



## Chapter 8: Secondary Case Study Review

The detailed case studies provided valuable insight into the formal and informal management of project governance principles in large, cross-country, capital projects. Confirming the observations made by the Delphi participants, the NGT participants supported the potential value of working towards a structured project governance framework to assist in creating an environment within which the project can be managed towards success.

A major stumbling block for this study was the reserved response from project managers to provide no, or very limited access to information on LCPs that evidenced severe failures, especially where the failures could potentially be traced to project governance issues. Various attempts were made to access a number of projects, but even with an undertaking to conduct an anonymous study, no participation could be achieved. Given this unfortunate situation, a process was launched to conduct secondary case studies.

With secondary case studies, various project cases available in literature were searched and their outcomes evaluated against key parameters contained in the CPGF. A total of 15 secondary cases were identified reviewed and clustered into categories ranging from failure, to questionable and successful. Although the clusters do provide trend indications of where most projects fail or achieve success, it would be difficult to generalise this outcome due to the potential subjectivity of the case study origin. However, a clear observation is that the key determining outcomes could be traced to at least one assessment area in the CPGF.

The following paragraphs provide information on how the secondary cases were obtained, the method of assessment, the mapping of the cases against the assessment criteria and final conclusions.

## 8.1 Searching for secondary project case studies

During the search for project case studies on LCPs it became clear once again that proper project cases are very difficult to obtain. As opposed to strategic, marketing and human resource management, the compilation of proper project cases has lagged tremendously in general theory and academic literature. Obviously, this provides a major opportunity for academia and researchers to fill this gap in the field of project management teaching and research.

The criteria for case study usage / non-usage were listed prior to the commencement of the search and are tabled below (Table 8.1).

**Table 8.1: Criteria for qualifying the usage / non usage of available project cases**

Qualifying criteria	Disqualifying criteria
<ul style="list-style-type: none"><li>• Must be an actual project case</li></ul>	<ul style="list-style-type: none"><li>• Project case should not revolve around project management or control items?</li></ul>
<ul style="list-style-type: none"><li>• Project must involve multiple stakeholders, including the broader society and preferably access various sources of funding?</li></ul>	<ul style="list-style-type: none"><li>• Project cases must not have a marketing / promotional approach</li></ul>
<ul style="list-style-type: none"><li>• Projects involving multiple countries and multiple companies would be preferred</li></ul>	

The criteria for project case selection were based on an attempt to discover real life cases with a fair element of objectivity.

Marketing and teaching case studies were not considered, nor cases where detailed project management and control activities are discussed.

The search for project cases included various methods, from formal key word searches via an official academic information service, to enquiries, project institutions and general internet browsing. A comprehensive list of candidate projects was compiled and project that did not meet the criteria were eliminated. The process and reasons for elimination are discussed in the following paragraphs.



### 8.1.1 Key word searching

In order to obtain information on projects that were involved in some form of legal dispute, a key word search was launched with the University of Pretoria's Academic Information Services (UPAIS), searching for:

- Court cases where legal action was taken against the owners of LCPs.
- General project cases studies and their outcomes.

It was hoped that the first search would result in the provision of official court cases in which the case subject and ruling would indicate some relation to a project governance assessment area. The outcome provided only two project case studies, namely the Ok Tedi copper mining project in Papua New Guinea (Zillman, Lucas and Pring, 2002) and the oil exploration project in Ecuador (Boyle and Anderson, 1996). Both project cases discussed the legal actions taken to protect the environment and social well-being of the indigenous population.

The second general project key word search provided, mostly, superficial in-company case studies that are predominantly used for marketing and promotion purposes. Due to the promotional and marketing approach, the potential use of these types of case studies was limited in the context of this dissertation.

### 8.1.2 Enquiry to project management institutions

The search for project cases continued with approaches to established project management institutions, namely PMI, APM and IPMA.

During 2006, PMI produced a collection of project management case studies, authored by Frank T. Arbani (2006). The case studies included:

- Mars Pathfinder
- Superconducting Super Collidor



- The Chunnel Project
- Miller Park Stadium
- Springfield Interchange, and
- Glasgow Science Centre Tower

However, all these case studies were viewed against the PMBoK (2000) project process, and therefore addressed project control rather than the elements of project governance.

