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THE HONG KONG INSTITUTE OF VALUE MANAGEMENT

THE VALUE MANAGER

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AIMS AND OBJECTIVES OF THE HKIVM

- To create an awareness in the community of the benefits to be derived from the application of Value Management in Hong Kong.
- To encourage the use of the Value Management process by sponsors.
- To establish and maintain standards of Value Management practice in Hong Kong.
- To contribute to the dissemination of the knowledge and skills of Value Management.
- To establish an identity for the Institute within Hong Kong and overseas.
- To encourage research and development of Value Management with particular emphasis on developing new applications of the process.
- To encourage and assist in the education of individuals and organisations in Value Management.
- To establish and maintain a Code of Conduct for Value Management practitioners in Hong Kong.
- To attract membership of the Institute to support these objectives.

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EDITORIAL

Welcome to the 3rd issue of this publication for the year 2005. I believe most of you are planning for your holidays in the forthcoming Christmas, may I take this opportunity to wish you all a wonderful Christmas and a prosperous New Year!

The first paper, written by David Baguley, introduces a universal model for promoting Value Management. It aligns the value management process with the revised Australian Standard, develops a simple model of the process that can be promoted and marketed to a range of potential users. The second paper is written by Warwick Talbot, which describes the application of Value Management in a railway project in Hong Kong. It gives a real life example of how partnering can affect the outcome of a very complex project and deliver savings not only to the project at hand but also to a subsequent project by the parties through value engineering. The third paper, written by Lindsay Pickles & Bryan Clifford, introduces how partnering can complement the Value Management process. It describes a project in the context of two workshops and shows how the team's attitude, generated by partnering, contributed towards the successful outcome of the Value Management Process. The last paper, written by Mei-yung Leung, introduces Professional Services Development Assistant Scheme, which updates and disseminates VM knowledge and skills required by construction professionals to enhance the competitiveness of the construction profession in a regional context.

Geoffrey Shen

Editor, The Value Manager

A UNIVERSAL MODEL FOR PROMOTING VALUE MANAGEMENT

David Baguley
Advanced Value Management Systems, Australia

ABSTRACT

Value Analysis, Value Engineering, Value Management, Hard VM, Soft VM – what exactly is this process? Explaining to the uninitiated is not always easy and can lead to confusion at best. Even those who participate in a successful value management workshop walk away with an impression that the process has been defined by what they have just experienced. Another day, another focus and another facilitator is likely to mean the process is somewhat different. Defining Value Management so that it can be packaged and promoted as a superior problem solving process may be difficult, especially in competition with reproducible 'flavour of the month' management techniques such as TQM, Six Sigma, MBO, and similar sounding VAM or 'Overhead Value Management'. But Value Management has continued to deliver results in an ever-increasing range of applications for more than 60 years whereas many of these other techniques burst onto the scene, flourish for a while then become subjects of academic interest only. This paper aligns the value management process with the revised Australian Standard, due for release in mid 2005. It develops a simple model of the VM process that it can be promoted and marketed to a range of potential users.

INTRODUCTION

There are many ways in which a Value Management study may be undertaken but certain procedures are fundamental to the methodology. The set of procedures is commonly referred to as the Value Management Job Plan. It is possible to phase the process over several days or even weeks and also possible to hold studies at various stages of the project. This need for flexibility is acknowledged and reflected in the Australian and New Zealand Standard for Value Management AS / NZS 4183:1994.

Value Management methodology involves each of the following phases being considered in a structured, systematic format:

- Information Phase – Project scope and appreciation of background information.
- Analysis Phase – Assessment of functions, activities and structure to develop understanding of the issues.
- Creativity Phase - Generation of alternative ideas for providing functions
- Judgement Phase - Selection of certain ideas for further consideration and evaluation.
- Development Phase - Alternative value improvement proposals that lead to a presentation of best value proposals in a report and implementation.

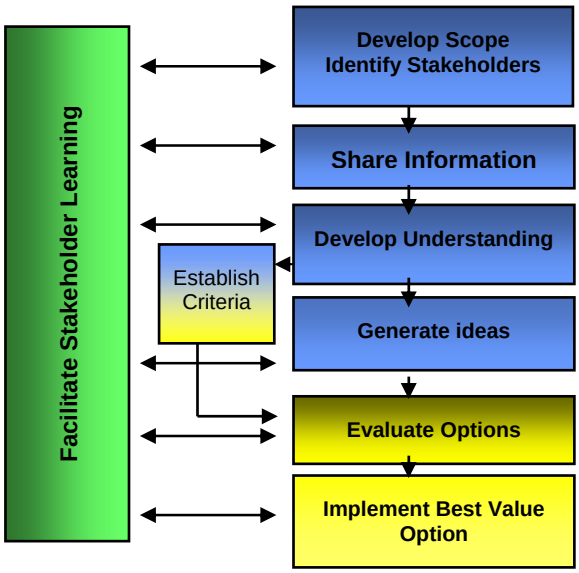

Figure 1: Australian Standard AS4183: 2005

Figure 1 is a simple representation of some of the concepts in the draft revised Australian Standard for Value Management, which expands on the Job Plan using functional outcomes to define the phases.

A MODEL FOR VALUE MANAGEMENT

The value management community needs a simple model that encapsulates the VM Job Plan and the various standards around the world. The Quality Movement was united behind the "Plan, Do, Check, Act" Cycle.

Figure 2 presents a model for promoting Value Management as a consistent set of phases held together by a facilitation process.

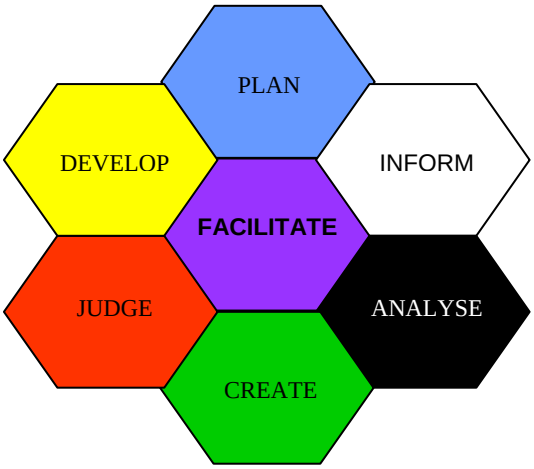

Figure 2: Proposed VM Model

The alignment with the Australian Standard is as follows:

- Pre-Workshop Phase (PLAN)
- Share Information Phase (INFORM)
- Develop Understanding Phase (ANALYSE)
- Develop Ideas Phase (CREATE)
- Evaluate Options Phase (JUDGE)
- Develop and Implement Recommendations Phase (DEVELOP)
- Facilitate Stakeholder Learning (FACILITATE)

Every value management study will go through these phases. However the facilitator may choose different tools and techniques within each phase, depending on the study focus, the level of stakeholder knowledge, time available, the number of participants and a range of other factors. Some of the activities that one might expect to find in each phase are explained below.

