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## EFFICIENCY IN VM/VE STUDIES AND THE PRESSURE FOR SHORTER WORKSHOPS

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### ABSTRACT

Pressure from clients' for ever shorter VM/VE (value management/value engineering) studies has been observed as a factor in the organisation and conduct of workshops particularly in the UK construction sector. The objective of the study reported in this paper is to reach a measure of consensus on ways of making the VM/VE process more efficient. A pilot study was conducted through means of an international survey of selected well-established VM/VE practitioners to ensure a high quality data set focused specifically on agendas, tools, recommendations, and other related information. Evidence collated from the pilot study and through feedback at an international conference builds the case for launching a full scale study of all registered VM practitioners. A review of previous benchmarking studies conducted in the VM field explains the disparities between UK and US workshop practice. The issue of time for each stage of the job plan is explored as well as the total workshop duration. The conclusion suggests methods of streamlining the workshops and describes the conditions under which a full one day team based activity will achieve the study goals appropriate to the specific stage in the development of the project.

### Keywords

Value management, value engineering, pilot study, workshop durations, job plan

### INTRODUCTION TO THE RESEARCH PROJECT

A requirement for a deeper understanding amongst workshop participants of the value management (VM) workshop and the necessity to address the pressures of time in the UK construction industry has resulted in the study of the typical VM tools used by an accredited VM facilitator, and the way in which the tools relate and feed into each other to ensure a thorough exploration of the project. The pressures of time is highlighted by Thiry [15] 'An increasing problem in the practice of VM though is that, on one hand, clients ask for shorter and more focussed VM studies and, on the other hand, the complexity of situations subjected to VM continually increases.'

The case is made for the requirement of full day workshops in the UK appropriate to the specific stage in the development of the project.

It is important to note is that this study does not aim to make recommendations as to what the best workshop practices are and how long a workshop should span but instead to disseminate the views of practitioners on their own preferred and proven methods to achieve value in projects. A workshop will explore ways of making the VM/VE process more efficient, with the objective of making recommendations in support of workshops with time constraints.

This study involved an extensive review of the literature and research of value management practice in the UK, the US and other countries. The literature review was conducted over the internet, through publications and conference proceedings which included past SAVE proceedings focusing on workshop tools, techniques and processes. Respondents were sourced through the Institute of Value Management (IVM) in the UK and the SAVE Consultants Directory published in the US ensuring a high quality data set would be obtained. The total survey sample for the pilot study was thirty-seven; this was broken down into fourteen from the UK, twenty from the US and three from other countries.

All respondents were asked via e-mail to provide information on their common workshop practices. This included the provision of an indicative workshop agenda, the tools and techniques adopted, and the conformance with the VM Job Plan. In addition to this, respondents were asked to provide any other comments that may be helpful to the study.

The study was undertaken in five stages as outlined below:

- Stage 1 – Review literature and web trawl
- Stage 2 – Email survey to practitioners in UK, US, and others
- Stage 3 – Conduct a simple content analysis of responses received
- Stage 4 – Compare and contrast agendas
- Stage 5 – Analyse data and report at international conference

The third stage of the research involved the analysis of survey data which commenced with a simple manual content analysis of each email response that contained comments and further information on workshop practice. Information from these were categorised under three headers; ‘Workshop Duration,’ ‘Job Plan,’ and ‘Tools and Techniques.’ The next stage was a review of the agendas which involved a comparative analysis of the timings given to each stage of the Job Plan and the tools used throughout the study. This was the most complex stage as all agendas were different spanning different durations with varying degrees of detail.

## **BENCHMARKING VALUE MANAGEMENT PRACTICES**

A review of past benchmarking studies on VM practices was conducted to ensure; firstly that a similar study had not been carried out previously, and secondly to explore any points that may be relevant to this study. However, this was found not to be the case from a benchmarking study

conducted by Fong et al. [5].

Fong et al. [5] suggests that due to the growth of value management, a standardised process should be developed that identifies best practice across the industries applying it. The case is presented that there is little in the way of benchmarking studies conducted across the different disciplines other than construction and manufacturing, presenting an opportunity to improve current practice through the identification of what is working well. It is stated that; *'the idea of benchmarking is so new that empirical evidence is very scarce'* (Fong et al., [5]). The only source identified is that conducted by Male and Kelly et al. [12]. This international benchmarking study aimed to investigate the methodologies, and tools and techniques used with the aim of distilling best practice, the output of which was a best practice manual.