Additional project case studies available on the PMI website (Summary Case Study Library, 2007), included:

- The 2005 Canada Games
- AAA of Northern California
- Baldwin Water Works
- Colorado Springs Welcome Home Parade
- Denver International Runway
- Project Flexibility on a Global Scale Huawei Technologies
- NASA Autonomous Rotocraft Project
- New Zealand Wind Farm
- Quartier International de Montréal
- Saudi Aramco Haradh Gas Project

Again, these projects could not be used due to the marketing approach and promotion of project management principles.

Another source from this search that could not be utilised was the case studies contained in the book by Kerzner (2006). Again, these case studies revolved around project management and control, not governance.

### **8.1.3 Internet search**

An extensive internet search provided the most useful source of information. Given the criteria listed, project cases could be retrieved from sources such as:



- United Nations ([www.un.org](http://www.un.org))
- World Bank ([www.worldbank.org](http://www.worldbank.org))
- European Bank for Reconstruction and Development (EBRD) ([www.ebrd.org](http://www.ebrd.org))
- Probe International ([www.probeinternational.org](http://www.probeinternational.org))
- Rights Action ([www.rightsaction.org](http://www.rightsaction.org))

Projects found on the World Bank, United Nations and EBRD websites and databases focused on PPPs and developmental projects. These sources are valuable in terms of coverage of multiple countries, companies, governments and stakeholders. The only criticism is the potential subjectivity in promoting these institutions' goodwill when listed on their own websites.

The projects listed by Probe International and Right Action were mostly concerned with projects in potential violation of ethical, social and environmental conduct. These institutions are concerned with highlighting potential harm that projects could cause and actively engage in investigations. Obviously, these are reputable resources, but care should be taken with regard to potential subjectivity and protection of interests.

#### **8.1.4 Selected case studies**

Eventually the search for case studies resulted in various references to projects that had to be viewed in terms of their outcomes. A total of 15 projects were selected and are summarised in Appendix E. The projects were categorised as being 'successful' (s), 'failed' (f) or 'questionable' (q). The successful and failed projects were categorised in terms of their eventual outcome and economical / social / environmental and sustainability impact, whilst the questionable projects still had pending issues during the writing of this dissertation.

The projects selected were numbered according to the corresponding Secondary Case Number 'B' in Appendix E:

B1 - Danish Sports Facility (f)



- B2 - British Embassy in Berlin (s)
- B3 - The Mapeley PFI project: sale of land and building by the Inland Revenue (f)
- B4 - The Chesapeake Forest (s)
- B5 - The Zurich Soccer Stadium project (s)
- B6 - D47 Motorway Project (Czech Republic) (f)
- B7 - Tajikistan Pamir Private Power Project (s)
- B8 - Scottish Schools (q)
- B9 - Bulgaria, Sofyiska Voda – Water Supply Programme (s)
- B10 - Vancouver Landfill Cogeneration Plant (s)
- B11 - Channel Energy Poti Port Project, Georgia (s)
- B12 - New Multi-purpose Terminal in the Baltic Seaport of Ventspils, Latvia (s)
- B13 - Three Gorges Dam (q)
- B14 - Ecuador Oil Production (q)
- B15 - Ok Tedi Mine – Papua New Guinea (f)

In total, 8 projects were successful, 4 were failures and 3 are still questionable. The selected projects and their categories formed the basis for further evaluation.

