Importance of value management

The report aims at making the clients aware of the importance of a Value Management (VM) study in their project. It describes the process of the study step by step, the benefits of conducting the study at an early stage and relating the study to specific project issues. It gives a brief understanding of how the VM study works at different stages and a typical agenda provides a brief review of the same. Tools and techniques used in the study are also explained. Finally a short introduction to Value Engineering and the importance of its study at the appropriate time in the Project life cycle will be discussed.

1. Introduction

The (Public – Private Partnership) project is to be assessed through the value management study. As the project brief indicates a mixed use recreation and commercial centre, a gym, swimming pool, park, health spa, squash court, jogging and cycling tracks with features as leisure facilities and for commercial centre would include retail outlets, health clinics, cafes, offices to let, pharmacies and theatres. Benefits of such a PPP project are it reduces costs, transfer risks to the private partner, shortens the construction period, and has access to skills, experience and technology of the private sector. This project is to cater for the expatriate and local communities living in the suburbs who do not have assess to any leisure facilities. With this project people, especially children will be able to spend time outdoors and use other facilities rather than stay indoors watching television. It also allows people to use various health facilities and do their shopping in their locality itself.

Value management is a study that helps maximize the functional value of the project under study by managing its development right from the concept

to its completion by accessing its value system. In a PPP project as there are two parties – the government and the private sector there are varying value systems. The public sector's aim is to regulate, deliver services to people and achieve value for money; while the private sectors goal is profit.

2. Value Management Study

Value Management (VM) studies are typically initiated for a number of reasons such as cost overrun of the project, communication problems, clients not satisfied with their approach to project management and finally clients who understand and believe that a VM study helps improving the value of the project. The benefits of VM exercise are the maximum when implemented at the start of the project, particularly if it's applied during conceptual development and initial design stages. Some of the benefits may be improving project schedule, improving technical specifications, generating alternative ideas; identifying unnecessary expenditure; optimizing resources; eliminating redundant features and appreciation of whole of life cycle costs.

The VM study can address specific issues of this PPP project such as a better Value for Money, obtaining provisions for better quality services, quicker delivery of the project and finally better utilization of the assets being put inot the project.

2. 1 Orientation Phase

The VM study can broadly be divided into three stages namely – orientation phase, workshop phase and the implementation phase. During the orientation phase tasks such as coordination of works, gathering of data such

as plan layouts, site conditions, project constraints, operational requirements. Also tasks such as scheduling VM study location, preparing the agenda and selecting the study team are done. If large team is selected, subdivide the members to form teams so that specific matters covered in detail. Selection of the team is done by the ACID test. Authorize – include those who have authority to take decisions during the workshop. Consult – include those without whose consultation the workshop may be suspended. Inform – exclude those who have to be merely informed about the outcome of the workshop. Do – include those who have to translate the outcome of the workshop into action.

The study team comprises of the following:

- 1 certified value specialist
- 1 consultant project manager
- 1 contractor’s representative
- 1 quantity surveyor
- 1 architect with mixed use recreation centre experience
- 1 structural engineer
- 1 building service engineer
- 1 school teacher
- 1 health counselor

It is advised to use a combination of members from the design team and outside in order to assure free thinking and unbiased recommendations. The value specialist will preside over the entire workshop to see that the study is carried out smoothly and as per the agenda. The consultant project manager

and the contractor's representative represent the client and the contractor, informs each of their value systems to the remaining members of the study team. The quantity surveyor advises about the quantities of items that would be required, while the architect would provide his opinion on what would be the perfect design for the project. The structural engineer looks into the requirement of the elemental units of the structure such as columns and beams so that the structure is stable whereas the building service engineer analyses the services that will be installed once the structure is ready. Besides professional a school teacher and health counselor are appointed into the team so that they can provide their perspective representing the local community.

AGENDA

TIME ACTIVITY

Day 1 Pre – workshop

16. 00 Introduction

Purpose of the VM workshop and its benefits

17. 00 Gathering information such as project constraints, functional

requirements, plan layouts and site conditions

19. 00 Familiarizing the team with the agenda (job plan)

20. 00 Dinner and getting to know members of the study team

Day 2 Workshop phase

09. 00 Introduction phase

Quick review of collected information

09. 30 Issues Analysis

10. 45 Snacks break

11. 00 Client’s value system

Identifying main values of the client

12. 00 Preparing a strategic timeline for the project

Stakeholder mapping

12. 30 Familiarizing the study team with Function Analysis and FAST

13. 00 Lunch break

14. 00 Function Analysis

14. 30 Sorting of functions – needs and wants

15. 00 FAST diagramming

17. 00 Tea break

17. 30 Review the FAST diagram

18.. 00 End of DAY 2

Day 3 Workshop phase

09. 00 Creativity phase

Brainstorming

11. 00 Snacks break

11. 20 Listing of ideas generated

12. 00 Evaluation phase

Crude filtering by weighted voting to reduce number of ideas

Refined filtering – green dots to select 8 ideas

red dots to select 4 ideas.