The research undertaken by Fong et al. [5] outlined eleven performance metrics that may be used to benchmark value management. These include metrics such as; 'number of ideas generated / number of people involved' and 'actual savings / proposed savings.' However, although studies may be benchmarked using these metrics other factors such as the skill of the facilitator and the willingness of the project team will impact the outcome of any study and highlight complexities in making fair comparisons. This is partly recognised by Fong who states that some aspects are difficult to quantify such as teamwork, and creativity.

Fong et al. [5] further states that the continuous reviewing of VM processes will ensure the effectiveness of the method is improved. This paper investigates those VM/VE practices that are most effective and goes some way to address the pressures of time.

## **DISPARITY BETWEEN UK AND US VM WORKSHOP PRACTICE**

Due to the study focus being primarily in the UK and US it is important to briefly outline the significant differences between practices. Although VM initially came from the US it differs considerably through a number of aspects i.e. terms, team structure, timing, process and techniques. A comparative study of the VM methodology in the UK, US and Japan revealed that the VM approach is similar regardless of different terminology, team structures, techniques and VM intervention points. Differences are the culture, experience, and way of thinking in these countries (Pasquire and Maruo [13]).

The fundamental difference between the UK and US in terms of value management studies is the duration spent in a workshop which is a key issue addressed in this study. One UK survey respondent stated that; *"The UK work tends to be very abbreviated compared to what is more normally undertaken in the US."* Although it is suggested that the preferable method for this respondent is to work to US practice.

In the UK, it is the norm to have only a one day workshop. In the US, this is not the case where time spent ranges from three to five days providing the opportunity for a more in-depth study. Table 1 outlines four inconsistencies of workshop practice between the UK and the US relevant to this study.

**Table 1. Characteristics of Workshop Practice in the UK and US**

<i>Workshop Characteristics</i>	<i>UK</i>	<i>US</i>
Workshop Duration	1 day	3-5 days
Project Team / Independent Team	Project team	Independent team
Working Practices During Study	Team work	Team work and individual
Inclusion of Job Plan Presentation Phase	N/A	Yes

One major difference between UK and US practice is how the workshop time is utilised during the study. UK practices generally have everyone working together as a team throughout the study whereas in the US a certain period of time is devoted to individual working during the development stage of the job plan.

The following comment made in a survey response with regards to UK and US practice is:

*I wonder if there is in fact a UK way and a US way as individuals practice their own ways within each “jurisdiction.” I find that my approach varies with the project situation... accordingly, I always tailor my agenda to suit circumstances.*

## **PILOT STUDY: INTERNATIONAL SURVEY**

A pilot study was conducted to provide a ‘test-run’ for the planned full scale study following the feedback at the international SAVE (Society of American Value Engineers) 2004 Conference. The pilot study consisted of an international survey that was carried out via email. The survey involved semi-structured questions to determine common workshop practice from each of the respondents. This was provided through either a comprehensive explanation of workshop practice, the provision of a number of agendas, or both. Further clarification was obtained on minor areas unfamiliar to UK practice. Information regarding the data obtained from practitioners is tabulated in Table 2 (next page). For confidentiality reasons, each consultant has been identified by a letter and a number. The number indicates the geographical location; (1) UK, (2) US, and (3) Other.

From the total sample survey of thirty-seven, fourteen practitioners were contacted in the UK with nine responses received, and twenty were contacted in the US resulting in eleven responses. Two out of three responses were obtained from practitioners in other countries.

There are very few papers on tools used in studies which was highlighted by Ellegant and Bushman in the SAVE 2001 conference. In this survey it was evident that practitioners were reluctant to share information on the tools that they use and instead opted for an explanation of what they did rather than how they did it i.e. conduct a creative session as opposed to the tool ‘blast-create-refine’ which adequately identifies the tool used. Only eight respondents from twenty-two outlined the tools used, and six had offered information on agendas and other items but had not listed their tools.

Respondents were asked to provide any helpful comments to the study and many did as indicated in Table 2 although most used this to communicate their workshop practice in preference to the provision of an indicative agenda.

