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26th Annual General Meeting on 14 December 2021

This is to announce that the HKIVM's 26th Annual General Meeting and Dinner will be held on:

Date: **14 December 2021 (Tuesday)**

Time: **7:00 – 9:30 pm**

Venue: In Kowloon to be confirmed after confirmation of the number of attendees

Fee: HK\$150 per head for members, HK\$100 for new members who joined HKIVM in 2021 (payable at the event)

Agenda:

1. President's Report and Approval
2. Treasurer's Report and Approval
3. Election of Office Bearers
4. Appointment of Accountant
5. Any other business

Please register your interest to join by sending an email to our Secretary Ir Lillian CHAN at secretary@hkivm.org by **1 December 2021**.

Invitation to become Council Members

We need new blood to join our Council. Members wishing to join the Council and contribute to the Institute please submit your name, membership number and contact details to our Secretary Ir Lillian CHAN at secretary@hkivm.org by **1 December 2021**.

Please find two full members of HKIVM to nominate you. If you cannot find enough members, our Council Members may consider to nominate you after reviewing your portfolio.

Lunch-hour **Free** Online Seminar on Value Management in Construction Projects along the Belt and Road Regions on 14 December 2021

Speaker: Dr. Xiaoyi WEI, BSc, PhD; Membership Director, HKIVM
Date: **14 December 2021 (Tuesday)**
Event time: **12:45 – 14:00 pm (lunch-hour)**
Language: English
Event Fee: **Free of Charge**
Organizer: Hong Kong Institute of Value Management (HKIVM)
CPD Hours: 1.25 Hour
Closing date for enrolment: **11 December 2021 (Saturday)**

Please see the attached promotional flyer, and HKIVM [webpage](#)

Please enroll by clicking [the registration form](#) (successful registration will be notified by email).

Exploring Value Management Practices in Regions along the Belt and Road

With the consent of SAVE, Dr. Xiaoyi WEI and Sr Dr. Mei-yung LEUNG would like to share their paper on the captioned and presented at the 2021 SAVE Virtual Value Summit held in June 2021.

Please see the paper attached.

Registered Value Management Programme (12 hours) 5, 12, 19 & 26 **Jan** 2022 (**Wednesday** evenings)

Event still open for enrolment

This will be the fourth time to have this well received programme organized. This programme is for people who would like to adopt value management methodology in their daily work and life.

Jointly organized by: HKIVM, HKIS and HKICM

Event Time: 5, 12, 19 & 26 January 2022 (7:00 pm – 10:00 pm)

Venue: Surveyors Learning Centre of HKIS at Wing On Centre, Sheung Wan

Great value for money: HK\$280 / Session (or all 4 Sessions for HK\$1,000)

Pleas invite your colleagues and friends to join.

Closing date for enrolment: 3 December 2021

Please read more details at <https://hkivm.org/registered-value-management-vm-programme-12-hours-3/>

and register on-line at

<https://docs.google.com/forms/d/e/1FAIpQLSfgMkcukvF1uwdfEBEYxpZ4YgutIVo4umiN78wbBUGzgBpSmg/viewform>

Value Management (VM) Module I Training Course for Construction Professionals (28 hours) 5, 12 & 19 Feb & 5 Mar 2022 (Saturday daytime)

Event still open for enrolment

This training course has not been organized for a long time. This is a **golden chance** for those who have attended the Registered VM Training Programme (12 hours) organized by the HKIVM and are inspired to become VM co-facilitators leading the path to become listed HKIVM facilitators.

