APPLICATION OF VALUE MANAGEMENT IN PROJECT BRIEFING

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Abstract

Briefing is the process of identifying and defining the client's requirements in the early design stage of a construction project. Previous research revealed that there are problems in the existing briefing practice. Recent investigations into the variables of briefing have led people to question whether the value management methodology can be applied in project briefing to improve the briefing practice. This paper describes a research project which seeks to establish a value management framework for project briefing to systematically identify and clarify client requirements, and represent these requirements precisely and explicitly to facilitate the design process. The research methodology and interim findings are presented in the paper. It is revealed that the theoretical foundation of the research supports the use of value management to the briefing process. Further validation of the proposed framework will be completed by conducting questionnaire survey and real-life case studies.

Keywords: Construction, Briefing, Value Management, Problems, Framework

Introduction

Briefing (also known as architectural programming in USA) is the process of identifying and defining the requirements of the client organisation in the early design stage of a construction project. A brief (also known as program in USA) is described as a formal document which sets out the client requirements for a construction project, and forms the basis for design. It is a product of the briefing process by which options are reviewed and requirements are articulated (Blyth and Worthington, 2001). The preparation of project briefs is a topical issue in the construction industry (Durek, 1993; Barrett and Stanley, 1999; Kamara and Anumba, 2001). The briefing process is both critical to the satisfaction of clients as well as the successful delivery of construction projects. A good project brief protects client from a major source of delays and cost overruns. When a good brief is in place, design can begin earlier, proceed more efficiently, and suffer less slippage and fewer false starts and client rejections.

Due to the complexities in identifying and conveying clients' actual needs and requirements accurately to the project team and the immense magnitude of project information that needs to be considered during the briefing process, project briefs are often inadequate and not sufficiently explicit, and thus may not truly reflect client requirements (Graham, 1983; Barrett and Stanley, 1999). To overcome this problem, a number of studies have been conducted to develop briefing guides for inexperienced clients (CIRIA, 1984; Bailey, 1990; CIB, 1997; Salisbury, 1998). Despite these early attempts, the current briefing practice is still considered as inadequate by many researchers (e.g. Barrett and Stanley, 1999; Kamara and Anumba, 2001). The lack of a systematic approach to identifying and clarifying client requirements, and defining and communicating them to the designers, are major roadblocks to successful project delivery.

The present study seeks to investigate whether the application of value management to the briefing process can lead to systematic identification and clarification of client requirements, and precise and explicit representation of these requirements. This paper introduces the theoretical foundation of the research project and describes the process for the development of the value management framework for project briefing.

The Characteristics of Briefing

Previous literature on the briefing process encompasses the following issues:

Briefing and clients
Briefing process involves the client informing the project team of his intentions for the project and documenting the objectives, needs and requirements in a brief. The client can be a single person or multi-headed client. Multi-headed client may be an organisation, or group of stakeholders, made up of individuals with differing wants and desires. It is difficult to find the right path that satisfies the diverse goals of a multi-headed client (Potter, 1995). The situation is complicated by the existence of the gap between the 'user clients' and 'paying clients' (or demand-supply gap) (Zeisel, 1984). However, it is important that the briefing process should adequately capture the requirements of all stakeholders that make up the 'Client' (Cheong et al., 2003).

Dynamic and iterative process
The briefing process in construction is of complex and iterative nature. It requires a shared understanding and commitment among a group of stakeholders of a project, including the client, the end users, and the project team. It is also a dynamic process that continues through the early design stages of a project, and involves frequent interactions among the stakeholders (Barrett and Stanley, 1999). A good project brief should include a precise description of the functionalities required by the stakeholders for the building project.

Extensive information possessing
Briefing involves a huge and wide range of initial/preliminary but crucial data/information/knowledge from different independent sources. It also involves concurrent and collaborative work by different non co-located parties over the same information (Rezgui et al., 2001). Therefore, coordination and communication among client's representatives, stakeholders and project team are of vital importance.

Critical decision-making process
Briefing embraces numerous essential decisions where the major commitment of resource is made. At this stage, the potential to influence cost is huge; therefore all possible options should be comprehensively examined to ensure that no potential alternatives have been missed. Many changes and revisions would occur during the briefing stage. All the decisions and the reasons justified throughout the briefing should be properly documented in a formal manner (Cheong et al., 2003).

