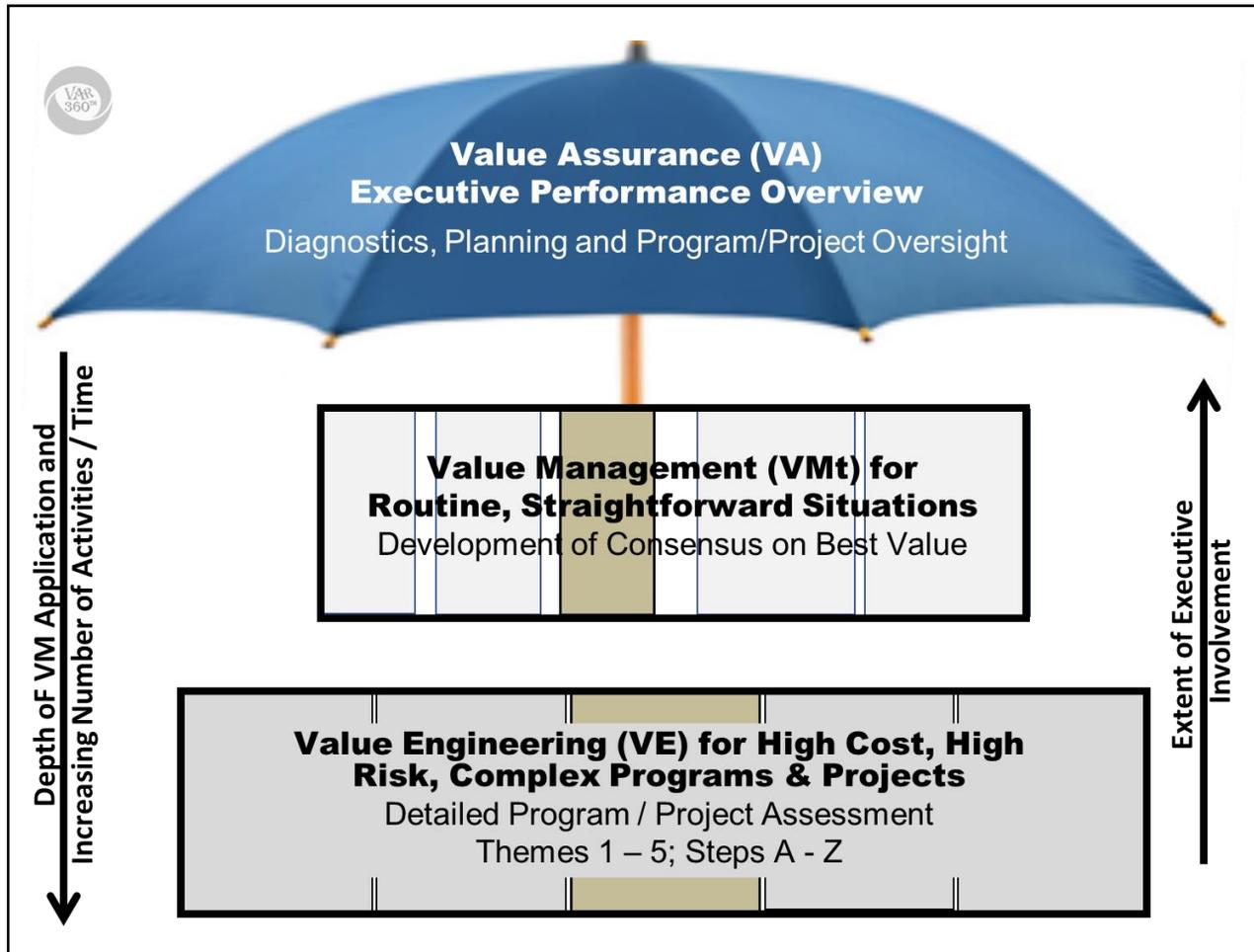


**Figure 2.  Value Review Levels and Depth of Application**

Some iterations are built in implicitly and maximum use is made of interactive templates to reduce study administration and report writing time. While the use of interactive templates saves much time, there is also a case to be made for adhering to the traditional method of using flip charts and posting around the work room walls for all team members to view.  This of course can look rather old-fashioned and contrasts greatly with the trend toward electronic working team members communicating remotely through telephone and video contact.

A currently growing tendency is for the VM to be conducted as a short workshop event with minimal pre-workshop and post workshop activities. For truly effective value improvement, the formal process starts well before the workshop and ends quite some time after the workshop.  However, this is where the root of a VM conundrum lies. Clients want the job done well and in as short a time as possible, with minimal input from staff resources; while there are various service providers who purport to offer VM/VE at very appealing prices (and in so doing denigrate the reputation of the VM).  The conundrum itself is twofold:

- For new VM clients – whose version of the VM process to believe in, regarding how much effort / resources should be spent on a reliable value improving process

- For experienced VM practitioners – how to respond (price) competitively to unrealistic requests for proposals.