Event Time: 5 & 19 February 2022 (09:00-18:00) and 12 February & 5 March 2022 (13:30-21:30)
(26 February changed to 5 March)

Venue: To be confirmed

Instructor: Sr Dr. Mei-yung Leung

Great value for money: HK\$7,000 (excluding lunch & refreshment)

Language: English

Closing date for enrolment: **extended to 1 January 2022 (Saturday)**

Please read more details at <https://hkivm.org/value-management-vm-module-i-training-course-for-construction-professionals/>

and register on-line at

https://docs.google.com/forms/d/e/1FAIpQLSdy9i1oETgxs3mqogEh0LBP8tfQdigNV7vPIjtc_vObOkUKsQ/viewform

Useful Reference Materials

Further to the note on Value Factory Virtual Event on 4 – 6 October 2021 in the last Newsletter, the following are some links to the event website and video presentations for your reference:

Event website: <https://www.eventleaf.com/e/ValueFactory-Oct2021#ss>

Videos (Click or Ctrl-click):

- [About Professional Development Units for SAVE International by Istvan Tarjani](#)
- [Better Delivery Systems through Value Management in Malaysia by Mohammed Mazlan Che Mat](#)
- [How to get Consensus using VM by Lillian Chan](#)
- [North Okanagan Wastewater Recovery Project – Defining and Affordable Wastewater Solution using VE by David Wilson](#)
- [Value Management for Decision Makers by Mike Graham](#)



Value Management in Construction Projects along the B&R Regions

Since the Belt and Road (B&R) initiative has been proposed in 2013, 140 countries and 31 international institutes have joined this attractive strategy. It encourages international cooperation in building mega-scale infrastructure projects in targeting regions, which creates a highly dynamic and competitive environment for their construction industries. It is not uncommon that various difficulties (e.g., unclear clients' expectations and project goals, poor team coordination, destructive conflict, etc.) happens in construction projects along the B&R regions due to multiple-stakeholders (both national and international) having different backgrounds. Illogical traditional team decision-making methodologies are inefficient to resolve those problems and consequently result in project failure (e.g., dissatisfaction, low project performance, etc.). Therefore, it is necessary to find out effective decision-making methodologies for managing complicated mega-projects in regions along the B&R.

Value Management (VM) is an organized team decision-making methodology to achieve the best value of the project with a logical and step-by-step job plan. It has been used in several developed regions (e.g., Singapore, Hong Kong, Netherland, Austria, South Korea, etc.) and developing regions (e.g., Malaysia, Iran, Saudi Arabia, etc.) along the B&R. However, the majority of countries along the B&R are still lacking the VM application due to various difficulties such as lack the absence of VM awareness, insufficient government support, dearth of VM experts, and so on. A seminar will be conducted by Dr. Xiaoyi WEI to share her insight about the application of VM and traditional team decision-making in different regions along the B&R and the best VM practice for maximizing project outcomes in their construction projects.

- Event : Online seminar
- Dates : 14 December 2021 (Tuesday)
- Event Time : 12:45 pm – 14:00 pm (lunch-hour)
- Language : English
- Organizer : Hong Kong Institute of Value Management (HKIVM)
- Fees : Free of charge
- Enrolment : Please enroll by clicking the [registration form](#) (successful registration will be notified by email).

***Closing date for enrolment: 11 December 2021 (Saturday)**

Attendance Certificate will be given upon the completion of the **event**.



Dr. Xiaoyi WEI

Dr. Xiaoyi WEI joined HKIVM as a member in April 2019 and currently is the membership director. During her Ph.D. period (2018-2021), she focused on the topic of value management in construction projects along the Belt and Road Regions. In 2019, She won the “University Challenge Award” issued by the SAVE international. Before her Ph.D. career, she was an auditor in charge of auditing budget and settlement of construction projects.