The section 'Other' in Table 2 was the provision of extra information which may have included a sample from a pre-workshop information pack, a slide show sent to clients explaining the process, or an outline of the study procedures.

### THE ISSUE OF TIME

US practitioner; Lenzer [11] highlights the pressure for workshops to be shorter and more streamlined which is also the case in the UK and highlighted at the same conference by Kelly and Male [9] who state that; *'the pressure... has led to research into techniques which are more efficient in seeking value goals*

*at key stages in the process.'* In a previous research study on workshop effectiveness conducted by the authors, interviewees were asked an open question about anything they would like to add about the use of workshop techniques, four out of thirteen project team members specifically mentioned workshop duration. This may have been due to the team being comprised of senior practice and company personnel whose time is limited and highly valued. Only two project participants had been involved in previous workshops of any sort and so the time spent in workshops was generally unfamiliar. The comments relating to time spent in workshops were:

- *'It should be more concise, there was a lot of wasted time.'*
- *'The workshop could be streamlined, a half day workshop would be ideal.'*
- *'It is a problem for a lot of people to have a whole day workshop. I think it's worth it.'*
- *'I would have preferred a way of doing it in shorter bursts; a whole day is disruptive to work in the office. For instance, we could have had 4-5 half days instead of three full days.'*
- 

**Table 2. The Data Set (Source: Analysis of Survey Data)**

Country	Practitioner	Agenda	Tools	Comments	Other
UK (1)	A1	X	X	X	✓
	B1	✓	✓	✓	X
	C1	✓	✓	✓	✓
	D1	✓	X	✓	✓
	E1	X	X	✓	✓
	F1	X	X	✓	X
	G1	X	X	✓	X
	H1	X	✓	✓	✓
	I1	✓	✓	✓	✓
US (2)	A2	✓	X	✓	X
	B2	✓	✓	✓	
	C2	✓	✓	✓	
	D2	✓	X	✓	X
	E2	✓	✓	✓	
	F2	✓	✓	X	X
	G2	✓	X	✓	X
	H2	✓	✓	✓	X
	I2	X	X	✓	X
	J2	✓	X	✓	✓
Other (3)	K2	X	X	✓	X
	A3	✓	X	✓	X
	B3	✓	X	✓	X

## **WORKSHOP DURATION AND ACTIVITIES**

Respondents reacted to the question; ‘Is one day enough?’ by making the following statements, the first a question; *“How long should a VE study take if the goal is to maximise value?”* (E1). This question encompasses what this study aims to do. “No” (D1) as opposed to another who stated that; *“the argument is clearly on the side of shorter VE/VM studies but plenty of them!”* (I1).

*“One day on its own is not enough to do any serious work”* (F1). This respondent highlighted that a one day workshop would work well if accompanied by other planned workshops including time for preparation and follow up. This was also the case for a respondent (D1) who runs workshops as a series of one day sessions. Another respondent stated that; *“Having time is crucial to the success of the process, so I would definitely not advocate one-day workshops except when the subject is very well defined.”* Instead this respondent conducts 1-3 half day workshops over a period of one month (A3).

*“I never do a VE workshop that is less than three days.”* This respondent also highlights that they have only had one of these workshops in the last three years; all other workshops span 4.5 to 5 days. In a case where the client wants a workshop of less than a three-day duration, this practitioner will advise them to go find another consultant. *“I get satisfaction from a client receiving excellent results. In all cases results are sacrificed for workshops less than three days”* (H2). Two respondents outlined that their studies normally ranged between three to five days, factors influencing this were identified as being what the customer is accustomed to, budget restrictions and the size of the project (C2 & J2). *“Most of my work involves 5 day workshops”* (G2). From these comments, it is clear that most US practitioners conduct a 3-5 day study; however, one US practitioner mentioned that they dealt with everything from a one to a five-day workshop (I2) highlighting the variation between practitioners.

A response in line with the US approach was that from a UK respondent who highlighted that they have 4.5 day approach which includes a half day strategic briefing, a full day team briefing and a three day workshop (C1).

There is evidently an issue with senior involvement in the workshop studies brought to light from the following comments.

*My experience has been that one day is certainly long enough to achieve significant benefits – obviously the more time, the more can be achieved. However it is virtually impossible to get the right people together for more than one day and I think it is more important to have the right people for one day than the wrong people for 5 days* (B1).