There are no meaningful shortcuts to deriving value improvements that will sustain over time.  There are, however, opportunities to conduct short duration workshops within an overall value assurance framework. The "magic" of VM is not in doing a workshop quickly in front of large cast of onlookers, but in conducting the whole VM process well and smoothly. Not all projects require to undergo a detailed VM review. Further, not every situation requires a workshop to resolve the problem or opportunity. Sometimes, the judicious use of a FAST diagram will suffice. Figure 3 summarizes the 5 stages and thinking modes (e.g. "thinking hats") of an effective and efficient value improving study. Different levels of stakeholder reviews can be accommodated between themes and theme activities.
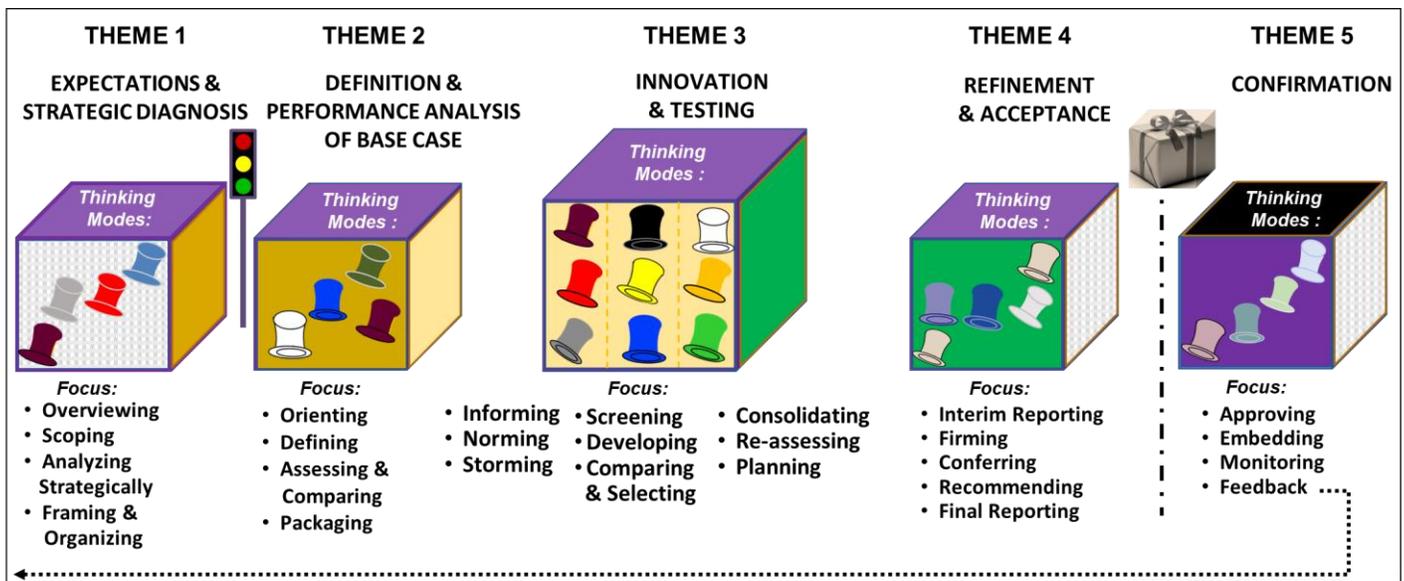


**Figure 3.  Value Improving Study Themes and Focus**

The 5 stages and the 26 integral steps, A through Z, are listed below.

**Theme 1.**
**Establishing a Framework for Success**

❑  Focus:    *Intent and Requirements; Strategic Diagnosis; Expectations and Planning*

❑ Purpose: *To Ensure Overall Understanding of Requirements, Resources and Timelines*

    Step A, Initial Appreciation & Establishing Expectations
    Step B, Initial Diagnostic Review (from perspective of overall performance)
        Identify Incentivizing Mechanism & Key Target(s) for Improvement
    Step C, Value Study Terms of Reference and Work Plan
    Step D, Study Support Logistics (including appointment of VM team members).

**Theme 2.**
**Creating the Conditions for Success**

❑ Focus: *Definition and Analysis of Performance of the Base Case*

❑ Purpose: *To Ensure Readiness to Proceed to Workshop(s)*

    Step E,  Initial Orientation(s)
    Step F,  Definition of Program / Project Requirements; State Assumptions
    Step G, Definition of the Base Case (Current Way of Operating, Plan or Design)
    Step H, Assessment of Base Case Performance: Functions, Cost, Risk and
        Performance Assessment; Comparisons/Benchmarking against Similar
        Functions Elsewhere
    Step I,   Preparation of Workshop Input Package.