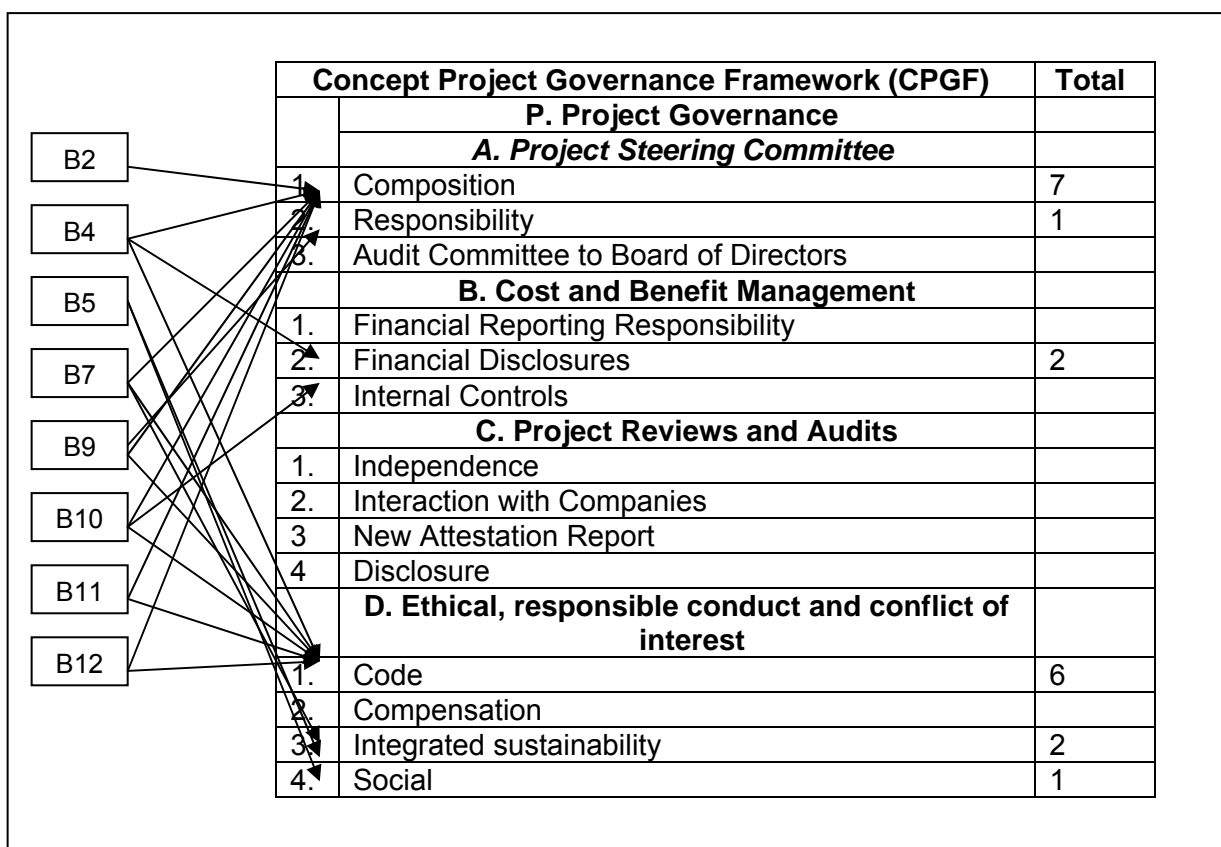
## **8.2 Mapping the project outcomes on the CPGF**

Each project's outcome was assessed against the CPGF to see 'where things went right or wrong'. For example, where the project established a successful venture through well structured financing arrangements and managed environmental studies, the project was linked with:

- A. Project Steering Committee – 1. Composition, as well as
- D. Ethical, responsible conduct and conflict of interest – 1. Code

The detailed description of each specific element is given in Appendix E. The total number of repetitions for each assessment area is also given. The summarised mapping of the project outcomes is allocated to 'successful',

‘failed’ and ‘questionable’. The ‘successful’ projects’ mapping is given in Figure 8.1 above.



**Figure 8.1: Successful project mapping**

On the successful projects it is evident that the most prominent drivers were ‘Composition’ (seven references) of the Steering Committee and ‘Code’ (six references) and which includes adherence to ethical, social, socio-economic and environmental compliance and management. Under ‘Composition’, the structuring of financial arrangements and contractual agreements played a dominant role (see Appendix E). Again, due to the origin of these project cases, namely development agencies, it was expected that the mentioned areas would be considered important.

The same exercise, as was done with successful projects, was done with failed projects. The results are given below in Figure 8.2.