Problems Associated with Briefing

A comprehensive literature review of briefing practices in the construction industry has been conducted. This section reveals the problems in briefing:

Lack of a comprehensive framework
Although numerous briefing guides have been developed for briefing, many researchers suggested that the general framework for briefing was still inadequate (Newman et al. 1981; MacPherson et al., 1992; Barrett and Stanley, 1999; CIT, 1996; Kamara and Anumba, 2001). The limitations in the existing framework for briefing can shift the focus away from the requirements of the client, and can result in problems in briefing practice (Kamara and Anumba, 2001).

Lack of identification of client requirements
Successful briefing relies on the thorough analysis of needs and rigorous evaluation of available options (Atkin et al., 1995). Latham (1994) and Kamara and Anumba (2001) revealed that commercial pressure from clients may require detailed designs to be prepared as soon as possible. This reduces the time spent on understanding the real needs and requirements of the clients and may affect the performance and success of the project.

Inadequate involvement of all the relevant parties of a project
Previous research revealed that the briefs may not be comprehensive because they are usually prepared by only a small group of representatives from the client organisation or by the consultants in the industry. Most public clients reported that involvement of other stakeholders would prolong the duration of briefing because of the difficulties associated with identifying them and reaching a general consensus in meetings (Chung and Shen, 2003).

Inadequate communication between those involved in briefing
The use of sketches and drawings to re-state and record changes to client requirements can make it difficult for requirements to be traced to the original needs of the client. Moreover, records of decisions at project meetings can be quite vague, and do not provide any explanation of why those decisions were taken (Kamara and Anumba, 2001).

Insufficient time allocated for briefing
Previous research projects show that poor definition of client requirements is due to inadequate time and thought being given at an early enough stage (Potter, 1995; Pena and Parshall, 2001; Kamara et al., 2002). This often occurs because there is urgency to obtain an immediate solution (CIB, 1997). Time pressure and a refusal to commit

finances have caused the briefing to be limited mainly to financial considerations (Barrett and Stanley, 1999).

All these problems in current briefing practices may affect the end performance of the building and reduce the client satisfaction of the project.

Application of Value Management in Briefing

In order to overcome the problems that are associated with Briefing, a number of studies have been conducted to develop briefing guides for inexperienced clients (e.g. O'Reilly, 1987; CIB, 1997; Salisbury, 1998). Despite these early attempts, the current briefing practices are still considered as inadequate by many researchers (e.g. Duerk, 1993; Barrett and Stanley, 1999; Kamara et al., 2002). The most comprehensive review of these studies to date is perhaps the work undertaken by MacPherson et al., 1992, which identified the weakness the current briefing practice as being too general and implicit to offer real assistance to clients and designers, and the briefing guides tell what should be done without explaining how things can be done. They suggest using Value Management (VM) for the future development of the briefing guide.

Value management is a structured and analytical process that seeks to achieve value for money by providing all the necessary functions at the lowest cost consistent with required levels of quality and performance (AS/NZS 4183:1994). It enables organisations to adopt a consistent approach towards decision-making, taking into account the needs of the business, the environment within which it is operating, and the people who may be involved. As a very effective tool in meeting the increasing demands for value enhancement by clients (Dell'Isola, 1982; Barton, 2000), VM has been widely used in many countries over the past five decades. The US Government requires the entire executive branch and federal agencies to establish and maintain cost-effective VM procedures and processes in all programmes and projects (SAVE International, 1997).

In Hong Kong, a technical circular was jointly issued by the Works Bureau and the Planning, Environment & Lands Bureau, which demands VM studies for major projects in the subordinate departments (Works Bureau, 2002). The Construction Industry Review Committee (2001) has also recommended that VM should be used more widely in local construction, because VM can help the clients and the project team to focus on the objectives and needs of the project and all stakeholders, both long and short term.

Using VM at the briefing stage, as a means of formulating the brief, is the most beneficial application (NSW Government, 1993). It enables clients to participate fully in the briefing process, and facilitates communication between clients and other stakeholders. An essential element of the VM methodology is the expression of client requirements as functions (a function is the specific purpose or intended use of a project that makes the project sell, produce revenue, or meet requirements). This approach enables a systematic identification and clear definition of client requirements, an improved understanding of various stakeholders' objectives, and the effective accomplishment of these functions. It also acts as a common language among stakeholders of the project, so that they can work together harmoniously to identify opportunities available for development and to highlight any potential problems at the very beginning of the project.