The availability of senior team members was also pointed out by three other respondents. *“The idea that senior people can commit three days or a week to a workshop is just not compatible with the demands on senior management”* (I1). This respondent prefers to use a staged approach with *‘bite size VM activity.’* One stated that if they are unable to be involved throughout the workshop then it would be of most benefit to have them present at the initial meeting and at the

presentation stage (G1). The other was disappointed by the implementation rate of proposals which was caused by the project team seldom being involved in the workshop and therefore did not buy-in (A3).

One respondent stated that their preference was for a three day study that did not include the site visit and presentation phase where the latter is conducted at a later stage, although it was highlighted that even some three day studies include both of these. In terms of timings, it was pointed out that a five day study is generally a four day study with the presentation at the beginning of the fifth day although there is the option to present late afternoon which is regarded as being riskier in terms of getting the right audience (J2).

From the exploration of workshop durations, only one US consultant stated that they will do anything between one and five days, where the norm seems to be a three or a five day study. In the UK, respondents that spent more than one day in workshop activity tended to conduct them as a series and not as a continuous session.

## THE JOB PLAN

The development stage of the job plan seems to be the key area where most time is spent in the US which was supported by the survey findings (Tables 3 and 4) and which is not always incorporated into the UK agenda due to time limitations or the expectation that this stage is ongoing.

The following responses are from UK practitioners who only perform the basics of the development phase within the workshop. *“In over 10 years of facilitating workshops I have only facilitated one 3-day workshop when it was possible to carry out the development work during the workshop”* (B1). This is the same for another practitioner who highlights that the basics of the development stage are identified during the workshop to be taken away by specific team members to work on for an agreed period of time (G1). Another respondent said the following;

*There is the expectation that the development phase will continue (not just verification) after the workshop. By comparison, some clients seem to view the VE work as over once the workshop is finished. Personally, I see the workshop as only a part of the continuing process (B3).*

In the US, this is also the case with respect to two of the responses that highlighted the following practices; *“In the one-day effort we may only assign champions to ideas which are developed outside the scope of the one-day effort”* (I2). Another US respondent outlined that the team continue the development phase outside of the workshop over several days or weeks depending on the scheduled date for presentation (B2).

One of the arguments for a continuous 5-day study was made by a UK practitioner who highlighted that the creative flow is broken up when workshops are split over a series of weeks (G1). This seems to be dependent on the individual practitioner's views as a US practitioner performs studies that are broken up over a weekend following the information phase and then another week's break is given after the creativity and evaluation phases to research the surviving ideas. By doing it this way it is suggested that the team do not have to work under the pressure of the

workshop time constraints and instead have more time to reflect.

A US respondent highlighted that the real value from a study comes from the initial generation of the idea (A2). It is therefore suggested that if the idea is there then it does not need to be fully developed during the workshop if time is limited. This respondent states that; *“if a study is cut back, the most logical place to cut is the development.”* The reason for this is identified through the following statement; *“No A/E firm can take the recommendations at face value and automatically paste them into their design as final.”* It is highlighted that the presentation phase cannot be cut in a workshop as the idea has to be communicated to the client and design team. This is an interesting

point which does not need to be considered in UK practice as there is not a requirement for this phase as usually the client or project sponsor will be present throughout the course of the study. One respondent outlined that most effort goes into pre-meeting which suggests that the information stage is regarded as being the most important (A1).