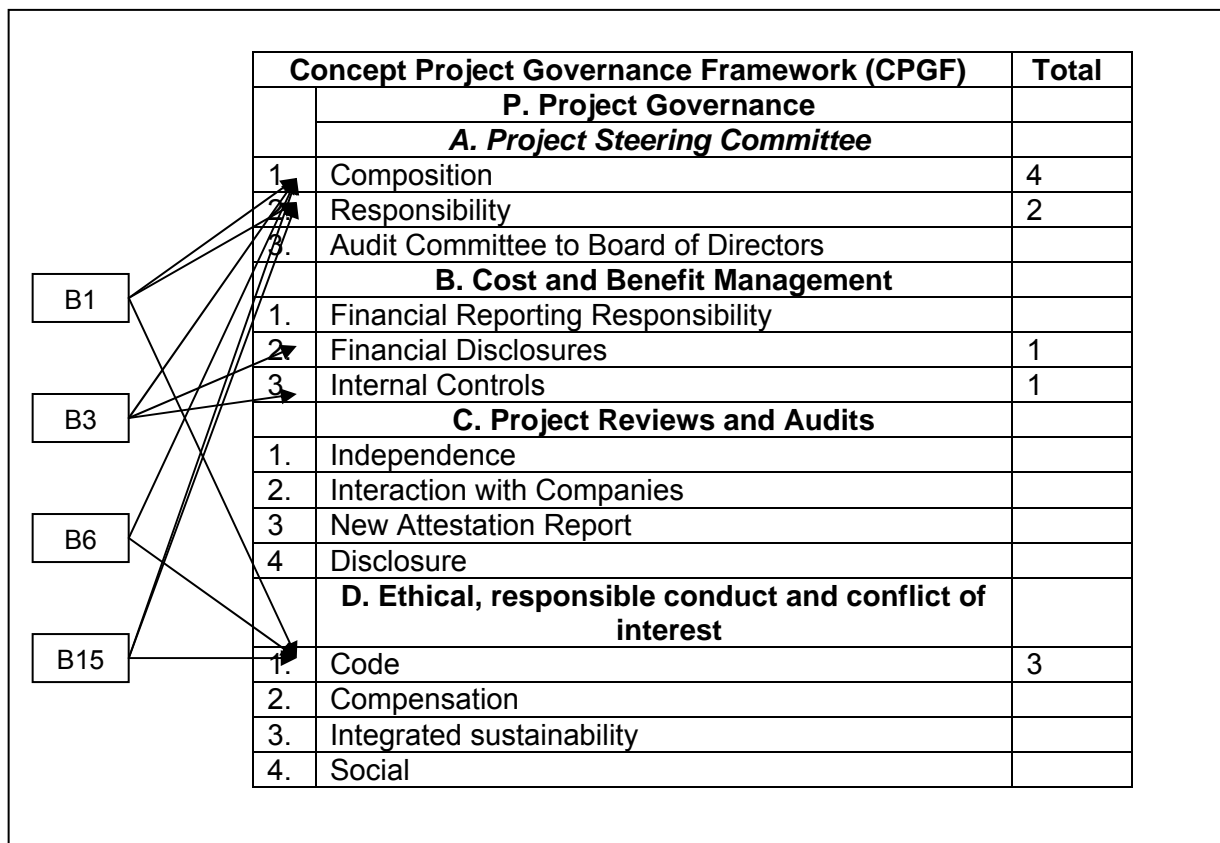


Figure 8.2: Failed project mapping

An interesting result for the failed projects is that the ‘causes’ of project failure are also the ‘causes’ for project success. Badly structured, financed projects not adhering to the codes of conduct relating to the broader society seem to be bound for failure.

Figure 8.3 below illustrates the assessment of ‘questionable’ projects and is given below (Questionable Project Mapping).

Again, as with the successful and failed projects, the ‘questionable’ projects indicated that Composition, Code, Integrated Sustainability and Social parameters have a deciding influence on project outcomes.