A successful attempt in the functional representation of client requirements is the Charette job plan, which rationalises client briefs primarily through the function analysis of space requirements. This plan is considered by many clients as an effective method of briefing the design team to avoid abortive design work (Kelly and Male, 1993). It should, however, be broadened to include other issues of client requirements and to ensure that designers fully understand these requirements. The expansion of this plan can be assisted by using the Functional Hierarchy which draws the why-how relationships amongst functions of a project diagrammatically: higher level functions appear on the left-hand side, and lower level functions on the right-hand side.

The realisation of the differences between structured and unstructured problems has led to attempts to revise the VM methodology to cope with unstructured problems such as the briefing process. Green (1994, 1997) proposed a SMART methodology and suggested the use of soft systems methodology. The unique contribution of SMART value management is the way in which it provides a framework for facilitating thought and communication. The outline methodology for SMART value management is illustrated in Figure 1.

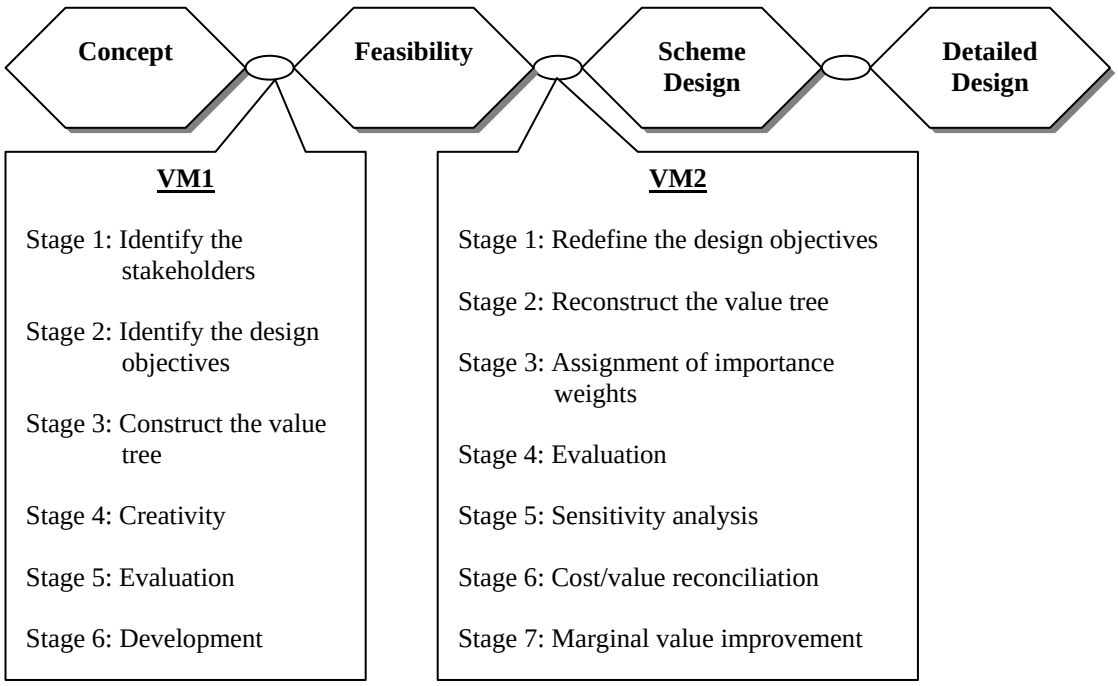

Figure 1 The Outline Methodology of SMART Value Management
(Source: Green, 1994)

Barton (2000) proposed a soft value management methodology, which is specifically designed to address complex problems encountered in project initiation, whereby a large number of people are involved in the process and high-level facilitation skills are essential to its success. The methodology is summarised as follows:

- The facilitation methodology separates workshop processes from the content of the study and makes extensive use of co-facilitators.
- Soft value management studies typically include between 20 and 30 people.
- Soft value management embraces the notions of functions and purpose, and makes use of modelling techniques.

- Soft value management workshops are typically of two days duration in which the first day is primarily one of divergence, about learning, creative a new knowledge base, shared understanding and creating possibilities. The second day is one of convergence, about evaluating ideas and developing proposals in response to defined study objectives. The structure of these workshops follows a traditional problem solving/value management approach, comprising sequential phases of "finding out", creating possibilities, evaluating the possibilities, developing options, drawing conclusions, taking decisions and developing an action plan.
- Soft value management is characterised by extensive small-group work in which participants work in focus-groups, undertaking tasks to progress the study.