PLAN - THE PRE-WORKSHOP PHASE

Determine Scope of Study

Critical to the success of any value management study is having the right people addressing the right problem at the right time. It is therefore essential that client sponsors of the study meet to review the scope. They must ensure that the scope is not too narrow that it restricts the opportunities for major breakthrough improvements, e.g. a focus on reducing the capital cost of construction compared with optimising service delivery.

Identify Stakeholders

Equally important is getting all the key stakeholders involved. A preliminary analysis of the issues likely to arise will assist in identifying those persons who can contribute information, analysis/technical skills or who need to be included as any changes will affect them or their processes. From this analysis the team to participate in the study is chosen. This is dealt with in more detail in the section "Facilitate Stakeholder Learning".

Plan Workshop Agenda

The facilitator will then develop an agenda for the workshop. This agenda should include all phases of the VM process but the tools used may vary depending on the focus of the study, the team composition and size and the time available.

Brief Team Members

Before the workshop, team members should be briefed on the task and their expected role. Some participants may be requested to present background or technical information that needs to be prepared and possibly researched. This briefing may take the form of a formal meeting with the facilitator and sponsors or could form part of a pre-workshop information package sent out in advance.

Gather Information

The amount of information sent out in advance of a workshop will depend on the existing knowledge of the participants about the subject of the study. Some pre-reading to set the scene and get participants thinking is good but if there is too much information, it is unlikely to be read. Sometimes questionnaires can be used effectively to focus participants on key issues and prepare them for discussions during the workshop.

Organise venue, catering, etc

Finally, an effective value management workshop requires a suitable venue that allows

team members space to interact. Room layout should cater for easy break out into smaller groups for discussions. Ideally the venue should be located away from normal workplaces so that effort can be focussed on the workshop. Audio visual equipment and other workshop materials needs should be planned and ordered ready for use.

INFORM - THE SHARE INFORMATION PHASE

The first and undoubtedly the most important stage of development of any process is the foundation upon which it is developed. In the total time span for the study the information phase typically occupies the greatest time and will go through much iteration in the total process and require the greatest effort.

Review Scope & Objectives

The objective of a system or project needs to be tested. Modern project management identifies that the key to a project is the clear identification of scope whereby objectives are clarified, constraints are identified and a broad strategy is developed. The situation analysis is designed to establish from the group or team conducting the review the actual problems, and in many cases, the opportunity that the project team is facing.

Present Background Information

The establishment of where the project/system has come from will assist in understanding of the rationale behind a project at a point in time.

hierarchical levels. The greater insight to the overall purpose and specific functions of the system under review affords a better prospect of developing improved solutions by solving real problems and meeting the real needs. The primary objectives of Functional Analysis are to identify the basic functions and reveal alternative means of achieving the objective. It should always be remembered that the process of functional analysis is not an end in itself but is simply a vehicle by which we identify areas of potential value improvement.

Cost Functions

Having identified the functions using functional analysis, it is now necessary to assign costs to each function. What is the total cost of carrying out a function? Where appropriate, life cycle costing is adopted to ensure a balance between capital and operating costs is maintained in any solution. Discounted cash flow is used to allow comparison of solutions with different capital and operating expenses over their life cycle. Once the functions have been costed, a cost histogram of the functions is developed which highlights high cost areas. It should be noted that functional costing presents a different picture of a project's costs to that presented by traditional costing and cost models. This alternative perspective often raises issues that need to be investigated.

Identify Outcomes

This stage involves the development of a set of criteria against which we will test the options. We are seeking to find and prioritise the factors that will allow us to differentiate between options. The evaluation team should list all the outcomes that the various stakeholders would expect in a solution. From this list, the mandatory requirements are separated by asking the question: "What MUST the option achieve or deliver?"

Value Outcomes

The remaining project outcomes / features are desirable criteria and should be weighted in importance to allow differentiation of options which satisfy the mandatory criteria.

Identify Concerns

The establishment of this area within a VM study identifies key concerns and issues that become apparent during the study.

Analyse Trends

Another activity that assists in developing understanding is analysing trends – What happened in the past? What happens now? What is likely to happen in the future?

CREATE - THE DEVELOP IDEAS PHASE

Value Management provides a structured forum for stimulating and harnessing the creativity of stakeholders. It emphasises team rather than isolated individual creativity by mixing the multi-disciplinary skills and experience of the study participants.

Generate ideas

Various techniques are used to harness creativity in the group format. Brainstorming, for example, plays an important part in the VM workshop process. This is the time within the problem solving process when divergent thinking is necessary, when it is incumbent on members to produce a volume of diverse ideas. Other de Bono techniques can be used to expand an initial set of ideas and make groups think outside the square.

Harvest creativity outcomes

When we use creative thinking, we often put forth a lot of effort but then only take about 20 percent of the output. Harvesting means asking, 'What is our output?" and then taking as much as possible from our thinking. After ideas have been harvested, they need treatment. Treatment means asking, 'What are we going to do with the output we have harvested?" It is possible that the creative effort has produced a specific idea that is both valuable and practical. If so, we can move directly to assessment. The idea will take its place alongside the other ways of dealing with the matter. Usually, however, the output needs further treatment.

Interview Specialists

A specialist may be invited to a workshop to be interviewed by a team at a stage when they have built a foundation of knowledge and can structure questions to explore specific gaps in their knowledge, thus extracting maximum

value from the specialist's time. The specialised knowledge often provides additional ideas or support for concepts being explored.

Research new technologies

Taking advantage of new technologies is critical in developing innovative solutions. What might previously have been unachievable could now be possible due to advances in technology. Research must however be carried out to ensure that the technology has reached a level of maturity and reliability that matches the process outcomes.

