Integration of Risk Management and Value Management – An Australian Case Study

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Abstract: This paper is part of an on-going doctoral research project based on the integration of Risk Management (RM) and Value Management (VM) in Public Private Partnership (PPP) project management. RM and VM are proven to be best practice methodologies to minimise risk and increase benefits in project management. There is a clear synergy between minimising risk and maximising value in a project or program and researchers and practitioners argue that integration of risk and value management will deliver better outcomes to the client than separate application of the two processes.

The research is aimed at exploring the potential benefits of integrating RM and VM in a single study process along with the identification of the Critical Success Factors (CSF) related to the successful implementation of an Integrated Risk and Value Management (IRVM) process. As a means of identifying the approaches used in combining the two processes, this paper puts forward a case study on the application of an integrated risk and value management study at the early stages of project development where the work was conducted in accordance with, and reflects the standards of, Value Management AS 4183:2007 and Risk Management AS/NZ 4360:2004. Research results are drawn using qualitative methods from data collected through literature reviews, case study and semi-structured in-depth interviews with the workshop facilitator.

It is identified that the client is satisfied with the outcome of the integrated workshops. The findings suggest that this approach would assist clients in utilising resources and multidisciplinary teams more effectively while reducing the cost of conducting the workshops.

Key words: Project Management, Risk Management, Value Management.

1. INTRODUCTION

Risk Management (RM) and Value Management (VM) are widely used in project management as best practice to facilitate successful project delivery (Green, Stuart D 2001; Hiley & Paliokostas 2001; Griffin & Langdon 2006; Weatherhead 2006). Effective utilization of RM and VM methodologies aid project managers to reduces uncertainty and risk exposure while maximising value and return on investment (Dallas 2006a).

Due to the fundamental similarities between RM and VM processes, scholars and practitioners have been advocating for the integration of the two in a single study processes (Moonthanah, Poynter-Brown & Jefferyes 1998; Green, S.D. 1999; Dallas 2006b; Weatherhead 2006; Haghnegahdar & Asgharizadeh 2008; Dikun & Rahman 2010; Abd-Karim et al. 2011). These proponents argue that having an Integrated Risk and Value Management (IRVM) study process would deliver better project outcomes with enhanced Value for Money (VfM) when compared to independent practice. Managing risk (both short and long-term) is an integral component of achieving any value proposition therefore both risk and value should be managed concurrently. Further, considering the significance of similarities between RM and VM, the duplication of effort in handling the two processes can be eliminated by integrating RM and VM in a single study process and thereby reducing the time and cost of conducting the processes.

This paper presents part of the research undertaken on the integration of risk and value management in Public Private Partnership (PPP) project management. The purpose of this paper is to examine the characteristics associated with the integration of Risk Management (RM) and Value Management (VM) in a single study process. Attempts are made to identify the potential benefits and the Critical Success Factors (CSF) for the integration of the two processes as core objectives of this paper.

A case study was selected to study the industry practice adopted in delivery of an IRVM study process and to identify the impact of such a process. The research methodology adopted for the selection of and subsequent analysis is described in the following section. Furthermore, recommendations will be made on how an IRVM study could be implemented in a PPP project.

2. RATIONALE FOR THE RESEARCH

Over the years, RM and VM methodologies have matured and a number of frameworks are readily available for each of these. Equally, a number of researches highlighting different aspects of the methodologies are readily available but topics are in isolation.

However, some VM frameworks and standards such as The Australian Standard for Value Management AS 4183-2007 (Standards Australia 2007) encourages clients to have a RM component within VM Studies signifying the importance of addressing risks in VM. According to Hiley and Paliokostas (2001) that although RM and VM methodologies developed in its own routes there is a very strong linkage between the two methodologies. Osman, El-Gohary and El-Diraby (2007) mentioned that best value cannot be achieved unless the associated risks are managed. Kirk (1995) emphases that, since RM and VM utilises multi-disciplinary teams of experts in workshop

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environments, the outputs of the Workshops and Studies could be minimised by managing them concurrently.