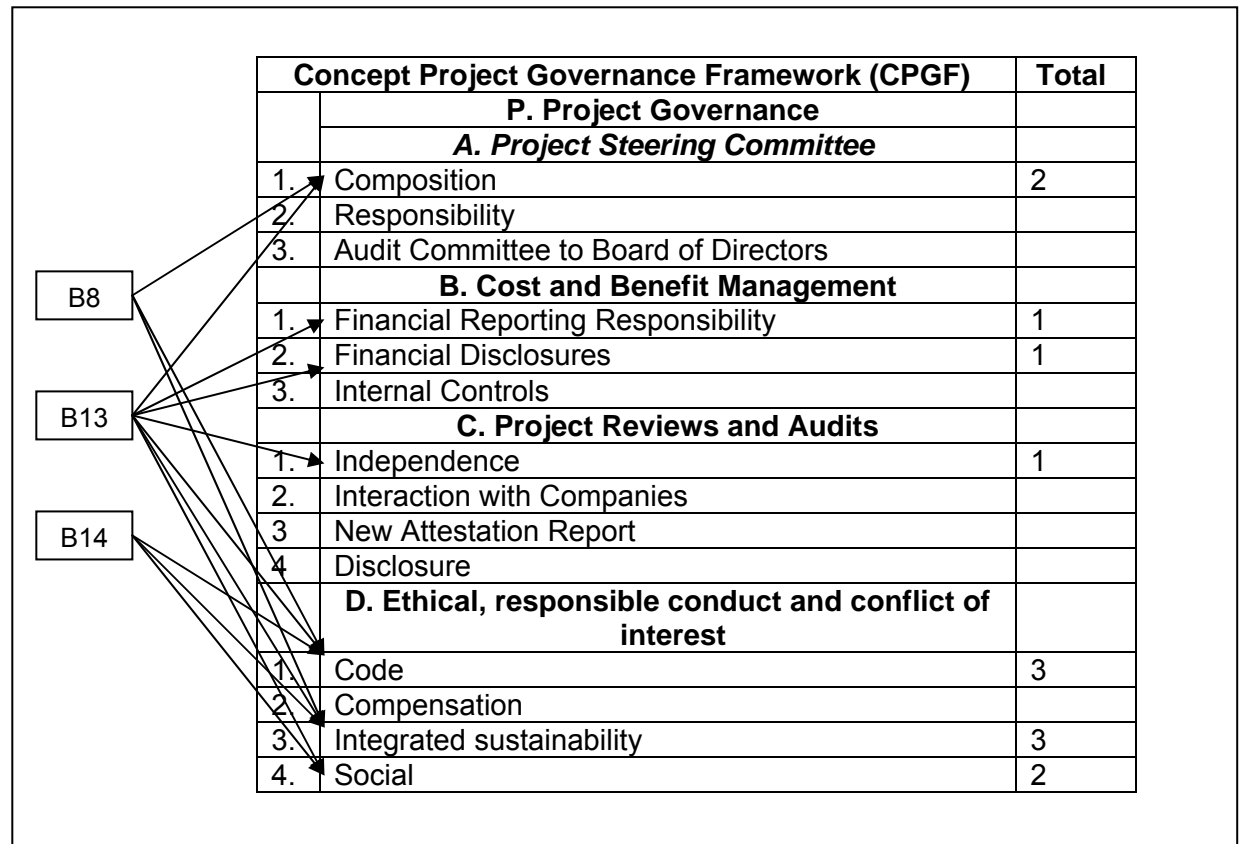


Figure 8.3: Questionable project mapping

### 8.3 Summary

As indicated by nearly all the Delphi study participants, a project governance framework must be generic enough to allow for the majority of variables found in LCPs but also flexible enough to adjust to specific project requirements. In order to assess the general application of the CPGF, 15 case studies were selected through a general internet search and assessed against the criteria listed in the four sections of the CPGF.

The projects were categorised in terms of whether the project outcomes were successful, a failure or questionable. The main reasons for the outcome were identified and linked with an assessment category in the CPGF.



From the results, it was clear that for every project at least one CPGF category could be linked to the main causes of the project outcomes.

Thus, in terms of general application and completeness, the CPGF content proved to be sufficient and these 15 cases did not indicate any further need for modification of the CPGF.