For some, the time spent on development varies. Fac-

**Table 3. Job Plan Phase as Percentage of Total Workshop Duration  
(Source: Analysis of Survey Data)**

Country	Practitioner	TOTAL DAYS	% OF TOTAL WORKSHOP DURATION					
			INFO*	CREA	EVAL	DEV	PRES	
UK (1)	B1	0.5	50	16.7	16.7	16.7	-	
		1	50	15	20	15	-	
	D1	4	19	13	30	38	-	
	C1	4.5	55.5	6	6	33.3	-	
	I1	1	50	25	12.5	12.5	-	
US (2)	A2	2	50	12.5	12.5	12.5	12.5	
		5	30	20	10	30	10	
		5	30	10	10	40	10	
	B2	6.5	46	15.4	15.4	15.4	7.8	
		C2	3	25	8.3	16.7	50	-
			3	16.7	16.7	16.7	50	-
			4	25	6.2	6.2	56.2	6.2
			4	25	6.2	6.2	56.2	6.2
			5	15	5	10	60	10
			5	20	20	10	30	20
			5	20	5	15	50	10
	5	15	5	10	60	10		
	D2	3.5	44	14	14	14	14	
	E2	5	40	10	10	20	20	
	F2	3	16.7	16.7	16.7	33.3	16.7	
	G2	2.5	20	10	10	40	20	
		3	33.3	16.7	8.3	33.3	8.3	
		4	25	12.5	6	44	12.5	
		4	25	12.5	6.2	31.2	25	
		5	25	10	5	40	20	
H2	4	37.5	12.5	25	12.5	12.5		
J2	3	33.3	16.7	16.7	16.7	16.7		
	5	40	10	10	30	10		

tors identified that influence the development phase are the total duration of the workshop, and the complexity and understanding of the project. For instance, a respondent from the US highlighted that one to three days may be spent in a five-day workshop depending on these factors (I2).

One practitioner ensures there are ‘check-back meetings’ if the participants are working individually or in subteams to ensure everyone is kept in the loop during the development of proposals (J2). This was also the case for a UK respondent who outlined that people are assigned specific tasks during the workshop or outside it (G1).

**Table 4. Job Plan Phases: Range and Mean (Source: Analysis of Survey Data)**

<i>Job Plan Phase</i>	<i>Range (%)</i>	<i>Mean (%)</i>
Information	15-56	32
Creativity	5-20	12
Evaluation	5-30	13
Development	12-60	34
Presentation	6-20	13

It is evident from Tables 3 and 4 that the time spent on each stage of the Job Plan varies considerably. The mean scores indicate that most time is spent on the information and development stages where almost three times as much time is spent on these phases than on creativity, evaluation and presentation. In an International study conducted by Fong and Lam [4] to determine what value practitioners thought of the value methodology it was discovered that 96% considered that VM enhanced creativity and yet very little time is spent on this phase evident in Tables 3 and 4 although it is acknowledged that creativity is not possible without the information phase.

It is important to note that one of the limitations of the study is that the point at which VM/VE was applied in the project life cycle was not investigated and that this may have had an impact on the time spent on each phase.

## TOOLS AND THEIR RELATIONSHIPS

Experience through observation at various workshops based in the UK has highlighted that there are logical linkages between the value management tools employed in a workshop. This makes the case for a full day workshop in the UK construction industry to ensure that all the necessary tools are taken advantage of to ensure a beneficial outcome. A previous project which involved a succession of three value management workshops with another to follow once the project is complete highlighted the importance of the relationship of tools and how the systematic and logical VM process works. The following comments were made during post workshop interviews with individual members of the project team:

- *“It is important to go through the whole exercise and go to all the workshops.”*
- *“The techniques are so logical and work well; I can see the practicality of it. I like VM because it’s so clear and logical with clear answers, it doesn’t involve a lot of theory and people can see what’s happening.”*
- *“There was a lack of appreciation of what the workshop techniques were. We don’t use these on a day to day basis. It would have helped if there had been a pre-workshop workshop or pre-workshop material including a summary. I didn’t know what we were trying*

*to achieve with each technique until it was complete.”*

This last comment highlights why linkages should be explained at the start of the workshop so everyone in the team understands where the workshop is headed. Fong [3] outlines the importance of learning for participants involved in a study which is described as an ongoing cycle of learning and reflection. It is suggested that team learning conditions play a big part in the success of team learning. Fong [3] also outlines that few study participants have knowledge on what value management is or what is to be expected throughout the course of a workshop.

Kelly and Male [10] outline that the first stage of a workshop is for the team to undertake an information stage and begin by generating the issues. There are three sources of information at the initial study stages that the team require, these are; the exploration of the client’s values, an analysis of the project issues, and to derive the function of the project. The sequence of tools used in the creativity, evaluation and development stages do not impact the workshop whereas the information stage is key to the team’s understanding and therefore the tools should be in a sequence that they can relate to and build upon to enhance team learning.