Improve ideas

Having created as many ideas as possible to improve the system the group evaluates them. Those considered to be worthy of pursuit are assessed in more detail by either the Team as a whole or by sub-groups to maximise the quality of each member's contribution. Where necessary supplementary information may be sought to improve the ideas. As discussed in harvesting of ideas, ideas can be improved or made relevant through further treatment and shaping to fit the current situation.

Develop options

The output of a creativity session may be an option preferred by the Team as its solution to the system. Alternatively, it is better to develop a few or several options to be subject to detailed appraisal before a final decision is made.

JUDGE - THE EVALUATE OPTIONS PHASE

The principal objective of the Evaluate Options Phase of the Value Study Workshop is to 'apply analytical judgement to select alternatives which will satisfy the system's functions and performance criteria.'

SWOT Options

Systematically evaluating each alternative and analysing its advantages and disadvantages before making a final decision are the most important factors in effective decision making. The more explicit the systematic evaluation, the less likely that an alternative will be overlooked or rationalised away.

Estimate costs

The first screening of options is done against the mandatory requirements. This is a "Go - No Go" test with those options failing to satisfy any of the criteria, being set aside. This means that unless an option is able to meet some minimum level of compliance with a particular criterion, it will not be accepted.

Compare performance

However, once this is satisfied, there may an opportunity for further differentiation by rating options against the same criteria but, in their ability to deliver enhanced value over and above the minimum level.

Options are then rated against these and other of the weighted desirable criteria. Reasons for awarding scores should be progressively documented.

Evaluate risks

Before proceeding with acceptance of any option, a brief risk assessment should be carried out. For each of the top 2 or 3 highest scoring alternatives, the team should evaluate what could go wrong. A starting point might be criteria where the option did not score very well. Review the preliminary choice from the decision analysis if the risk is considered too high.

Identify best value option

The highest scoring option is then considered the 'best value choice'. Another technique that is quite powerful is to consider the cost of alternatives separately from the value criteria. The value scores for each alternative are then divided by the "apples with apples" cost to determine the relative "value for money" for each alternative. Once again the highest score is considered the best value for money choice

DEVELOP - DEVELOP AND IMPLEMENT RECOMMENDATIONS PHASE

The principal objective of the Development Phase of the Value Study Workshop is to develop, refine and select options and then document and report on the outcomes of the Value Study with actions required enabling implementation.

Enhance Best Value Option

In this final phase of the Workshop the team focuses its efforts on developing refined improvement options and rationale for them. This phase is likely to continue after the workshop, especially in situations where further investigation or information is required before a final decision or recommendation can be made. Their decisions and recommendations are confirmed against the study and project/system objectives for consistency and relevance.

Assess Implementation Risks

A preliminary implementation plan is developed for the preferred option. The risks of achieving each step in this plan are then assessed and mitigation strategies integrated into the plan.

Present Recommendations

Often teams are asked to present their findings to an audience of peers and decision-makers. This is a powerful way to test the team commitment to, and the practicality of the recommendations. A well-prepared presentation and a united response to questions will greatly assist acceptance of the recommendations.

Document Study

The value study report is an important record of what was considered during the study, and provides a decision path to the final recommendations. For any project, this report should become an important planning document available to project managers.

Manage Actions

An Action Plan is created and responsibilities and deadlines agreed. These actions represent those tasks, agreed by the participants, as being necessary to progress the project's / system's implementation.

Implement Project

The involvement of project staff in a value management study provides them with, not only a thorough knowledge of the underlying concepts on which the project is based but also an established communication link with all key stakeholders. Both these aspects are immensely beneficial to the successful delivery of the project but difficult to measure.

FACILITATE - FACILITATE STAKEHOLDER LEARNING

Engaging all key stakeholders so that they get a genuine understanding of the problem and an appreciation and ownership of the recommended strategy is the core of the value management process.

Plan Stakeholder Engagement

What distinguishes Value Management from other problem solving processes is the high acceptance and successful implementation of recommendations. This is achieved not only by the rigorous analysis but also by the careful planning of how stakeholders are engaged. Success depends on getting ownership of outcomes and the progressive marketing of those outcomes to the decision-makers. The total value management process is designed to educate stakeholders and through this better understanding, progress the recommendations.

All stakeholders identified in the pre-workshop phase do not necessarily need to be team members for the workshop. A stakeholder or industry expert who can provide specific information pertaining to only part of the subject being studied may be interviewed by the team to develop understanding. Senior Managers may become involved as sponsors of studies and by acting as sounding boards at various stages during the study. Others affected by the recommendations can be invited to presentations by the team, where they can question the team and influence the final recommendation. There are several ways to involve all stakeholders without having to have them all at the workshop.

Manage Process

An organisation initiating a value management study must be prepared to manage the process from pre-workshop through to implementation, as the workshop is only a part of the process. Engaging a facilitator to run the workshop section of the study is relatively straightforward. Scheduling the workshop and other meetings to get the right people there requires organisation and persistence. A critical element is management support in making

attendance of staff a priority. Post workshop, an individual should be given responsibility for implementation. Nominating a team leader or responsible officer from the start of the process is one way of ensuring ownership and a will to follow through. This officer would give any presentations, finalise reports and chase up team member tasks. Without this 'project management', excellent workshop outcomes may never be achieved.

Facilitate Workshop

Team members provide the content knowledge but the workshop requires a facilitator to direct the process and ensure all attendees participate and share their knowledge about the subject of the study. It is the facilitator's role to guide the team through the various stages of the value management process to deliver a set of recommendations, to which all the team are committed and have ownership. The facilitator should be independent of the focus of the study so that he/she concentrates on the group dynamics rather than the content. Eric Adam wrote about a facilitator being able to "quickly gain the respect of the team members, and must be someone who has the ability to generate enthusiasm. A value management team will not achieve maximum result unless the members become enthusiastic and think positively. Whether or not they achieve this will depend largely on the ability of the facilitator". The Institute of Value Management Australia has a set of training and accreditation criteria that must be satisfied before a facilitator can be registered.