A second observation made during the secondary case study exercise was that certain assessment categories have a higher frequency of occurrence than others. Although this could be due to the type of projects assessed, it remains significant that:

- The composition of the steering committee, especially the members' ability, or inability, to structure the project financially and contractually, had a major impact on project outcomes.
- The adherence, or non-adherence, to a code of ethical, responsible conduct and conflict of interest, also had a significant impact on project outcomes. In most of these cases, addressing socio-economic sustainability and environmental concerns proved to be key to ensuring a positive project outcome.

During the search for case studies it became clear, once again, that the availability of well documented project case studies remains a challenge. The use of case studies forms an integral part of management teaching and research and thus far project management seems to lag behind other management fields.

Given the findings of the literature reviews on LCPs, corporate governance, the Delphi study, as well as the results from the primary and secondary case studies, some conclusions can be drawn in the formulation of a final project governance framework.



## Chapter 9: Conclusions and Recommendations

Project governance is a topical subject. Debates and arguments with respect to its purpose and content are becoming vibrant in project management literature and practice. Without a proper, generally acceptable definition of the term 'project governance', various academics, consultants and practitioners have adopted the term and apply it to virtually any form of governing activity. The term has been used in the field of information management (where access to data is 'governed'), the control or management of project managers and managing programmes (as opposed to projects). However, within all the various applications of the term, a common objective is surfacing: "to improve the overall performance of projects in terms of meeting project objectives, within time and within budget".

This dissertation focussed on the definition and application of project governance in the field of LCPs. To define a LCP is problematic because projects with a relatively small capital value can have a large impact (i.e. a pilot nuclear reactor). Conversely, a relatively simple project can have a large capital outlay (i.e. replacement of a power station turbine and compressor set). For the purpose of this study, projects valued at over US\$ 50 million were considered. However, where smaller projects had a significant impact on the environmental and socio-economic fields they were also added to the research data base. Given this flexibility, it was still decided to exclude projects with a capital value of less than US\$ 10 million.

The following paragraphs provide a short overview of the literature study and rationale behind the topic of project governance. This background was used as a foundation to define the concept of 'project governance' and what it should comprise. The end product of this part of the study, which was done by means of the Delphi method, was the CPGF. The CPGF was then used to evaluate two case studies in depth, as well as 15 smaller cases studies. The purpose of the case studies was to evaluate the completeness and general



applicability of the CPGF. Given the lessons learned in applying the CPGF to all the case studies, a final PGF is proposed. This chapter concludes with recommendations for future studies on the topic of project governance.

## **9.1 LCPs and the search for performance improvement**

Over the years, the performance of LCPs in the energy, infrastructure, mining, petrochemical, nuclear and other heavy industries has remained questionable. Even with the invention and development of advanced project management tools, techniques and software systems, the overall performance of LCPs remains poor in terms of meeting cost budgets and intended benefits. Some project cost overruns amount to more than 100% of the initial budget and could be referred to as ‘scandalous’. This observation prompted the search for potential solutions outside the immediate sphere of project management and control.

In the field of corporate management, evolutionary developments brought about formal approaches and guidelines to the management of organisations. A major management intervention occurred in the late 20<sup>th</sup> century after corporate financial scandals with the establishment of corporate governance guidelines and laws. With projects, sometimes referred to as temporary organisations, it seemed possible that project management could benefit from these principles and bring about a higher level of responsibility in project cost estimation and development.

## **9.2 Corporate governance**

The evolution of the corporation can be traced back to 3000 BC. The process of corporate evolution saw a cyclical alteration of ownership and control being centralised by governments and privatised. The modern privatisation notion was prompted in the early 1980s by the UK government and spread around the globe. With pressure on private corporations to perform financially for their shareholders, as well as major incentives offered to top management, high risk dealings and decisions were taken. With the enormous pressure on



performance and subsequent lucrative financial incentives, some top managers were drawn into fraudulent activities and misrepresented company financial status for their own benefit. These practices led to major scandals (e.g. Enron, Parmalat, Worldcom, etc.) and prompted government to again intervene. This intervention saw the emergence of corporate governance in various forms, from laws to guidelines. The overall intention of corporate governance was to establish “an environment that defines the parameters for responsible corporate and managerial conduct” and corporate governance was applied to all spheres of organisational activities, from private to governmental institutions.