There are currently many tools and techniques available to improve business practices (Lenzer [11]). This presents the case for ensuring that the right tools are used that link together to ensure the clients business objectives are achieved in the workshop study. Possible sequences of tools used in the information phase are shown in Table 5. Observation in workshops has shown that it is important to determine the values of the client to set the scene and to ensure a common understanding of these amongst the team before generating the project functions which must be in line with the client’s values and the project objectives. The breakdown in Table 5 shows that this leaves three sequences for the facilitator to choose from when conducting the study. The project issues are those that have to be dealt with regardless of what the project functions are however it may be more beneficial to commence with the workshop issues to get any negativity out in the open before focussing on the aims and purpose of the project.

**Table 5. Sequences of Tools in Information Phase**

Issues	Issues	Values	Values	Functions	Functions
Functions	Values	Issues	Functions	Issues	Values
Values	Functions	Functions	Issues	Values	Issues
X	✓	✓	✓	X	X

Green [6] states that there is a need for more theoretically driven methodologies countering the perception that current practice involves value management associations outlining best practice and certifying only those that abide by their guidelines. This theoretical basis is an interesting concept and Green [6] presents the case that many practitioners do not feel the requirement for a theory that underpins the VM process and instead use tools and techniques that they are familiar with and that have been proven to work in workshop situations. Green cites Flood and Jackson (1991) who speculate that this reliance may be preventing better working practice from using an approach based on theory. It is suggested that without a theoretical base, VM practice will

continue to rely on tools and techniques passed from one practitioner to another. Practitioners recognised the importance of theory; however when it came to application practitioners reverted to their usual methods.

There are many tools and techniques associated with value management. It is clear from the work of Green [6] that practitioners have their own familiar toolbox and are unlikely to look at other practices when their own practice is serving them well. In past SAVE conferences other tools have been presented to promote creativity in workshops. These include Kaufman and McCuish's [8] brainstorming tools such as; 'The Carousel,' and 'Free Wheeling.' Ellegant and Bushman's [2] tools that include; 'Circus Poster,' 'Purpose Talk,' and 'Focused Conversation.' Other tools are; 'VM Circles / Spirals' (Phillips [14]), and 'SSM' (Green [6]). The number of tools in circulation is vast and therefore the tools listed by respondents in the survey have not been shown due to a high degree of variation. Instead, the focus has been directed on FAST which was both positively and negatively referred to in the survey responses received.

Bolton [1] stated that function analysis was key to success in a workshop and he always constructs a FAST diagram. However, the use of FAST has not been found to be consistent in the UK. A study to improve VM client satisfaction through an investigation with VM clients conducted by Woodhead and Downs [16] discovered that there was a great deal of apprehension when using FAST diagramming. This proposed a contradiction between the requirement for flexibility through the use of VM and a well defined methodology. Pasquire and Maruo [13] cite Norton and McElligott (1995) who suggest that the use of FAST may provide more benefit in the early stages of a project but not so much in the construction stages. It is also highlighted that FAST diagramming requires experience and training on the part of the facilitator to ensure it accurately depicts the function of the project. When time is constrained a FAST diagram is likely to be abandoned.

A survey statement which supports the requirement for time and an experienced facilitator is; "*In my experience, it is better to develop a FAST diagram outside the workshop, as it is a major 'turn off' if time is spent on it within a workshop.*" This respondent prepares and then presents the FAST to the project team to determine if it is a good representation of the project. This is the preferred method due to the lack of knowledge of the project participants of what it is all about. It is also highlighted that FAST diagramming isn't always used in VM /VE workshops (G1). Ellegant and Bushman [2] state that; "*easing participants into function thinking is another task which can be difficult, even for skilled Value study facilitators with years of experience.*" This is supported in Fong and Lam's [4] study that discovered 38% of consultants found it difficult to perform function analysis. They highlighted that the mixed approach to the adoption of FAST presents problems and creates confusion amongst clients who are told from one practitioner that FAST is a necessity of VM and then hear quite the opposite from another practitioner.

The other view on function analysis offered by a UK respondent who commonly uses brainstorming and FAST are that; "*FAST has proven vital for identifying the purpose of a service as well as identifying functions and costs.*" This practitioner does a lot of work with local authorities and finds FAST very useful for resolving debate on the purposes of services. Another practitioner in the US highlighted that most time is spent on function analysis (H2). A UK respondent

(I1) uses a 'window pane' to cluster functions in each pane to support the construction of a FAST diagram which is considered through their experience as a simple, step by step approach to make FAST easier to use.