Research Methodology

The research project was approached through an initial brainstorming session by three researchers to identify variables likely to be significant in a theoretical framework for briefing. A comprehensive literature review confirmed or rejected the variables as significant and highlighted other variables initially not included. Thirteen significant variables were identified as having an impact from a theoretical perspective and became the theoretical foundation for the project. These variables were investigated in detail in the first stage to identify their impact, if any, on the briefing process of construction projects. This work was written-up to form a working research document that summarises each of the thirteen parts in terms of how the briefing process is influenced by the variables. This document forms the basis for the development of a theory behind the issues involved in the briefing process.

A questionnaire survey is used to identify missing variables (if any) and to validate the established theoretical framework. Questions were formed with reference to the aforesaid working research document and a questionnaire containing four sections was drafted. The first section collects the background information of the respondents. The second section is designed to collect opinions from respondents on the briefing process. The thirteen variables are tested and verified in the third section. In the fourth section, an open-ended question concerning critical success factors for construction briefing is asked. The survey will be conducted in Hong Kong, UK and USA. A variety of methods will be used to distribute the questionnaire to project managers and architects who have experience on briefing. A web-based questionnaire will be used to administer the questionnaire survey in the UK and USA. A postal questionnaire will be adopted in Hong Kong, in order to increase the response rate of the survey. The respondents will be allowed to complete the questionnaire in eight weeks' time. The data collected will be analysed using SPSS 12.0 package to determine whether the respondents are in agreement with our theoretical framework.

Research Findings

The primary research findings of this project are the identification of 13 variables that have major impact on the briefing process. It was realised that some of the variables require consideration at particular points in the briefing cycle whereas others are present throughout the life cycle of a facility from the commencement of the briefing stage. The input of each variable on the briefing process has been investigated and

recorded in the 'working document', and a brief outline of each variable has been given with its relevance to briefing.

Projects
A project is a change-orientated event defined as 'an enterprise comprising physical and non-physical activities that include a pre-project stage to ensure effective planning and a post-project stage to ensure successful absorption into core business.' Therefore a project is a separate, temporary activity of an organisation's core business but one which will make a change. A brief for a project requires the initiator of the brief to accept changes.

Stakeholder Management
In the briefing process, it is necessary to consider the interests of stakeholders, both primary and secondary, and maintain a balance of interests of different stakeholders. Those with responsibility for the briefing process should strive to maintain a good working relationship among all stakeholders.

Change Management
The briefing team must recognise that people are at the heart of any change process; therefore communication and involvement are key areas to ensure change management success. The key areas of change management are education, training, communication, team and leadership development.

Knowledge Management
Knowledge management in briefing relies on teamwork, collaboration, face-to-face contact and effective communication structures. Fundamental to briefing therefore is the mapping of individuals' contributions to organisational project knowledge in order to determine the membership of the project briefing team.

Risk and Conflict Management
The importance of applying risk management techniques during the initial project appraisal phase of the briefing process lies in maintaining flexibility in consideration of design and planning alternatives whilst the biggest degree of uncertainty exists. Collaboration and problem-solving is preferred to conflict resolution during the briefing process.

Post Occupancy Evaluation and Post Project Evaluation
Successes, failures and past experiences of what does and does not work well should be used to inform better decision-making in the briefing process.

Teams and Team Dynamics
The briefing team is project focused and interacting; comprised of individuals willing to sacrifice individualism for collectivism.

Client Representation
It is important to ensure adequate representation of client groups to address client needs and to prevent distortion of the brief.

Types of Business and Organisational Theory

The briefing process must take into account that the team may consist of many different types of organisations with different success criteria. These success criteria are influenced by stakeholder satisfaction. For example, a government organisation or a not-for-profit organisation will differ greatly in terms of success criteria from those in the team who aim to make a profit from the project.

Decision-Making
A good briefing team should not limit themselves to just one decision-making method; instead, they should operate in contingency fashion by changing decision methods to best fit the problem and situation at hand.

Communication
The briefing process is essentially one of communication. Active listening should be encouraged in the briefing exercise to allow a free and complete flow of information and to enable effective communication.