Integrate Specialists

Involving a specialist adviser in a value management workshop is an ideal way to utilise their expertise. The information sharing and create understanding phases provide a comprehensive brief about the problem and the background circumstances, bringing the specialist rapidly up to speed in a dynamic environment where ideas are being freely exchanged. The specialist is therefore able to tailor his / her advice and or ideas to fit the particular circumstances and to be interrogated first hand by other team members about other possibilities. The use of an external specialist or 'wildcard' in the team stops teams from becoming too insular in their deliberations.

Access Decision Makers

Getting access to decision makers is critical in maintaining the momentum that can be built up during a value management study. Access might be in the form of an agreed process to progress the study report so that it receives timely executive attention or it may be the opportunity to present findings directly to the executive team. During the series of design review studies for Stanwell Power Station, the teams were greatly encouraged (and challenged) by having the executive management team attend all their presentations of findings. The team's ability to answer questions at this session provided the decision makers with a good indication about the rigour of the analysis and the practicality of the recommendations and certainly assisted in getting approvals for the formal report.

Recognise Success

Finally, organisations must be prepared to recognise the success when a team delivers a good outcome. This not only encourages those involved, it also assists in developing the credibility of the process, which in turn makes it easier to get the right staff released to participate in future studies. Recognition can range from a simple thank you to an article in the corporate newsletter to a celebratory dinner.

CONCLUSION

The model presented is simple to understand and removes the confusion often associated with value management. The adoption of a universal model is critical for the ongoing promotion and marketing of value management to new audiences.

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MTR CORPORATION FOUR TRACKING PROJECT - SIGNALLING PARTNERING AND VALUE MANAGEMENT

Warwick Talbot
Rail Sourcing Solutions (International) Ltd

ABSTRACT

Partnering is a key element in the success of any project. How well relationships are built and maintained throughout the life of the project is vital to the effective management and overcoming of problems and challenges that invariably occur. This presentation gives a real life example of how partnering can affect the positive outcome of a very complex project and deliver savings not only to the project at hand but also to a subsequent project entered into by the parties through value engineering. The case study presented is the signalling contract portion of an MTRC project that involved the provision of two additional tracks on the Tung Chung Line for the interchange station at Nam Chung with KCRC's West Rail project. Key elements of the success are presented with highlights on how partnering contributed to the success and how partnering was implemented. It will also show that the partnering success in one contract created the environment for the introduction of value engineering in a subsequent contract.

BRIEF DESCRIPTION OF PROJECT.

Two additional tracks were constructed between Lai King Station and Olympic Station to allow interchange of passengers between MTR Corporation's Tung Chung Line (TCL) and Kowloon-Canton Railway Corporation's West Rail, at Nam Cheong station (NAC), without obstructing the passage of MTR Corporation's Airport Express trains

This project commencing June 2001 through to completion January 2004 included the signalling of the new sections of track, allowing the TCL trains to stop at NAC, without impacting on the journey time of the Airport Express trains that continue to use the existing tracks of the Lantau and Airport Railway (LAR)

The signalling works included a complex implementation of new equipment to interface between the existing railway and the new tracks. Testing and commissioning could only be performed during a narrow window of time in the early hours of the morning (typically 1:00 am to 5:00 am), between the normal operating hours of the existing railway.

The project involved a Lump Sum Contract (HK$ 82M) between the Client, MTR Corporation and the Contractor, Alstom Transport S.A. who participated in the Partnering arrangement. John Carlisle Partnerships (JCP) was engaged to facilitate the partnering and value management elements of the project.

THE DECISION TO INTRODUCE PARTNERING.

MTR Corporation has previous, successful experience of Partnering on their Tseung Kwan O Line extension. Consideration was given to using this experience on the signalling contract as in the first 6 months of the contract the Contractor's performance was well below expectation. Not one milestone was achieved and the contract was basically 6 months late. Non contractual Partnering, commencing with a 2-day workshop, was introduced by MTR Corporation with sceptical agreement from the Contractor. This was the turning point of the Contract. It had the effect of "jump starting" the signalling team into positive action and helped them to recognize the benefits of building relationships at all levels. A rapid improvement occurred initially, followed by a steady increase in performance. Communications improved dramatically and relationships blossomed to the extent that within 6 months of the workshop, the Contract was back on schedule with final completion, some 2 years later, 2 months ahead of schedule.

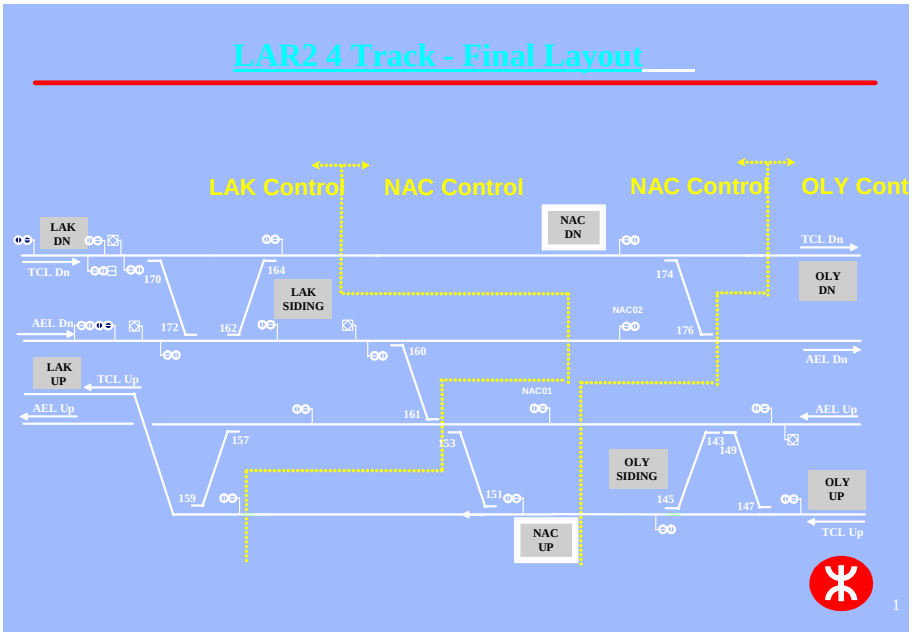

Figure 1: Final Layout of LAR2 4 Track

KEY ELEMENTS OF THE SUCCESS

MTR Corporation have successfully used Partnering on other major projects, they were therefore pre-disposed to extend the use of Partnering to this Contract;

The Contractor had three geographically separated offices and the staff that undertook the works was located in, France, Australia and Hong Kong. The design, software and most of the hardware were produced in France with a small portion of design and software produced in Australia, with the installation, testing and commissioning being undertaken in Hong Kong;

MTR Corporation initiated the first workshop. This involved convincing the skeptical senior management in Alstom Transport S.A. signalling Division that partnering was essential for this project.