EXPLORING VALUE MANAGEMENT PRACTICES IN REGIONS ALONG THE BELT AND ROAD

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Abstract

Value management (VM) as a decision-making approach organized by multi-disciplinary members may be used to achieve the best value of the project and satisfy the requirement of the clients in the construction projects in the Belt and Road (B&R) regions. However, most of the developing countries along the B&R regions are still lack of VM knowledge during the complicated team decision-making process. This study proposes some insightful recommendations for promoting VM to the countries along the B&R regions. In order to investigate the current VM practices and the possible challenge factors influencing the VM application, face to face semi-interviews with VM and project management experts in different countries (including, Hong Kong, Malaysia, the US and Sri Lanka) were conducted. Through the qualitative analysis, some factors of VM application related to pre-workshop (objectives setting, process identification and stakeholder), workshop (information, analysis, creativity, evaluation, development and presentation) and recommendations (awareness improvement, VM education, senior support and standard application) were extracted. The comparison of the qualitative results between those four countries showed that the US practitioners had the most experience on VM implementation and innovative VM techniques application, whilst Hong Kong and Malaysia practitioners still had rooms to be improved. VM workshops were never arranged independently, while it was just used as a cost reduction tool in Sri Lanka. Practical recommendations were put forward, including organizing various VM seminars and training, offering VM courses in college education, gaining senior supports, using SAVE standards, and building close relationships among developed and developing regions along the B&R in order to gain advanced VM techniques and promote VM properly in the construction industry.

Keywords: Belt and Road, Hong Kong, Malaysia, Sri Lanka, Value Management

Introduction

The Belt and Road (B&R) initiative has been put forward in October 2013 when Chinese President Xi visited Kazakhstan and Indonesia. It has become a significant strategy with the intention to create a regional economic co-operation framework particularly among countries along the proposed B&R routes for benefits to all (HKTDC 2019). In fact, more and more government officials, academia and business communities have been attracted by this strategy (Yu, 2017). The B&R initiative is the combination of “The Silk Road Economic Belt” (mainly target central Asia and Europe) and “The 21st-Century Maritime Silk Road” (most target Southeast, South and North Asia). According to the official website of the B&R, 138 countries, up to January 2020, have been signed the cooperation agreement of the B&R initiative (Liu, 2020), including China (e.g., Mainland China, Hong Kong and Macau), Asia (e.g., Malaysia, Pakistan, Sri Lanka, Indonesia, Laos, etc.), Africa (e.g., Morocco, South Africa, Sudan, etc.), Europe (e.g., Russia, Poland, Hungary, Croatia, etc.), Oceania (e.g., New Zealand, Fiji, etc.), South America (e.g., Chile, Uruguay, etc.), North American (e.g., Panama, Costa Rica, etc.). The Belt & Road Initiative consists of policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bond, while infrastructure development plays a central role in it (NDRC et al., 2015; Huang, 2016).

Based on the B&R initiative, many mega international infrastructure projects have been designed and developed, such as ports (Gwadar port and Hambantota port), railways (China-Laos railway and Jakarta-Bandung high-speed railway) and bridges (Padma Bridge and Zemun-Borca Bridge) (Ministry of Commerce Public Services, 2020). Participants in the B&R projects involve various backgrounds, experiences and knowledge, which may induce challenges in communication, information sharing and

ideas creation and judgment and subsequently lead failure to achieve the expected value of the project (Ochieng and Price, 2010; Shahhosseini et al., 2017). To obtain the best value for the construction projects among multi-stakeholder along the B&R regions, VM may play a key role to facilitate complicated team decision-making. It supports participants to define the responsibilities clearly, specify ambiguities and misperceptions in the projects, and improve the relationships and communications among stakeholders (Harry, 2002). Meanwhile, experience has proven that VM can result in the cost-saving from 5% to 10% of the total cost in construction projects, while the performance can be greatly enhanced in terms of construction time, maintainability, aesthetics, and sustainability (Norton and Mcelligot 1995; Zhang et al. 2009). This paper aims to find out the current VM practices and challenges in the regions along the B&R.

International VM Application

VM was first proposed by Mr. Lawrence D. Miles in 1947 in the US as Value Analysis (VA) and was introduced to the construction industry 1963 (Dell' Isola, 1997). The Society of American Value Engineers (SAVE) has been established in 1959 in the US as a leading professional VM institution in the world. Through decades of development, VM has been spread widely in the world, especially in Japan, Australia, European countries, etc. (Leung, 2009). Among the regions along the B&R regions, VM has been adopted in Hong Kong, Singapore, Malaysia, and so on. In fact, the Hong Kong Institute of Value Management (HKIVM) and the Institute of Value Management Malaysia (IVMM) were established in 1995 and 2000 respectively by various professionals (e.g., architects, builders, engineers, surveyors, etc.). Nevertheless, VM is still a new concept in developing countries. There is no formal VM institutions and guidelines in most of the countries along the B&R regions like Sri Lanka, Pakistan, etc. at the moment (Kurnuasena and Rajagaloda, 2017, Shaikh et al., 2015).