Culture and Ethics
In managing the briefing team, the influence of culture dimensions such as language, time orientation, use of space, religion, power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, and long-term/short-term orientation must be taken into account. The briefing team may encounter ethical dilemmas which affect decision-making in the briefing process.

Critical Success Factors and Key Performance Indicators
The critical success factors in the briefing process range from clear objectives and requirements of the project to trust and involvement of key stakeholders. Key performance indicators include time, cost, and quality as well as satisfaction of stakeholders, environmental and social issues.

Figure 2 shows the interaction of these variables.

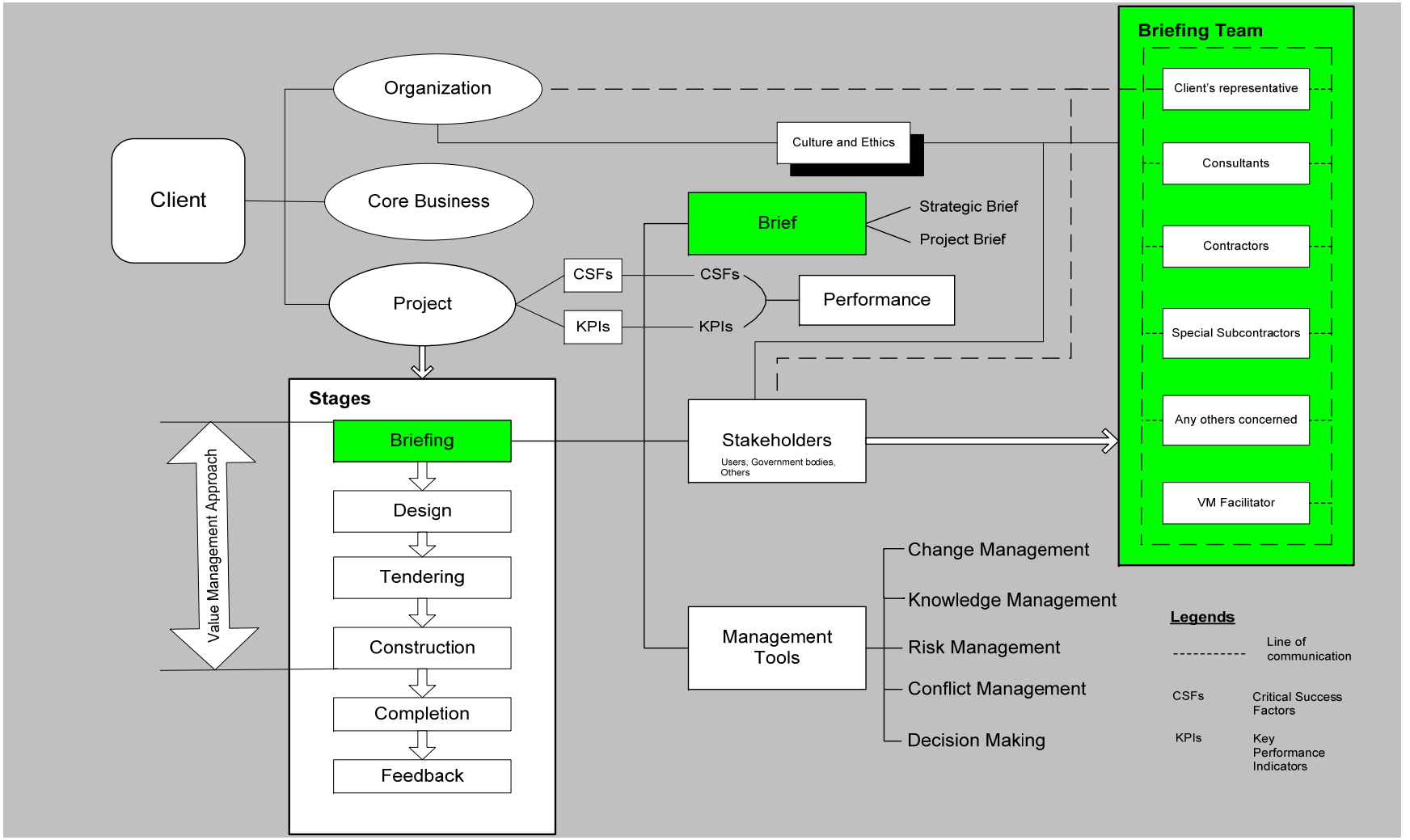

Figure 2 The Variables Affecting Briefing

At the stage of the project brief, there are a number of 'inputs', 'controls' and 'measures' that are established to ensure the successful progression from the briefing stage throughout the remainder of the building's life cycle. These inputs involve all types of management (change management, stakeholder management, knowledge management, project management and, risk and conflict management) as well as their associated techniques to improve project success (brainstorming, tree diagrams, influence diagrams, Delphi method, nominal group technique, computer-mediated decision-making, ACID test, stakeholder analysis and visualisation tools). If knowledge management is used as an example, individual members of the team will have tacit and explicit knowledge that will be of valuable input to the project brief. This information will be shared and transferred to knowledge amongst the team to guide and support the project.

The controls and measures set up at this stage involve the use of various project management techniques, the implementation of a project execution plan and the use of key performance indicators, which may be the industry's standard indicators or those identified by the project team, or a combination of both.

The project briefing stage will also be influenced by previous Post Occupancy and Post Project Evaluations which should outline the successes and failures of previous projects and influence decisions made at the briefing stage to ensure organisational learning resulting in more successful projects.

Communication, decision-making and, the impact of culture and ethics are the factors that span everything from commencement of the briefing process throughout the facility's life cycle.

Value Management Input to Briefing

Kao (2003) states that 'an alternative perspective is needed to introduce and cover social and innovative matters into the briefing process in order to achieve a full understanding of client requirements.' It is understood that briefing has moved on from compiling data and information concerning the client requirements to understanding the client requirements through a social learning process. This presents the case for the input of VM to the briefing process.

The VM service and tools and techniques associated with it may address each of the variables identified provided the method is used properly and by an accredited facilitator. In terms of projects, VM is a project orientated service which relies on clear objectives being set for the workshop(s) to allow for an agenda to be set which will improve project performance. VM is most effective when applied to a project with clearly defined goals and a start and completion date. It also relies on a project team getting together for a workshop to discuss the project and add value in any way possible to the project. How this team performs will depend on the dynamics of the team and their ability to share and transfer knowledge. In addition, VM can improve communication and understanding of the client, consultants and stakeholders; the essence of briefing.