MTR Corporation selected the facilitator (JCP) to run the 2-day workshop who interviewed key members of the Contractor's and Client's teams in advance, to have an understanding of personalities and perceptions and to prepare them for the workshop. Those attending were selected primarily on the basis of the key roles played in the project. One of the outputs from the initial workshop was the consolidation of a Partnering Charter which identified specific values, behaviours and mutual objectives which would be required for the success of the Project.

After the initial workshop, Partnering activities were continued by the team in many ways. One was the Contract Partnering Steering Group who monitored and steered the relationship towards building a united Client/Contractor team. This group consisted of a senior manager from each of the Client's and the Contractor's organizations, together with their respective project managers;

Perceptions about the Contract and the Partnering issues were rated by all team members, collated by the Client and discussed every month at the Progress Meeting. This provided valuable insight into the way team members felt about the relationship and the progress of the Contract and allowed members to express concerns and suggest improvements;

Partnering review sessions were held at intervals not longer than every six months. These were one-day sessions with the Partnering facilitator to continue the relationship building and to reaffirm the benefits of Partnering. It was also a good opportunity to introduce new team members into the spirit of the arrangements;

On a social level, after achievement of major milestones, team gatherings were organized, taking the form of a dinner, or a breakfast after

the overnight changeover activities. These were encouraged and financially supported equally by Client and Contractor;

Towards the end, a close-out review workshop was held in a memorable location that would never be forgotten by all. The workshop was primarily to reflect on and capture the good and not-so-good aspects of the Contract and the Partnering relationship, to celebrate the success of the Contract and to recognise the efforts of the team and the good working relationships established;

A number of Key Performance Indicators (KPIs) both "soft and "hard", were used during the Contract to measure its success.

Soft KPIs were split into two categories:

- Mutual Objectives and Values; and
- Behaviours.

These were measured as perceptions by all the MTR Corporation and Alstom staff working on the Contract. They proved to be invaluable in directing the focus towards areas where the overall score for a particular category had declined from the previous month's score.

Hard KPIs were:

- achievement of milestones and critical dates;
- timely submissions, responses and re-submittals;
- quality (non-conformances);
- safety issues raised;
- disruptions to train services;
- public complaints; and
- number of claims.

PARTNERING HIGHLIGHTS.

What went well at the beginning was the absolute commitment of the Alstom senior management to the Partnering concept after the workshop. Their influence and participation allowed the Alstom team to realize their potential. The Contractor's senior management stated that the workshop had exceeded their expectations and generated a significant amount of output that was directly applicable to the management of the contract. The preparation of the Partnering Charter provided the opportunity for all participants to recognize the values and behaviours that are necessary for a successful relationship.

During the Contract, and with relationships firmly established, some difficulties arose which threatened to cause serious disruption of several months to the overall project unless immediate action was taken. In the spirit of the no blame culture that was part of the Contract, the decision was taken that someone from the MTR Corporation's project team should travel to France to assist the team through these difficulties. The MTR Corporation Senior Construction Engineer elected to undertake this because of his overall knowledge of the project. In the following 6 weeks, alternate strategies were discussed and debated in Paris on how the Contract could be brought back on track. A recovery strategy was developed with the outcome that the remaining activities on the Contract were completed ahead of schedule. The causes of the slippage were analyzed later and judged to be due to a failure in communication on a specific issue.

The mainstay of the success of Partnering was the relationships that developed, although it was not all plain sailing and some friction did occur at times. The knowledge that all the team were working towards the same goal for the overall Project success encouraged people to work hard at maintaining the relationship and it proved to be the successful formula.

PARTNERING PERFORMANCE.

The success of partnering during the project can be measured by the following:

- no claims;
- no safety issues raised nor injuries sustained;
- completion ahead of program, by 11 weeks;
- original contract scope completed within budget;
- no outstanding commercial issues on completion; and
- outstanding minor works resolved within 12 weeks of completion.

THE TUNG CHUNG CABLE CAR – HOW PARTNERING CAN COMPLEMENT THE VALUE MANAGEMENT PROCESS

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ABSTRACT:

The Tung Chung Cable Car will be a unique and brand new tourism experience for local and overseas visitors, capitalizing on the cultural heritage and natural setting of the northern part of Lantau Island. The project comprises a 5.7 km cableway linking the two terminals at Tung Chung and Ngong Ping. Next to the Ngong Ping Station will be a themed village leading all the way to the Ngong Ping Plateau, where the world's largest seated outdoor bronze Buddha Statue is located. During the 20-minute scenic journey, travellers will experience spectacular 360 degree panoramic views over the North Lantau Country Park, the South China Sea, Hong Kong International Airport, the Tung Chung valley, Ngong Ping Plateau and surrounding terrain and waterways. The trip will culminate in a stunning view of "The Big Buddha" and the Po Lin Monastery as visitors approach Ngong Ping. The project was set up within a strategy of facilitated team work which involved Relationship Management, (partnering) Value Management and Risk Management. The outcomes of the two Value Management Workshops were considerably enhanced by the cooperative working relationships that had been initiated and fostered by the team through the partnering process. This paper describes the project in the context of these two workshops and shows how the team's attitude, generated by the partnering, contributed towards the successful outcome of the Value Management Process.

INTRODUCTION

The Tung Chung Cable Car Project comprises a 5.7 km cableway linking Tung Chung to Ngong Ping. Next to the Ngong Ping Terminal, a themed village will lead to the Ngong Ping Plateau, where the world's largest seated outdoor bronze Buddha Statue is located.

The Cableway starts at the Tung Chung Terminal, runs across Tung Chung Bay to an Angle Station on Airport Island, where it turns through some 60 degree before returning across Tung Chung Bay. It then runs up the North Lantau Country Park to another angle station near Nei Lak Shan, before finally descending to the Ngong Ping Terminal.