The formal application requirements of VM have been designed in some B&R regions (e.g., VM for all projects with a total sum of over HK\$ 200 million and RM 50 million in Hong Kong and Malaysia respectively) (WTBC, 05/2002; EPU, 2009). Different regions have their particular culture and economic situations, which may cause differences in VM applications (e.g., workshop duration, number of team members, etc.) in real situations. Therefore, to improve the VM application along the B&R regions, it is necessary to understand the specific VM characteristics and difficulties in those areas.

VM Process

VM is an organized, systematic and logical decision-making process (Dell'Isola, 1997; Green, 1994). In general, pre-workshop activities need to be conducted before formal VM workshops in order to identify the objectives of the study, set the workshop arrangement, choose the participants of the workshop and so on (Kelly et al., 2004, Leung et al., 2013). Identifying specified objectives of VM before the workshop is essential for value study team members fully understanding the client's requirements and results in more specified project goals (Leung et al., 2003). The value study team needs to be assembled as a heterogeneous team and the team members should be carefully identified based on their expertise and experience to fully cover the project issues and objectives. (Leung and Wong, 2002; SAVE, 2020). To ensure the participation of team members and facilitate effective team discussion, a well-organized work schedule should be established (Leung et al., 2013).

The carefully crafted and thoroughly tested job-plan is a critical element of VM workshop which helps value study teams overcome human limitations to make reasonable decisions (Chen and Liao, 2010). Normally, the systematic job-plan involves six components, namely, information, function analysis, creativity, evaluation, development and presentation (SAVE, 2020). In the commencement of the VM workshop, participants share all project-related information (i.e., specification, drawings, documents, etc.) and express project-related opinions to understand the project scope, clarify objectives, and specify participants' needs (Liu and Liang, 2002). After that, value study team analysis functions based on the shared information to find out both basic and supporting functions for improving overall project values. In this phase, the mission and functions are identified, the logical relationships between the functions are revealed, and the cost associate with various functions are analysed by function analysis techniques such as verb-noun phrases, how-why logic, Function Analysis Systematic Techniques (FAST), value index, etc. (Leung et al., 2013; Spaulding et al., 2005). A number of function-based ideas were then generated by different creativity techniques (i.e., brainstorming, six hats, etc.) in the creativity phase. Every idea even non-sense or crazy ideas are valuable in this phase,

because they could help team members to stimulate creative thinking (Green, 1994). After ideas generation, the number of ideas could be reduced and the best ideas are selected by evaluation tools such as voting, scoring, paired comparison and so on (SAVE, 2020). The detailed proposals which may include detailed drawings, cost estimates and action plans are developed for the best ideas in the development phase (Green, 1994). In the presentation phase, the value study team members need to present their innovative VM ideas and possible VM proposals to the project team in order to gain approval for implementation (SAVE, 2020).

Research Methodology

To investigate the current VM practices and the factors influencing the VM application in the regions along the B&R, face to face semi-interviews were conducted to construction professionals, including Hong Kong, Malaysia and Sri Lanka. As VM has been adopted in the US for over 70 years, an additional interview was also conducted to an American VM expert who has wide experience in VM facilitation, in order to understand the fundamental VM standard. The background information of the respondents is shown in Table 1. The US respondent has the most VM facilitation experience in comparison with the other three interviewees from the B&R regions, while the Sri Lankan interviewee has the least. In addition to Sri Lanka respondents, the remaining three respondents (Hong Kong, the US and Malaysia) are qualified VM facilitators in their local VM institution.