While there is an increasing demand for the integration of RM and VM Studies, Dallas (2006c) as well as Dikun and Rahman (2010) summarised that optimising project value is the main driver behind integration of RM and VM. Elaborating on the importance of the effective RM within VM Studies, Dallas argues that 'Articulating and optimising Value throughout the design development stages of a project is of little benefit if the risk run out of control and manifest themselves to undermine the successful delivery of value' (Dallas 2006c, p.4). Nevertheless, little work has been done on developing an integrated framework for RM and VM with the exception of few generic conceptual frameworks outlining the concept of integrating the RM and VM studies. Likewise Moonthanah, Poynter-Brown and Jefferyes (1998) has discussed of possible interfacing between the RM and VM frameworks. Thus far these generic frameworks are not designed for complex infrastructure development project such as projects procured through PPPs.

Furthermore, the need to 'design out risk' is increasing with the introduction of new Acts such as the "Model Work Health and Safety Act" (Safe Work Australia 2011) in Australia which has been in operation in 2 states and 2 territories since January 2012. It is anticipated that this Act will be implemented uniformly across Australia. Section 22 of the Act states that a designer of a structure that *"is to be used, or could reasonably be expected to be used, as, or at, a workplace"* must *"ensure, so far as is reasonably practicable"* that it is designed to be *"without risks to the health and safety of persons"*.

The Act also requires that a duty holder under it (including a designer must "so far as is reasonably practicable consult, co-operate and co-ordinate activities" with other duty holders. A critical point is that most professional indemnity insurance covers civil offences, not criminal offences. Under this Act if a designer is found to be in breach it is a criminal offence. Therefore it is important for designers not only to comply with their obligations under the Act but also to ensure that the client, contractors, suppliers and importers understand and comply with their responsibilities under the Act. Clearly RM or IRVM will be a useful tool for providing this communication and co-ordination and for providing the evidence that it has occurred.

While such Acts are being put in place to 'design out risk', the importance of, and the process of managing risks and value of a project becomes more complex with the increase in project size; typically in infrastructure development projects. At the same time, governments with budget constraints are adopting the use of complex project procurement methods such as PPP models in delivering large infrastructure projects, with the aim of delivering better VfM in meeting the public demands through private finance (Wilson, Pelham & Duffield 2010).

Over the years, significant efforts have been made to achieve VfM in PPPs (Infrastructure Australia 2008a, 2008b). Consequently, a number of RM and VM methodologies, which are vital tools for successful project management have been used in allocation and management of risks among the consortiums of PPPs (Office of Government Commerce 2007; Al-Saleh & Taleb 2010). The use of these methodologies has become mandatory in many countries as part of project procurement process (Haghnegahdar & Asgharizadeh 2008). Likewise, the Australian government has adopted the use of RM and VM methodologies in the procurement of PPP projects (Australian National Audit Office 2009; Queensland Department of Main Roads 2009).

The Australian government endorsed the implementation of the United Kingdom's Office of Government Commerce (OGC) Gateway Review process in 2005 following successful adoption by Victorian Government in 2003 in delivering projects (Department of Finance and Administration 2006b). Furthermore, the UK Office of Government Commerce (2007) encourages using RM and VM methodologies as essential tools for successful project delivery along the Gateway review process and advocates the use of RM and VM processes in parallel as they are interrelated.

While new Acts and regulations strive to 'design out risk', and project stakeholders increasingly demand that projects and programs deliver VfM, it is deemed necessary to investigate and develop a proper framework to conduct IRVM Studies. As such a doctoral study is underway to investigate potential for developing an IRVM framework and identify how the two processes could be integrated highlighting the CSFs for the integration of RM within VM. As such a case study is analysed to explore the practice of IRVM.

3. RISK MANAGEMENT

Risk Management principles are widely used in project management. Likewise, government authorities has put forward a number of frameworks for managing risks in the delivery of infrastructure development projects such as PPPs (Department of Finance and Administration 2006a). Standards Australia (2009) advises in its Risk Management Standard AS/NZS ISO 31000:2009 that 'organisations must have a risk management framework that integrates with the processes for risk management into the organisation's overall governance, strategies and planning, management, reporting process, policies values and culture'. Furthermore it defines risk management as "coordinated activities to direct and control an organisation with regard to risk" where, risk is an effect of uncertainty in objectives. Dallas (2006a) explains that effective RM aids in identifying uncertainties related to project objectives and facilitates for management action to eliminate or reduce them. Clifford (2006) and Office of Government Commerce (2007) and emphasizes the need to conduct RM at project inception wherever possible and to engage key stakeholder in the process.

Scholars argue that while there are a number of frameworks for RM, practitioners tend to use their methodologies based on nature of the project and the risk framework used by the client's organisation (Feili, Nasiri & Akar 2012). In the case study standard for Risk Management AS/NZS 3460:2004 is used as the baseline while AS NZS ISO 31000:2009 is a newer standard that supersedes the former.