**Theme 3.**
**Exploring & Testing Possibilities for Improvement through Workshop(s)**

❑ Focus: *Stakeholder Innovation and Testing; Consolidation of Potential Options*

❑ Purpose: *To Ensure Creative Approach, Thoroughness & Testing of Ideas*

    Step J,  Workshop Team Orientation / Summary Information Presentations.
    Step K,  Overview of Project Analyses; Selection of Target Areas for Improvement
    Step L,  Workshop Creativity Phase
    Step M, Workshop Screening Phase
    Step N, Workshop Development and Testing Phase
    Step O, Comparison and Selection of Proposals
    Step P, Consolidation of Interim Outputs and Re-assessment of Potential
        Performance and Risks
    Step Q. Planning for Implementation.

**Theme 4.**
**Ensuring Effective Outcomes**

❑ Focus: *Refinement, Selection, Consultation, Recommendations, Acceptance &*
       *Reporting*

❑ Purpose: *To Ensure Clarity of Proposals & Action Plan and to Confirm Consensus*

    Step R, Interim Outputs (presentation, report, workshop diary)
    Step S, Firming-up (technical verification and fine-tuning of cost estimates)
    Step T, Stakeholder Consultation;
    Step U, Formal Recommendations
    Step V, Final Report; Study Completion.

**Theme 5.**
**Confirming Value Realized**

❑ Focus: *Embedding of Change, Monitoring of Outcomes, Fine-tuning / Adjustments,*
       *Assessment of Study Effectiveness*

❑ Purpose: *To Confirm Realization of Benefits & Improve Corporate Value Program*

    Step W, Monitoring and Reporting of Implementation of Value
        Enhancement Proposals / Embedding of Change (by others)
    Step X, Implementation Record of Value Enhancement Proposals and
        Value Improvement Achieved. Create / Update Project Value File
    Step Y, Evaluation of Study Performance & Cost-Effectiveness.
        Compilation of Lessons Learned
    Step Z, Feedback to Value Improvement Program & Data Warehouse.

The list of activities may at first appear formidable and has attracted such comment as "*we don't have time to do all of this*".  It is, however, probable that experienced consultant practitioners are already doing much or all of this, but either not charging for it or building the activities within their fee (at the risk of being viewed as financially uncompetitive).  Looking at it another way, can effective and sustaining results be obtained without addressing all, or most, of the activities listed?

With the several steps being explicit, rather than being seen implicitly as stumbling blocks, the team (a limited number of the appropriate persons) conducting an agile VM study is "*able to move quickly and easily"* through the process toward effective and timely outcomes.  This can be greatly assisted by the use of smart techniques and templates.  Efficiencies in timing depend heavily on briefings for and cooperation / availability of the client personnel.  For non-urgent studies, steps may have a period of of days or weeks between them.  For urgent studies, the steps can be conducted as a continuous flow of activities over a relatively short period of time.  Allowances should also be built-in for client situations requiring short days/weeks, or breaks for other meetings and commitments, as may be required.

## Summary

The SAVE International Value Methodology (VM) can be applied to almost any topic and at any stage of planning, development, execution or operation, with tremendous results.  Around the world, there are different interpretations of how value improvement should be accomplished, and in general, the traditional VM workshop is sometimes viewed as being somewhat lengthy for today's 'instant gratification' society.

So often these days, VM reviews are expected to be something of a "flash in the pan" event – with miraculous outcomes.  Through a shared understanding of the full extent of a well-run value improving review, misunderstandings about the VM process and its activities resource needs can be circumvented.  This assists in specifying realistic requirements for proposal calls for VM services, related responses and detailed planning for specific VM studies.  The VM process can be applied flexibly to suit the commitments of other key study stakeholders.  A continuous, coordinated application of the VM process is encouraged from end-to-end, (i.e. from initiation, through workshop preparation, workshop(s), reporting, approvals and implementation / monitoring), culminating in submission of high quality reports to engage executive level management and other senior stakeholders.  The VM can move quickly & easily, in that it:

- Has a comprehensive framework
  - From executive management directive, through several thinking modes, to approvals and embedding of change
- Comprise an explicit & smooth sequence of steps to fit variety of applications
  - Avoids process glitches and surprises; keeps all participants properly informed
- Can be "sliced" to suit different circumstances and paced accordingly
  - From short, intense applications to stages being spaced at varying intervals
- Allows for broader stakeholder input / comment at specific study stages
  - Accommodates a range of stakeholder reviews at different study stages
- Minimizes workshop face-to-face time for large numbers of participants.

The agile VM provides guidance, optimizes study team time and leads to better study outcomes.  In addition, the agile VM approach is used to support the overarching value assurance process which provides end-to-end project diagnostic, oversight, reporting and recommendations for adjustment.  Together, these methods form a suite of useful analytical and decision-enabling tools in keeping with the business trends and demands of the 21st century.

## References

1. *Value Methodology Standard 2015 Edition,* SAVE International, March 2015
2. Phillips, Martyn R. (2017) *Enhancing the VM Work Plan for Better Outcomes.* SAVE International Value Summit Philadelphia, PA
3. Phillips, M. and Shishevan, S. (2013). *Driving Best Value Portfolios, Programs & Major Projects Through Value Assurance.*  SAVE International Value Summit, Washington, DC.