Table 1 The Background Information of the Respondents

Respondents	Regions along the B&R			
	US	Hong Kong	Malaysia	Sri Lanka
Professional background	Architect	QS	QS	Architect
VM institution	SAVE	HKIVM	IVMM	None
The times that facilitate VM workshops	Over 600 times	5-10 times	Over 70 times	1-5 times
Whether a qualified VM facilitator	Yes	Yes	Yes	No

Note: QS- Quantity Surveyor.

All qualitative data were collected by immediate note-taking during the discussion process in order to ensure the reliability of the data (Leung and Chan, 2012). The data was double-checked via voice recording and analyzed by qualitative software *NVivo 12*. In the end, the keywords and phrases of the qualitative data were summarized, coded and outlined.

Results and Discussion

Comparison of VM practices

The purpose of the pre-workshop is to plan and organize the VM study (SAVE, 2020). Three factors were extracted in the pre-workshop phase, including objective setting, process identification and stakeholder (see Table 2).

VM is a method of helping the client to better achieve their goals (Connaughton et al., 1996; Male et al., 1998). Respondents from Hong Kong, Malaysia and the US indicated that the identification of VM objective was based on the requirements of the client, while the objective of VM in Sri Lanka was mainly for cost reduction (Sri Lanka interviewee). In Sri Lanka, they always mixed all phases together, because VM was just a minor part of the project management workshop and the stakeholders actually did not want to spend too much time on it. VM facilitators in Hong Kong and Malaysia normally discussed with their clients for the workshop arrangement in advance, while the VM process in the US straightly "followed the six-step job plan in the SAVE Standard" (the US interviewee). The US participants did not need to spend extra time on the discussion of the job plan in the pre-workshop meeting due to the mature VM system.

The VM team is a multi-disciplinary group involving experienced professionals (e.g., structural engineer, architect, etc.) and project stakeholders (e.g., project owner, user, etc.) (SAVE, 2020). The person invited in VM workshops should be decided by the client in Hong Kong and Malaysia. However, the project manager had to choose VM team members due to no qualified VM facilitators in Sri Lanka. The participants were mainly client and consultants (i.e., architect, structural engineer, and surveyor,

etc.) from different disciplines for all four countries, while other interested parties such as community and government were also invited to the workshops in HK, the US, and Malaysia.

Table 2 Summary of Pre-workshop Items

Factors	Description
Objective setting	
Client's need	The objective was identified based on <i>the client's needs</i> in HK, MA, and the US.
Cost duction	The objective of VM was <i>cost reduction</i> in SL.
Process identification	
Standard	The VM process in the US followed the six-step job plan in the <i>SAVE Standard</i> .
Discussion	The VM process was <i>discussed before the workshop</i> in HK and MA.
Mix-together	In SL, all VM phases <i>were mixed</i> together.
Stakeholder	
Selection	The <i>client chose the team members</i> in HK and MA, but the <i>project manager was the one who selects the team members</i> in SL.
Sample	The stakeholders in the VM workshop were <i>client and consultants in all B&R regions and the US</i> . Besides, other interested parties, such as <i>community and government were also invited in all of the countries, except SL</i> .

Note: HK – Hong Kong; MA – Malaysia; SL – Sri Lanka and US – United States.

The typical VM process is a six-phase job plan (Bowen et al., 2010; SAVE, 2020), but VM techniques may be various in different regions (see Table 3). In the information phase, "each workshop participant contributed different information and the project managers need to record all the information in Sri Lanka" (Sri Lanka interviewee), while participants in Hong Kong shared the detailed latest information with other workshop teammates" (Hong Kong interviewee). The Function analysis phase is a key step during the VM process in Hong Kong, Malaysia and the US, while Sri Lanka normally ignores this phase. Function identification and/or FAST diagram for understanding the relationships among the functions logically were applied in HK, MA and US. (Spaulding, 2005).