4. VALUE MANAGEMENT

In project management, the term 'Value Management' is not covered by a universally accepted definition where a wide range of definitions are used to describe the 'same approach or stage of application' (Venkataraman & Pinto 2008). The systematic processes used in the appraisal of project functionality as a means of delivering effective project solutions are greatly referred to as Value Planning (VP), Value Engineering (VE), Value Analysis (VA) and Value Management (VM). Although distinctions subsist in the terminology of VA, VE and VM, they are widely used interchangeably (Shen & Liu 2003; Instiute of Value Management Australia 2012). Due to the broad terminologies used to describe the VM concepts, which depend and differ on the context, situation, and the geographic location, it is important to understand them. According to Mohamad, Coffey and Preece (2011) the value concept is regarded as VM in places like UK, Europe and Australia

is still referred to as VE in United States and Japan. Zimmerman (1982) argues that VM is used to describe the entire field of value endeavours and the three terms are used in the industry, to describe the application of value techniques during the project life cycle.

It is observed that there are numerous definitions used to describe VM in literature and industrial standards. The Australian Standard for Value Management AS 4183-2007 (Standards Australia 2007) which originated as AS/NZS 4183:1994 is a well-regarded standard used by VM practitioners which defines VM as; 'Value Management is a structured and analytical process in which a prescribed Work Plan is followed to achieve best value and , where appropriate value for money in products, processes, services, systems and organisations. The process may be applied to management decision making at any level of an organisation and is equally appropriate for public and private sector application'.

The standard AS 4183-2007 acknowledges the approaches adopted by Miles on the 'Job Plan' approach and extends it to from a 'Work Plan' and refers to VM as the application of this 'Work Plan'. Furthermore, contrast on terminology is made on VA and VE where VA is the methodology adopted in the design and procurement of existing products and processes whereas VE is applied specifically in the early conceptual and design stages (Standards Australia 2007).

For the purpose the research, and in this paper, the term 'Value Management' is used as defined by AS 4183-2007 rather than the common term 'Value Engineering'. The argument put forward is that; VM considers a broader strategic management approach to value rather than the narrow forces on technical performance considered in the common terminology of VE. It is encapsulated that VM offers a collective strategic framework to achieve VfM under a systematic procedure within which VE provides optimal design solutions.

It should also be noted that AS 4183-2007 encourages the application of VM in association with other management systems such as Project management, Gateway Review Processes and RM. Significantly the VM Work Plan determines how VM should be applied in specific situations and implicitly but not explicitly provides for the integration of risk. Keeping this in mind, the research is aimed at identifying the best ways of integrating RM processes within VM methodology

5. RESEARCH METHODOLOGY

This paper explores how an organisation conducted IRVM Studies. A qualitative case study is used to gain in-depth understanding on how RM and VM methodologies are used in the delivery of an infrastructure development project by an organisation. Furthermore, the benefits gained as a result of its application were reviewed. It is also examined how these two methodologies are integrated into a single study. Attention is drawn to identify the CSF that need to be considered for integration and implementation of an IRVM Study.

A case study is chosen for the investigation as Yin (2009) argues that, a case study is the most appropriate method to answer the how and why questions of research relating to 'decisions, programs, the implementation processes and organisational change'. According to Nisar (2007) case studies enable to elucidate internal and external information on the distinctive processes and structures used by the organisations.

The case study was identified during a pilot study on the research question where semi-structured interviews were conducted amongst industry experts as part of a Doctoral research on IRVM in PPP projects. This case study is selected based on project size, availability of information, innovativeness of projects, time of project execution and level of its engagement in conducting RM and VM processes.

The common practice in procurement of PPP projects is to conduct RM and VM Studies independently (Hiley & Paliokostas 2001; Weatherhead 2006). This limits exploration of the exact nature of integrating RM and VM in procurement of PPP projects. Nevertheless, as a steppingstone, it will be worthwhile to investigate the practice of integrating RM and VM in the delivery of infrastructure development projects and transferring that knowledge in formulating a framework for PPP projects.

Due to embryonic stage of the concept and the lack of availability of case studies, a single case study is presented in this paper. Nisar (2007) argues that although conducting few case studies limits its capacity to be generalised, it creates the grounds for discussing emerging ideas and issues, and offers a real life context to explore and understand.