## **STREAMLINING THE WORKSHOPS**

The collation of comments made from the respondents resulted in some ideas for streamlining workshops which have been outlined.

A proven successful method to ensure pre-workshop preparation by all workshop participants which may be adopted by others as good practice is the requirement for what has been termed as 'issues memos' (C2). This involves the workshop team reviewing the project documents prior to the workshop with the possible generation of ideas stemming from this process. Another proven successful tool referred to as the 'window pane' (I1) may be used as an intermediate step to an easier method of constructing the FAST diagram.

Although information may be distributed pre-workshop there is often little time for participants to review this information which is not necessarily regarded as a priority. Therefore there may be scope for the use of process diagrams to illustrate to the study participants the path that the workshop is going to take to ensure an understanding of where the workshop is headed. This display would highlight linkages of tools and act as a reference tool for the team. The illustration of each stage would support the study agenda and the teams understanding as well as prevent unwanted screeds of text that may be provided by facilitators prior to a workshop. This would address any sceptical participants who may be unfamiliar and untrusting of the VM methodology who are often identified through their questioning on where the process is leading.

Another method of streamlining workshop(s) is to encourage the 'development take-away' and spend more time focussing on creativity to bring out more good ideas for adding value to the project.

Therefore the conditions under which a full day workshop involving the project team is most likely to be successful is suggested as a skilled and experienced facilitator who has distributed some pre-workshop information based upon interviews, document review, etc. to encourage participants to begin to think of project issues and facts. During the workshop, to provide a simple overview illustrated by a process diagram of the workshop path to negate any team confusion. Choose an effective sequence of tools in the information phase that highlights a steady progression of workshop information and development to the team. To focus on the creativity phase more so than the evaluation and development phases and to ensure a clear action plan that outlines further stages of the development phase to be conducted outside the workshop.

## **FEEDBACK AND FURTHER RESEARCH STUDY**

The presentation of results at the SAVE 2004 conference and response to the findings from the participants involved in the pilot study resulted in a number of comments to be addressed in any further study. In addressing the comments made for the next stage of research the following

questions will be incorporated for recipients to answer:

- What is the project stage at which value management intervenes? This may have an impact on how much time is spent on each stage of the job plan.
- What is the type of client organisation i.e. public / private sector? This should allow the understanding of the clients business needs.
- How many projects are running at any one time? It may be that the client organisation has little time to conduct lengthy studies for each and every project running.
- What is the complexity of the project that VM is addressing?
- In addition, another suggested area for exploration is:
- To compare the US approach with the UK approach by ‘peer review’ or ‘design review’ by an independent team.

## CONCLUSIONS

There have been many studies conducted on comparisons of the VM methodology across the globe, however little has been done on comparisons of VM studies themselves and although there are obvious differences between practices in the UK and US it appears that the majority of practitioners have their own preferred methods and ways of working spanning over varying workshop durations.

It is evident that there are logical linkages of VM tools where the sequence of tools used is most important at the information phase to extrapolate the client’s values, the project issues and overriding function of the project in a manner which makes sense to the team. In terms of tools, there were mixed views on whether FAST was worthwhile which brings to light that there is still (following on from Fong and Lam’s study) a great deal of uncertainty on its usefulness amongst practitioners.

The research revealed that there are pressures in both the US and the UK in ensuring senior involvement. This is either during the workshop or in the presentation phase which is important to ensure that the ideas are ‘sold’ to the client and decisions are made for implementation.

A particularly surprising aspect of this research is the little time dedicated to the creativity phase; an average of 12% of workshop duration.

In respect of overall time for the workshop it seems likely that UK construction studies are likely to continue to be one day with the design team ‘team of record’ and appropriate client representatives. Other models of a programme of short workshops appears to be the preferred model in manufacturing. In the US, longer workshops with independent teams are the common method. In either case there is a strong argument for a longer creativity phase.

Overall, workshop success will depend on the amount of time the client or workshop commissioner wants to dedicate and therefore an explanation of the requirement for each stage and the outcomes expected for each may be one way of demonstrating the requirement for the minimum of a one-day study as a continuous or split session. The next stage of research will involve a full scale study of all registered VM practitioners taking into account both the feedback from the

international conference and the pilot study participants' responses to the research findings which are outlined below.

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