During the 20-minute scenic journey, travellers will experience spectacular 360 degree panoramic views over the North Lantau Country Park, the South China Sea, Hong Kong International Airport, the Tung Chung valley, Ngong Ping Plateau and surrounding terrain and waterways. The trip will culminate in a spectacular view of "The Big Buddha" and the Po Lin Monastery as visitors approach Ngong Ping.

The Project is being run by the Mass Transit Railway Corporation Limited (MTRCL) who has appointed Aedas LPT as design consultant supported by Mott Connell, Urbis and Chesterton Petty. The contractor for the Design Build is Maeda Ltd. Other parties include Skyrail ITM, Leitner GmbH, Mott Connell and John Carlilse Partnership (SEA) (JCP) for partnering.

The project was set up within a strategy of facilitated team work which involved Relationship Management, Value Management and Risk Management. Initially a start–up workshop focused on building cooperative working relationships, mutual objectives and an appreciation of the needs of each party to achieve these objectives. This resulted in the formation of a steering group, whose purpose was to establish a strategy for partnering and to drive progress in developing partnering behaviours and process improvements and provide the team with the skills needed to succeed in this. The Value Management Workshops which followed focused on determining development opportunities and the values and evaluation criteria for short-listing options for the design of both the Tung Chung and the Ngong Ping terminal buildings together with the associated Theme Village.

A further Value Management Workshop was held when it became clear that the business model for the project did not meet the MTRCL's financial parameters, and the capital costs of the project would need to be

substantially reduced for the project to be viable.

THE START-UP PARTNERING MEETING

The Start-up partnering workshop was held soon after the whole team had been formed. In fact, the contractor was not yet signed up, and sent along representatives on the assumption that nothing would go amiss with the final signing of the project.

Partnering is about building a true spirit of cooperation within the team and getting improvements in the way we work together for the benefit of all parties. Projects using a similar partnering framework to that have been adopted for the Cable Car Project have achieved really significant improvements in performance when compared to more traditional approaches.

The objectives of the partnering workshop were to help the team quickly build a productive working relationship with other members of the team and to help you to start to bring about improvements that will result in a significantly better outcome for all concerned than might be achieved by a more traditional approach.

The Tung Chung Cable Car Team learnt the principles of partnering, applying strategies for establishing cooperative relationships. It is necessary for people to think and behave differently if to gain the significant improvements that have been achieved in other partnering programmes. The Team established mutual objectives and strategies for a successful project outcome, understanding the needs of each organisation to achieve these. They identified opportunities for improvement in the way they worked together as a team and jointly agreed actions to address these.

THE FIRST VALUE MANAGEMENT WORKSHOP

The principle objective of the VM study was to consider the functional requirements and establish options for the concept design, which is to be complete for submission of the Section 16 application at the end of April 2003.

To achieve this, the more detailed objectives of the workshop were to:

- Define the development opportunities and facilitate Schematic Layout
- Agree the required merchandising, themeing and Urban Design strategies.
- Agree a clear sense of direction at Ngong Ping as to the approach to be taken
- Agree assumptions regarding Government Entrustment to enable design to progress
- Determine key decision dates to achieve the anticipated completion date.

The workshop followed the Value Management Methodology and participants worked through a structured approach of information gathering, analysis, creative thinking, evaluation and development

Key members of the team had participated in a two-day Partnering Workshop, culminating in a Partnering Charter. Many of the same team members came to the VM workshop and were joined by others who came to appreciate the scope of the works, to share views about the project and to participate in resolving the way forward.

Function Analysis is a tool that considers the purpose or function of the project under consideration and sets out the other purposes in a framework of abstraction. The starting point of the analysis is the Questions “Why?” and “How?” when applied to the basic function of each parts of the Cable Car System

This questioning approach served to focus the minds of the participants on the real issues facing the study, what was important and what had to be considered to reach a satisfactory outcome. Functions of the two terminals, the angle and intermediate stations, the emergency/ access trail and the themed village were identified and sorted into important, secondary and unimportant or unnecessary functions. Function Analysis Diagrams for both terminals are shown in Fig 1 and Fig 2.

The objectives of the workshop were largely met with a series of Action Items agreed by all parties. Individuals or small working groups were tasked to carry out the actions identified in this section. The Working groups would recommend the best options to be taken forward for endorsement.

The key feature of this project is that it is more than building a cable car from Tung Chung to Ngong Ping. It is about creating an experience, which includes travelling by cable car to a destination, and one which people will wish to repeat.

This point was stressed by the Operator of the cable car, as well as by the senior management of the MTRC, who joined the workshop to share their understanding with the team members.

One of the outcomes of the workshop was for members to contribute to the development of a vision. "A new icon for Hong Kong." The accompanying slogan is "The Environmental and Cultural Experience", or in Chinese, "千里大佛一線牽" and the logo would be "Tree Frog – Sitting Buddha".

The Mission Statement to achieve this vision was set out as: The creation of a unique and sustainable cultural and environmental experience, producing value for all stakeholders.

THE SECOND VALUE MANAGEMENT WORKSHOP

On 19th May 2003, following on from the first Value Management Workshop, a second workshop was convened by MTRC in association with their Consultants and Contractors for the Tung Chung Cable Car Project. The design of the project had been progressing satisfactorily up to the production of initial costs, which showed that areas had increased significantly since tender stage and the project viability may be jeopardized

The purpose of the Value Management workshop was to consider how to trim some 32% from the capital works aspects without compromising the function and quality of the Tourism experience. The function of the various parts of the cable car system were analysed to determine where unnecessary functions were being carried out and where functions could be performed in a more cost effective manner.

The Tung Chung Terminal was the main area of concern as 55% of the costs were in this building. Three key themes to improving value were considered.

Thinking of the terminal simply as a means of accessing the cable car enabled the team to focus on reducing all building areas that did not contribute to this function.

The retail function could be separated from the cable car access function as a separate business, which should stand or fall on its own merits and at this stage was considered to be not worth pursuing.

Cabin storage space requirements could be combined with space for other functions such as the passenger interchange since they would not be required at the same time.

The concept of the Tung Chung retail portion as a separate business opened the way for a low-level terminal structure with low cost foundations. One urgent action resulting from the study was to determine whether raft foundation was a feasible and better value solution over piled foundation.