As an attempt to gain an in-depth analysis about the cases study, workshop reports and other related documents were analyzed in detail. Additionally, semi-structured interviews were conducted with the IRVM Study facilitator. Qualitative methods are used to analyze and present the data which is discussed in the following sections.

6. CASE STUDY

The project under scrutiny is a new visitor walk-through animal exhibit and adventure playground in a zoo with a capital budget of 7.5 million Australian dollars. A conventional procurement strategy was used in delivering the project where the design is completed by the design team and construction was procured through a competitive tender process. The Client had established the following project objectives for the new development:

1. To achieve project design excellence in presentation, functionality, interpretive visitor experience and safety;
2. To develop assets that enhance animal, visitor and staff wellbeing;
3. To deliver best practice and cost-effectiveness in construction, operation and maintenance of zoo assets;
4. To provide an area within zoo grounds that creates a direct and positive connection between wildlife and people through an integrated approach, incorporating elements of research, conservation, education and recreation;
5. To develop a marketable product, revenue and sponsorship;
6. To introduce a new focal point to encourage visitors to pause and extend their dwell time;
7. To maximise the uses of the area's landscape, surrounds and extensive vistas to the harbour.

As required by the contract the project architect employed John Bushell Value Management Pty Ltd (JBVM) as an independent RM and VM facilitator to prepare for, conduct and report on risk and value management studies on the project as follows:

A- Combined 2-day Value / Risk Management Study on 4 March and 9 March 2011 at the Brief / Concept Design Stage after the site analysis had been completed and initial meetings between the design consultants the client representatives had occurred. Risks identified and ranked were categorised as Safety or Business.

B- Half-day Value Management Study on 10 August 2011 at the conclusion of the Concept Design Stage.

C- A 2-hour Risk Management study on 1 December 2011 on three specific areas of potential risk based on the proposed design that are not covered by the Building Code of Australia or any other regulations.

D- The key consultants, including JBVM, advised the client on the specific issues for the organisation and its contractor in respect of the NSW Work Health and Safety Act 2011 that came into force on 1 January 2012. (An equivalent version of this Act will shortly operate in all states in Australia and binds "designers, manufacturers, suppliers, importers, installers plus people who construct and commission workplaces" to work to meet operational health and safety obligations)

The work was carried out in accordance with the following standards:

1- Value Management AS 4183:2007
2- Risk Management AS/NZS 4360:2004 – risk is to be "as low as reasonably practicable"
3- Risk Management for the adventure playground. The IRVM consultant's role was to ensure that the client understood and accepted that risk was being introduced into the playground which will be designed to be "as safe as necessary" (not as safe as possible or practicable) and that it would be managed under a separate consultancy in accordance with the European Standard EN1176:2008 (not AS4299:1996).
4- Recognition of the Client's Duty of Care at Common Law (particularly in respect of the issues not covered by existing legislation).

The results of the studies were that the pre-tender estimate for the design is within the original budget. All risks were reduced by the process, the majority to "Low", with a small number of "Medium" risks to be managed by the Client in accordance with the Risk Management Plan. The major business risk identified was the achievement of effective dynamic management of the exhibit to ensure that it did not become overcrowded and that at busy times visitors were not disappointed by the experience. This was addressed by planning the facility for flexible staffing and by ensuring that queuing visitors would be able to see the animals from the queue before entering the exhibit.

The design and documentation project proceed in accordance with the contractual program with the exception that contract documentation continued during the 6-week period that had been allowed for Development Application approval by the local council. The Client was very pleased with the design outcome and did not want a delay to finalising the Tender Documents, which were issued in April 2012.

Further, the lead design consultant advised that the design team found the IRVM process very useful as it provided an additional perspective on the project and opened up areas for design consideration that might not otherwise have been explored.

7. BENEFITS OF INTEGRATION

It is widely argued that risk and value cannot be isolated as there are added benefits of conducting the two methodologies in a single Study rather than individual Studies (Moonthanah, Poynter-Brown & Jefferyes 1998; Green, S.D. 1999; Dallas 2006c; Weatherhead 2006; Othman 2008; Dikun & Rahman 2010; Abd-Karim et al. 2011). By conducting an integrated RM and VM Study for the zoo project, the following benefits are recognized when compared to individual application of the methodologies.