13. 30 Lunch break

14. 30 Development phase

Development of ideas selected in evaluation phase

15. 30 Detailed analysis of TCQ – time, cost, quality

Life – cycle costing

16. 30 Tea break

16. 50 Implementation of ideas and follow up plan

18. 00 End of DAY 3

Day 4 Workshop phase

09. 00 Reviewing the development of ideas

09. 30 Action plan

10. 00 Presenting importance of Value Engineering and its benefits

11. 00 Presentation – Recommendations to Management

11. 30 Snacks and Goodbye

2. 2 Workshop Phase

The workshop commences by analyzing project – understanding how client plans to own, generate and maintain the project and followed by issues analysis. Client Value system is then identified by considering values which are important to the client and performing paired comparison between the values as shown below. This helps identify which are the key values of the client. Stakeholder mapping (power to influence vs. interest) and Strategic Timeline are other tasks to be carried out.

One of the main steps of the VM process is function analysis. Through function analysis project components are analyzed and compared to be able to achieve project objectives. The primary function and secondary functions are also identified. The primary function is essential for the achievement of stated objectives, whereas the secondary functions aid in providing the project's wants. Using FAST diagramming the functions of the system are identified. First functions are generated through brainstorming and then sorted such that the needs are at the topmost left and wants bottommost right. The functions are placed in such a way that we move to a lower level asking ' how?' and move to a higher level asking ' why?' Function analysis helps generate ideas that eventually result in recommendations.

The second phase of the workshop is Creativity phase. It is done by considering a function and contributing suggestions that answer the function through a list of creative ideas as well as identifying risks involved with

them. The team generates as many ideas as possible to provide the functions at a lower cost. Judgment of the ideas is not permitted. Most of the ideas are a result of the exercise done in the function analysis phase. The next phase (evaluation) of the workshop involves screening ideas to more manageable numbers. The ideas and risks evaluated are graded on the basis of potential savings, time required to redesign and client acceptability. They are then ranked and the highest are selected by the team to be further reviewed by the members of the design team.

During the development phase the ideas are converted into workable solutions after examining their technical feasibility and economic viability. The risks that are assessed and weighted are also considered. They are entered into a risk register. The recommendations are prepared with a short brief to compare the original design with the suggested changes. At the end of the workshop a presentation is held to give recommendations and suggestions to the management.

2. 3 Implementation Phase

The implementation phase of the VM study includes submitting to the clients and the design team, the VM report containing recommendations developed during the workshop. The design team may incorporate the recommendations suggested into their project design or reject them. Along with the VM report a summary of the cost savings and redesign costs are also included. The report may include KPI – Key performance indicators, schedule of activities and a Risk register.

3. Value Engineering

Value Engineering (VE) is the process of identifying and eliminating unnecessary cost during design and construction. VE studies should ideally be conducted at 35% design – schematic design stage. While the early stages of design provide the most opportunities for affecting the value elements, it is advisable to consider VE at all stages of the project. Project constraints should be outlined prior to the VE, as it will help avoid making recommendations that are contrary to the client's design. The elements that are typically of interest during the VE study are (1) the basic structural elements – positioning of columns and beams, optimizing loading effect on the foundation. (2) The architectural design, (3) Positioning of electrical and mechanical components such as lifts, escalators, HVAC systems,(4) the use of technology etc. The study team for the VE workshop may comprise of:

- 1 certified value specialist
- 1 project engineer
- 1 structural engineer
- 1 building service engineer
- 1 electrical engineer
- 1 mechanical engineer
- 1 quantity surveyor

VE facilitator with a specific expertise in aspects of VE will lead the workshop in order to structure the process and to better the effectiveness of the program. The team members are selected depending on the subject to be evaluated, the structural engineer would look into the requirement of the elemental units of the structure such as columns and beams so that the

structure is stable whereas the building service engineer analyses the services that will be installed once the structure is ready. The electrical and mechanical engineers analyze the installations of electrical equipment and machinery such as lifts, HVAC etc. The Project Engineer shall take part whenever design aspects of the project are reviewed. Supporting disciplines like quantity surveyor is involved to assess the quantities.

The VE workshop provides improvement of value through the following:

- The current project design is assessed with the functions, checked for technical, cost optimization.
- Alternative ideas are evaluated to identify benefits and risks of changes to the alternative design.
- Key aspects of the design are evaluated so as to achieve Value for money;
- Effectiveness of each option is evaluated, in terms of : Cost to function ratio; Life cycle costing; OPEX vs. CAPEX balance;
- Analyzing buildability and overall performance of the project.