All the respondents indicated that the quantity of ideas was emphasized in the creativity phase (say, 200-300 ideas in Malaysia). In Hong Kong Malaysia and the US, no idea was evaluated in this section. On the contrary, participants in Sri Lanka could judge and delete ideas at any time when someone disagreed with them. The selected ideas were always simply based on the agreement of the participants in Sri Lanka, while some techniques such as scoring, evaluation matrix, champion methods were used in other regions (Hong Kong, Malaysia and the US). Proposals for the selected ideas were developed in Hong Kong, Malaysia and the US in order to enable the project team to make decisions for implementation (Lee et al., 2009). Unlike the other three regions, "there was no specific development phase in Sri Lanka". They did the presentation after the evaluation phase (Sri Lanka interviewee).

In the end, a presentation is needed to introduce or summarize outstanding ideas to the client (Male et al., 1998; SAVE, 2020). Normally, VM facilitators are more skillful in presenting and familiar with the VM process among the VM team members. In Hong Kong, each team member presented their own ideas, but the VM study team would choose a team member to present the ideas when the time was limit. In Malaysia and the US, VM facilitators were presenters in the presentation whereas the project manager should take this responsibility in Sri Lanka.

Some advanced techniques were applied in the VM process in the US, such as function tree, function cost model and quality model. However, Hong Kong and Malaysia mainly used some common traditional techniques in the VM process, such as function analysis, brainstorming and scoring. In Sri Lanka, the VM techniques were not properly used. Participants usually analyzed information by handwriting and totally based on the agreement among team members to evaluate ideas.

Table 3 Summary of VM process Items

Workshop Process	Statement
Information	
Information Type	The detailed <i>latest information</i> such as <i>layout plan, key issues, and relevant documents</i> was shared in HK. In SL, <i>each role</i> of the participants contributed different information.
Information techniques	Different information sharing techniques, including brainstorming (HK, US, and SL), presentation (MA), and value models (MA and US) were applied.
Analysis	
Function analysis	<i>The functions</i> of the projects were analyzed in the analysis phase in HK, MA and the US.
Analysis techniques	<i>Verb and noun phases</i> were used to identify functions, while the <i>FAST diagram</i> was applied for analyzing the logical relationship between functions in HK, MA and the US. In addition to that, other techniques such as <i>function cost</i> (US), <i>function tree</i> (US) and <i>value index</i> (MA) were also be used. However, in SL, they just analyzed information on <i>the blackboard by handwriting</i> .
Creativity	
Judgement	<i>Judgment for ideas was not allowed</i> when generated ideas in HK, MA and the US. But ideas were <i>simply deleted when someone disagrees</i> in SL.
Creativity techniques	Brainstorming was used for generating ideas in the HK, MA, the US and SL. Other creativity techniques such as <i>force field</i> (US), <i>Delphi method</i> (US), and <i>six hats</i> (MA and US) were also applied in MA and the US.
Evaluation	
Evaluation techniques	The evaluation techniques including <i>T-test</i> (US), <i>weighted</i> (US), <i>choosing by advantage</i> (US), <i>scoring</i> (HK, MA and US), <i>champion</i> (US), <i>voting by red dots</i> (HK) and <i>evaluation matrix</i> (HK and MA) were utilized in HK, MA and the US.
Persuasion	Participants were <i>convinced by other team members for the best idea</i> in SL.
Development	
Proposal	<i>Proposals for ideas</i> were developed in this phase (HK, MA and US).
Presentation	
Presenter	<i>VM facilitator</i> did the presentation in MA and the US. <i>The VM team elected a team member to present</i> in HK while the <i>project manager</i> carried out the presentation in SL.

Note: HK – Hong Kong; MA – Malaysia; SL – Sri Lanka and US – United States.

Recommendation

After exploring the factors for VM practices and challenges in the B&R regions, the respondents also offered some practical recommendations for promoting VM: Awareness improvement, education improvement, senior support and standard application (refer to Table 4).