1- There is actual saving in the people time for the Client and designer organisations as the same people are involved in doing both RM and VM Studies.
2- Separate, cross-referenced, RM and VM reports are provided thus recording the processes accurately for posterity and providing clients with a record of "due diligence" that VfM and risk have been effectively addressed.
3- Notably, communications amongst project stakeholders were improved.
4- It created an effective platform to generate ideas and effectively looking at ways to improve value while reducing or eliminating risk.
5- It assisted in identifying and addressing the risk in a cost effective manner, which also took account of the value aspect of risk – particularly important in the case of Business risks.
6- Having an IRVM facilitated for the elimination of constant recycling of ideas reducing conflicts and time.

8. CRITICAL SUCCESS FACTORS

As discussed above, there are many benefits of integrating RM and VM. Hence there is no question of whether to have an IRVM Study for a project but as Griffin and Langdon (2006) argues the question is how they need to be incorporated. Likewise, the identification of CSF's is one way to tackle an effective integration process. Leidecker and Bruno (1984) defined Critical Success Factors (CSF's) as "CSF's are those characteristics, conditions or variables that when properly sustained, maintained, or managed can have a significant impact on the success of a firm competing in a particular industry". While there is a lack of literature highlighting the CSF's for an IRVM Studies, it is important to overcome this drawback and identify the CSF's. Hence attempts are made to clarify the CSF's for integration and implementation of RM and VM in a single Study using the zoo project as a case study.

8.1 Critical Success Factors for Integration

The following are the CSF's that were identified as important for the integration of RM and VM in a single Study process.

1- Selection of the appropriate standard and methods; while there are a number of standards for RM and VM depending of geography and organisational practice, it is important to choose appropriate standards to be used in the studies. It will be beneficial to select methodologies that the Study participants are accustomed with.
2- Effective combination of RM activities and VM phases.
3- Level of integration: in integrating the two methodologies risk and value should be addressed separately initially and linked at the "idea generation" phase of the VM Study.
4- Selecting appropriate tools and techniques: since both RM and VM use similar techniques such as "idea generation" for the resolution of risk and improvement in project value, selecting the most suitable techniques for each activity remains critical for the success of integration.

8.2 Critical Success Factors for the implementation of IRVM Studies

To make the IRVM Study a success an organisation must have a well-defined implementation strategy. This section looks at how the IRVM Study was implemented in the zoo project and the CSF's that need to be considered in delivery of an IRVM Study.

1- **Client's willingness**; one of the key success factors of an integrated Study will be the client's willingness to conduct an IRVM Study. Hence it is important to inform and educate the clients on the importance and appropriateness of conducting an integrated workshop.
2- **Scope of the Study**; the scope of the IRVM Study is particularly important. For an IRVM to be successful, as a

steppingstone the scope, objectives and milestones that need to be achieved through the Study should be defined. While the Study scope defines the desired outcomes of the IRVM Study it should not be confused with the project scope. Additionally contingencies must be given to accommodate any change to Study scope with the development and change in project scope.

3- **Scope of the project**; it is critical to identify and define the project scope as soon as possible to limit any changes to later on. Within the project scope the objectives and its relative importance should be identified during the planning phase. Failure to do so may lead to frequent changes in objectives leading to scope creep resulting in the risk of additional time/cost and attenuation of value. In this case operational functionality, costs and risks were judged to be far greater than design and construction – and will continue for a much longer period. Therefore the study placed particular emphasis on envisioning how the facility will be operated on a day-to-day basis and thus what needed to be designed and built to support this operation.

4- **Facilitation of the workshop**: it is important to have an experienced independent facilitator who understands both RM and VM to facilitate the Studies where the facilitator is a certified practitioner in both RM and VM. If not, it has to be driven by VM because that's where the common link, Functional Analysis, is developed. Then the RM components can be conducted by a RM expert. While RM and VM are generally regarded as two separate disciplines it is important to promote the benefits and educate VM professionals in RM practice. In addition, an independent facilitator will eliminate any political pressure from inside the organisation.

5- **Lead Discipline**: IRVM studies are best driven through VM methods and facilitation because improving functionality whilst delivering VfM is condition precedent to addressing risk. (No one will thank you for reducing risk whilst leaving unnecessary cost in a project or program.)

6- **Location for Study workshops**; to have a neutral venue for the Study with adequate space and technical support facilities will assist the team to focus on the Study process.