At Ngong Ping, ideas for the terminal focused on opening up the platform and integrating it with village, rather than having a separate building. The use of water running alongside the walkways to link the different areas and for background noise was supported, but made more cost-effective. As the Theme Village was a main feature of the tourism experience, participants felt more comfortable when this commanded a larger proportion of the expenditure.

A decision by the Airport Authority (AA) not to allow a column within the central reservation paved the way for further considerations on how best to site the Airport Angle Station. Opportunities were identified to reduce the footprint of the Angle Station and move it into the hillside, utilising the form and mass of the hillside to support the station and resist the drive forces. Further development work was to be carried out to see how these possible changes would affect the alignment, the proximity of the cable to other peaks in the area, the tower requirements.

Travel restrictions due to SARS had prevented representatives of Skyrail or Leitner attending the workshop but they were able to contribute ideas by email prior to the event. On the day of the workshop it was decided to develop ideas first with the building team and then to consult Skyrail and Leitner by conference call to confirm or modify their suggestions.

It was also decided that once decisions on foundation type had been made and the form of the terminal structures developed, members of the Project Team would travel to Australia to discuss these face to face with Skyrail and identify further refinements.

HOW VALUE MANAGEMENT AND PARTNERING COMPLEMENT EACH OTHER

The VM Studies carried out on the Tung Chung Cable Car Project were improved by the fact that the stakeholders and participants had already started a partnering approach and their attitude to the identification and resolution of problems reflected this positive approach.

Initially the team members had realized, through the partnering exercises at the initial start-up partnering workshops, the value and importance of working together. In the intervening time, they had learned to work together and reinforce the trust that was a part of the partnering approach.

They had learnt to accept the views of other team members in a positive spirit, that they were going to be good for all parties and for the project, and if the project was a success, then all lives would be enhanced.

- VM is about getting people to work as a team. Partnering gives them the tools to do this and improve working relationships;
- VM is about getting people to look at the requirements of the job rather than their own requirements. Partnering gives people to tools to manage mutual objectives.
- VM is about looking at the function of the issue being considered. The tool of Functional analysis helps identify mutual objectives.
- Executive client support is a key requirement of VM. Executives are fully involved in the partnering process.
- VM requires Key stakeholders to be involved. Partnering requires them to buy into the process as well.
- The structured approach of VM can be used to help parties that are partnering to achieve their goals in a systematic manner.
- Good facilitation is a key success factor in the achievement of a satisfactory outcome with both partnering and value management.

A SERIES OF SUCCESSFUL INTERNATIONAL VM ACTIVITIES IN HONG KONG

Mei-yung LEUNG
City University of Hong Kong, Hong Kong

The development of Value Management (VM) has provoked construction stakeholders to focus on the relationship between people function and cost when a project is considered, designed and constructed. In view of a lack of understanding in the concept and skills of VM in general, a 'Construction Value Management' project was supported from the Professional Services Development Assistant Scheme in 2004. It updated and disseminated VM knowledge and skills required by construction professionals so as to enhance the competitiveness of the construction profession in a regional context. Through this project, construction professionals gained the benefits, both in Hong Kong and the Mainland. The project included a series of VM seminars, recognized VM courses and international VM congress. In total, over 500 *construction professionals participated into our VM activities in Hong Kong and Mainland China.

Table 1: Summary of Activities

Activities	Location	Date	Title	By
Seminars	Hong Kong	May 04	How can the Value Management Work in HK Construction Industry?	Mr. Kenneth K. KWAN / Mr. Anthony R. WILSON
		Jun 04	Is Value Engineering Successfully Internationally?	Mr. James RAINS
		Dec 04	A Key VM Technique: Function Identification	Mr. David YAU / Mr. Tony WU
		May 05	Sustainability / LEED & Life Cycle Costing- Their Role in Value-Based Design Decision-making (VM)	Dr. Stephen J. KIRK
	Shenzhen	Jun 05	Extending Your VM Business in China	Mr. George HUNTER / Prof. Haobang TAN / Mr. Chunsheng WANG / Mr. Axel Peter RIED
	Beijing	Jun 05	Enhancing Value in Facilities by VM - Attracting Investment in South China	Dr. Stephen J. KIRK / Dr. Mei-yung LEUNG
	Xian	Jun 05	Enhancing Value in Facilities by VM - Attracting Investment in China	Dr. Stephen J. KIRK
Training	Hong Kong	Jun/Jul 04	Value Engineering –Methodology & Application	Mr. James RAINS
		May/Jun 05	Value Management (VM) for Design & Construction Methodology & Application	Dr. Stephen J. KIRK
	Beijing	Jun 05	Value Management (VM) for Design & Construction Methodology & Application	Dr. Stephen J. / Dr. Mei-yung LEUNG
Conference	Hong Kong	May 05	International Value Conference "Why Re-Invent the Wheel?"	HKIVM / HKIS/ CityU

VM SEMINARS

Seven VM seminars were arranged in Hong Kong and Mainland. They not only introduced the basic VM knowledge and the successful local and international VM cases in the construction industry, but also allowed professionals participating in mini-workshop for function identification (see photo 1) and applying the LEED technique in construction projects. Three seminars conducted in Shenzhen (photo 2), Beijing (photo 3) and Xian further established a platform to exchange our VM knowledge between Hong Kong and the Mainland. This was excellent for construction professionals to extend their VM business in China.

Photo 1: Seminar - A Key VM Technique: Function Identification

Photo 2: Seminar - A Key VM Technique: Function Identification

Photo 3: Seminar - Extending Your VM Business in China

VM 'MODULE 1' COURSES

Three 40-hour VM courses were organized in Hong Kong and Beijing (see photos 4-6). All were recognized by the SAVE: The International Society in U.S.A. and the HKIVM in Hong Kong, while the VM course conducted in Beijing further cooperated with the Beijing Value Engineering Society. Workshop participants generally appreciated this full VM project-based training workshop. Some of them are preparing to attend the examination of Associate Value Specialist (SAVE) for co-facilitation of VM workshops in Hong Kong and the Mainland. Through the course, the workshop participants not only understand the international construction VM knowledge, but also can be co-facilitators of VM workshops in the industry for the facilitation of team decision-making.