For promoting the VM application, the *improvement of VM awareness* is the crucial step. The VM awareness can be improved via *workshops and seminars* (Hong Kong, the US, and Sri Lanka interviewees) by introducing VM basic knowledge and some successful examples of VM application. On the other hand, offering VM courses in universities may also be a chance for people to learn professional VM knowledge. Some universities have included VM courses in Hong Kong and Malaysia (Che Mat, 2010; Leung, 2006). However, VM is not a formal course in most countries along the B&R regions such as Sri Lanka. Their universities “just taught a little bit about VM basic knowledge in quantity survey courses” (Sri Lanka interviewee). Thus, it is suggested to *offer VM education in the university* to enhance the VM knowledge. The government, as a policymaker, should take the responsibility to promote VM practices with other construction-related authorities (Cheah and Ting, 2005). Respondents from Hong Kong, Malaysia and Sri Lanka suggested that *senior support such as*

government (Hong Kong, Malaysia and Sri Lanka interviewee), big companies (Malaysia interviewee), and VM institutions (Malaysia interviewee) can improve the VM application in the B&R countries. VM institutes in VM founding regions such as SAVE and those in the B&R regions like the HKIVM should take the responsibility for promoting VM to the B&R countries by offer professional VM training and VM services. For example, the HKIVM has being conducted a series of influencing international conferences, seminars and workshops in 2018-2019 for promoting and extending VM professional services to the B&R regions (HKIVM, 2019). Producing a VM guideline is seen as a starting platform to guide and promote VM methodology to the local construction industry (Zainul and Jappar, 2010). A standard can define the VM steps, terminology, and guide practitioners in applying VM effectively (SAVE, 2020). Perhaps, using the international standard such as *use SAVE standard* (The US interviewee) in the B&R regions is a good way to promote VM.

Table 4 Summary of VM Promotion Items

VM promotion factors	Recommendations
Awareness improvement Workshops/ seminars	VM awareness could be enhanced <i>through seminars</i> (HK, US and SL) and workshops (SL).
VM education University course	VM could be promoted by <i>offering VM courses in the universities</i> (US and SL).
Senior support Governmental support	VM promotion needs to be <i>supported by the government</i> (HK, MA and SL), <i>the big company</i> (MA) and <i>other VM institutions</i> (MA).
Standard application SAVE standard	We should encourage the B&R regions to use <i>SAVE standards</i> (US).

Note: HK – Hong Kong; MA – Malaysia; SL – Sri Lanka and US – United States.

Conclusion

Over the past decades, VM has been successfully applied in construction projects in many countries. VM could significantly reduce life cycle costs, improve performance, and facilitate the decision-making process of the project. However, there is still a lack of VM application in most of the B&R regions. To promote the VM in the B&R regions, this paper explored the current VM practices and challenges influencing the VM application via semi-interview with VM and project management experts from the B&R regions (Hong Kong, Malaysia and Sri Lanka) and the VM founded countries (the US). Through the qualitative analysis, some factors were identified in terms of pre-workshop (i.e., objectives setting, process identification and stakeholder) and workshop (i.e., information, analysis, creativity, evaluation, development and presentation). The results revealed that the US practitioners had the most experiences for VM application and used the most advanced VM techniques among the practitioners of those 4 countries. Hong Kong and Malaysia practitioners were supposed to have more mature VM experiences among practitioners in other B&R countries, but VM participants in these two countries still had room for improvement. Sri Lanka professionals applied VM as a tool for just cost reduction in project management, while VM workshops were never arranged independently. Furthermore, several recommendations were proposed for the application of VM in the B&R regions by respondents, including awareness improvement, VM education, senior support, and standard application. In addition to the recommendations of the qualitative results, VM practitioners in developing countries along the B&R regions such as Sri Lanka should learn a systematic VM process and the advanced VM techniques from VM experts in developed countries (e.g., Hong Kong) as much as possible. On the other hand, VM experts in the developed regions long the B&R can also build close relationships with construction professional institutes in the developing countries in order to promote VM properly in the construction industry.

Acknowledgment

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