7- **Involvement of key stakeholders**; while there is no right or wrong amount of people that need to be involved in a Study key decision makers and possessors of information and experience need to participate. It is particularly important to have the participation of senior management from the client organisation at the commencement and conclusion of the IRVM Study. A poor stakeholder representation is a major contributor for project risk as it would hinder the process of identifying the stakeholder needs. Hence it is critical to engage essential stakeholders in the early stages of the project.

8- **Technical Independent**; A useful participant in an IRVM Study is a "technical independent" – a person with good knowledge and experience of the subject of the Study but who is independent of the project or program and the other participant groups. (In this case independence was provided by a participant with experience of the animals in a sister zoo facility.)

9- **Duration of Study and Workshops**; sufficient time should be allocated for the Study based on the project size and nature. An IRVM Study may range between 2 to 5 days for the Study Workshops itself. It is also important to give breaks in between workshop sessions. Furthermore it is identified that giving a few days between major sessions assist the participants to think over and develop fresh ideas.

10- **Sharing of information**; identifying the client requirements is very important. There should be a well-defined scope for the IRVM Study. All project stakeholders that are invited for the IRVM Study must be supplied with all relevant information regarding the project and objectives of the Study. Participants must be supplied with an agenda prior to the IRVM Study. A mechanism should be established to collect and share information during the Study. All activates must be properly documented for future reference.

11- **Timing of the Study**; project clients should place special attention on the timing of the RM and VM studies. Generally the earlier the better. IRVM studies can be performed in the brief stage to achieve consensus in the Client organisation on the real needs of the project. The brief / concept design stage is also a key point for such studies as the brief can be questioned within the framework of concept design considerations. With some projects the risks may not be fully comprehensible at the outset and in this case it could be better to do a VM study first and then a RM study later concluding with an IRVM study.

9. CONCLUSION

With the assistance of a case study, this paper has presented the application of an integrated risk and value management study in a small but intensively used facility. The research has explored how RM and VM methodologies are integrated and verified the benefits gained by the integration of the two methodologies.

It is anticipated that this paper covers the CSFs that need to be considered in the integration and implementation of an IRVM Study. Through the case study it is observed that organisations and RM/VM facilitators should follow the basic principles of both RM and VM even in an integrated Study. A clear focus should be kept on identifying risk and values independently while the processes are integrated at the "idea generation" phase of the Study. Similar to individual application of RM and VM, it is important to involve all the key stakeholders in the IRVM Study and supplying them with appropriate background information. The most critical success factor for a successful implementation process is gaining the clients willingness for the Study. Hence it is important to educate the project owners regarding the benefits of conducting an IRVM Study as an essential component in the project procurement process.

From this case study, it is evident that project owner is very satisfied with the outcome of the IRVM Study during the project procurement process.

RECOMMENDATION

A single case study has its limitation of identifying the common trends in the application of an IRVM Study. Hence additional case studies will need to be undertaken to identifying the common trends in associated with the practice of integrating RM and VM in a single Study. Furthermore it will also assist in developing a more accurate framework for development of the desired IRVM Study. While there are a number of CSF's it is also important to identify the significance of each factor through a factor analysis specific to each project.

Use of RM, VM and, more particularly IRVM Studies, in PPP projects could potentially deliver very significant benefits to the projects and programs and to the community. As with the use of these tools elsewhere the **scope** and **transparency** of the Study will be critical to achieving the potential benefits. In PPP projects the scope must encompass the financial, operational and maintenance aspects of the project as well as the "bricks and mortar". The appropriateness of forecast asset utilisation and the method of financing of PPP projects in Australia have been the

subject of some criticism, particularly by Goldberg (2006). On the basis of his research Goldberg concluded; "This (PPP) approach to financing road infrastructure is not a financially or economically responsible one". A paper by Phillips (2007) on Sydney's Lane Cove Tunnel privately financed project concluded that "It is hard to see how one Bus Lane each way for two kilometers could be worth over a billion dollars". The focus of any IRVM studies on PPP projects would clearly need to demonstrate that the required functionality can be delivered whilst transparently demonstrating VfM for the community as a whole, not just for sectional interests.

In light of these findings, additional research on the current global best practices on the practice of integrating RM and VM in infrastructure development projects will facilitate the development of IRVM Study framework for PPP project. Evidence to date indicates significant potential to achieve better value for money for all project stakeholders. Additionally, governments and regulatory bodies need to consider mandating the application of "formal" and transparent RM and VM methodologies and IRVM within project consortia for PPP projects.

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