Photo 4: Training - Value Engineering, Methodology & Application

Photo 5: Training - VM for Design & Construction Methodology & Application

Photo 6: Training - VM for Design & Construction Methodology & Application

INTERNATIONAL VM CONFERENCE

An International Value Conference, jointly organized by the HKIS and the HKIVM, was successfully held on 2 and 3 June 2005 in Hong Kong (see photo 7). After the opening speeches by Mr. Anthony Wilson, chairman of the HKIVM (photo 8) and Mr. T.T. Cheung, chairman of the HKIS, over 25 excellent and innovative papers were presented in the conference. Speakers came from various international countries including USA, UK, Iran, Australia, Taiwan, Hong Kong, Sri Lanka, Canada, etc. On day-1, a special interactive value session named "Taking a Mystery Drive into the Unknown" was arranged to establish a platform for the international face-to-face discussion between construction professionals and the international VM experts (photo 9). Topics raised were VM knowledge and practice such as international VM application, function analyzing techniques, qualification of VM facilitator, behavioural aspects in VM, beneficial outcomes from the VM process, etc. The session was held successful, though the stimulated topic cannot been covered in the specific period. The conference committee is planning to circulate them for further discussion in future.

Photo 7: International Value Conference

Photo 8: International Value Conference

Photo 9: International Value Conference

Photo 10: Conference Organisers

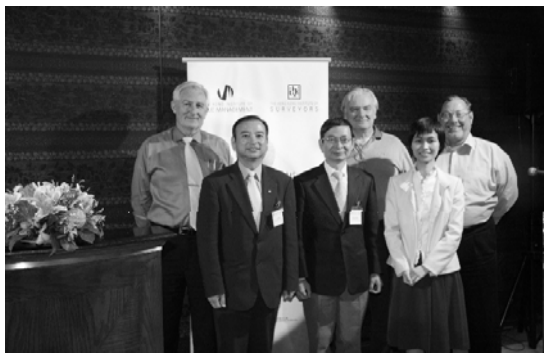

Photo 11: Conference Speakers

Through this project (seminars, workshops and conference), construction professionals can help to save money and add value to construction projects, whilst enhancing the competitiveness in the overall construction society in Hong Kong (i.e. better equipped with VM expert knowledge than our Chinese counterparts in providing value for money designs; and with more China mega project experience than our overseas counterparts as).

HKIVM NEWS

- **22-24 Oct. 2005**, National Value Engineering Conference was organized in Ningbo, China, by the Chinese Society of Value Engineering and The Value Engineering Institute of Tertiary Institutions in China. Around 100 delegates from various cities and provinces of China including Hong Kong and Taiwan have attended the conference. Professor Geoffrey Qiping Shen of the Hong Kong Polytechnic University was invited to give a presentation at the conference. He was also re-elected as the Vice-President of the Chinese Society of Value Engineering and The Value Engineering Institute of Tertiary Institutions in China.
- **27 Oct. 2005**, A luncheon meeting was held in Hong Kong Club on 27 Oct. 05. Dr. Vaughan Coffey has been invited to present the topic of "Help - is there a facilitator in the house?" The presentation was well received and it was attended by around 20 members and guests.
- **18 Nov. 2005,** Our council members including Tony Wilson, Geoffrey Shen and Mei-Yung Leung have been invited by Korea Institute of Construction Engineering and Management (KICEM) to give the presentations at the National Seminar on Value Engineering for Construction Projects (VECP 05). Please visit http://www.vecp05.org/english/vecp_eng.htm#vecp_eng_10 for further information.

FORTHCOMING EVENTS

- **15 Dec. 2005,** The HKIVM 10th Annual General Meeting and Christmas Lunch will be organised in the Hong Kong Club. The President and Treasurer will present their annual reports during the meeting. Please contact Leona Tsang at tsangkml@archsd.gov.hk for reservation.

CALL FOR ARTICLES

THE VALUE MANAGER is the official publication of the Hong Kong Institute of Value Management. It intends to provide a lively forum and means of communications for HKIVM members and those who are interested in VM. To achieve this objective, we need your support by sharing with us your articles or comments. The following are the notes to contributors:

1. Articles submitted to the journal should fall in one of the following categories: New VA/VE/VM techniques or methodologies, Review of conference VM papers, VM case studies, VM research trends and directions, Reports of innovative practice.
2. Papers or letters should be submitted on a 3.5" disc for IBM PC and A4 hard copy. Discs will be returned to authors after editing. Figures, if any, should be sent separately, in their original and preferred sizes. The length of each paper should be around 1000-1500 words.
3. The preferred software for processing your article is Word, other packages are also acceptable. If the above word processing package is not available, please find a computer with scanning capabilities; the typewritten copy can be transferred to a file as specified.
4. All articles and correspondences should be sent directly to The Editor, Prof. Geoffrey Q.P. Shen, c/o Department of Building and Real Estate, The Hong Kong Polytechnic University, Hung Hom, Kowloon. Tel: (852) 2766 5817, Fax: (852) 2764 5131.

APPLICATION FOR MEMBERSHIP OF HKIVM

If you are interested in knowing or joining the Hong Kong Institute of Value Management (HKIVM), please download the membership application form from HKIVM website http://www.hkivm.com.hk. Alternatively, please fill in the reply slip below and return it to the membership secretary of HKIVM.

Membership requirements are as follows:

Member (MHKIVM) This classification is available to individuals who can demonstrate an acceptable level of knowledge and experience in the field of Value Management. For admission, details on the Application Form are to be completed and copy of CV outlining professional employment, experiences and value management background enclosed. **Value Management Background** incorporating details of VM training and courses in VM process, application and techniques, number of studies, types of studies, role in process, days and dates should be stated clearly in the CV.

Associate Member The Associate Member classification is available to any individual who can demonstrate interest in the objectives of HKIVM, but may not have had sufficient Value Management experience to qualify as a Member.

✂ -

Request of the HKIVM Membership Application Form

To: **Dr. Frederik Pretorius**
Department of Real Estate and Construction,
The University of Hong Kong
Pokfulam Road., Hong Kong.
Tel: 2859 2128, Fax: 2559 9457
Email: fredpre@hkucc.hku.hk

Please send an application form for membership to the undersigned:

Name: ______________________ **Company:** ______________________

Address: ______________________ ______________________

______________________ ______________________

______________________ **Title:** ______________________

Tel: ______________________ **Fax:** ______________________

Signature: ______________________ **Date:** ______________________