Future Research Works

After analysing the responses from the questionnaire survey on the theoretical framework, a practical VM framework will be developed on the basis of the results of the questionnaire survey. The proposed framework is likely to comprise two major elements: a structured job plan for the briefing process, and a hierarchical structure to identify, define and represent client requirements.

The next step is to develop a practical 'how-to" guide which explains the application of the proposed framework in detail. The guide will provide practical solutions to critical issues frequently encountered in the briefing process. Tools, techniques and examples of tasks such as how to identify clients' needs, how to represent client interest groups, how to set priorities for objectives will be provided in this guidebook.

Subsequently, a snowball sampling technique will be adopted to identify VM experts who will be invited to give comments on the initial draft of the guidebook. This sampling technique will commence with the distribution of invitation letters to recognised VM professionals who will be asked to recommend other experts in the VM field. The guidebook will then be sent to those VM professionals who are willing to participate in the study and give their opinions on the guidebook. Following this, the guidebook will be revised in accordance with their comments.

In order to evaluate and validate the proposed approach, experiments will be conducted by applying the proposed framework to a group of three office projects in Hong Kong and the UK. These experiments will focus on whether the proposed approach can lead to the systematic identification and clarification of client requirements. The results of these experiments will be compared with similar projects that did not use the proposed approach. The outcomes of the experiments will be used as case studies and discussed with design consultants of the projects to investigate the effects and usefulness of the proposed approach in the briefing process. Views from the design consultants will be collected and compiled. Based on the feedback, the proposed framework will further be improved and refined.

CONCLUSIONS

This paper summarises the research work completed to date and presents the interim findings of the project. The major areas of findings are the identification of the 13 variables that have impact on the briefing process, a theoretical framework for construction briefing and the need of a VM input to briefing.

The review of literature and the development of the theoretical foundation revealed that VM is useful to overcome briefing problems evident years ago and still apparent in today's construction industry. VM provides a proven management technique that can be applied to the briefing process to help client organisations achieve optimal solution for their construction projects.

The existing models in the literature do not take into consideration those factors such as change, knowledge and risk management, which were developed during the same

timeframe. This international research proposes that the proven foundation will be embodied within a more sophisticated VM framework for briefing.

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