This environment, within which the parameters are set for management to run their organisation’s strategic and operational activities, does not exist in the world of projects. Various statutory guidelines exist for projects initiated under non-governmental institutions like the World Bank, United Nations, International Monetary Fund, etc., but the term project governance, in the same context of corporate governance, has not been defined as yet.

### **9.3 Defining ‘project governance’**

In order to define the term ‘project governance’ a Delphi study was launched to obtain input from participants involved in project management practice as well as from academics. The Delphi study was conducted over two rounds, after which convolution was obtained. A total of nine questions were posted and the final answers are given in Table 9.1 below.

The results from the Delphi studies provided some form of definition for project governance. They also confirmed the lack of a project governance framework or model that would provide and define an environment within which large capital projects could be initiated and implemented. It was also clear from the feedback that any form of project governance framework should be strongly linked to the principles of corporate governance and must be generic to allow for customisation as required.

**Table 9.1: Delphi results**

No	Question	Final Response
1	How would you define / describe the concept of project governance?	Project governance is a set of management systems, rules, protocols, relationships and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation
2	Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES (current frameworks and practices do fail to address project governance).  Although some guidelines exist on the governance of project management, concerns were raised regarding: 1) the definition and management of risk 2) non-alignment and lack of integration with business / strategic parameters 3) authority of project leaders 4) practical application of governance concepts in projects, as well as 5) discipline to refine and apply project governance principles.
3	What are the similarities between corporate governance and project governance?	General consensus was that for project governance the same principles apply as for corporate governance. However, half the respondents added that project governance should not only be aligned with, but be a subset of, corporate governance. Project governance should extend the principles of corporate governance to address the uniqueness of the temporary nature and relationships associated with projects. For example, where corporate governance addresses the composition and functioning of the board, project governance should do the same for the project steering committee.
4	What are the differences between corporate governance and project governance?	Corporate governance is very clear regarding the level and detail of financial and legal disclosures, while for project governance the level and type of disclosure it is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.
5	What are the differences between project control and project governance?	Project control is a subset of project governance. Project governance should be a proactive measure that sets the scene and framework within which project management, and subsequently project control, should function.
6	To what extent should a project governance framework for LCPs be project specific, company specific, country specific or generic?	A project governance framework should be largely generic, with room to incorporate project specific and unique requirements.
7	Much effort currently goes into the establishment of global corporate governance principles. What	Challenges include: 1) accommodating financier's requirements and risks 2) application in countries with weak corporate governance 3) apply in countries where senior / influential individuals

	challenges need to be considered and overcome in the development and establishment of a formal global project governance framework for LCPs involving multiple countries and companies?	'do not want better control' for selfish reasons 4) complexity of globalisation and virtual work 5) making project governance simple and practical to apply, as well as 6) overcoming stakeholder resistance to 'another' form of statutory requirement.
8	How should role player liability towards eventual project performance be incorporated into a global project governance framework?	This question provided for the only real difference in opinion. Approximately half of the respondents believed that stakeholder liabilities should be clearly defined in as much detail as possible (as with a board of directors in corporate governance), while the other school of thought argued that any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.
9	Please provide any other comments that you might have regarding the development and implementation of a project governance framework.	The project governance framework should: 1) be generic, with the possibility of incorporating project specific requirements 2) be very practical to use 3) be a framework for decision-making, and 4) contain an element that promotes self-governance. Project governance should reduce runaway project spending, just as good corporate governance reduces uncontrolled.

From the Delphi results, the corporate governance principles stipulated in the King II guidelines (SA) and Sarbanes Oxley Act (The United States of America, 2002) were used as a basis for deriving a CPGF. The countries were selected on the basis of the level of development. The RSA is termed a developing country and the corporate governance principles reflect the current needs of the developing world, especially in the fields of environmental and socio-economic management. The USA represents the developed world, with their corporate governance laws more focussed on financial management and reporting.

In order to test the CPGF, two sets of case studies were conducted. The first (primary) case studies comprised two in-depth case studies, while the secondary cases comprised of 15 projects available in literature.



## 9.4 Case studies

For the two primary case studies, the Mozal I project and the LHWP were selected. In both cases, the NGT was applied. For the secondary cases studies, available literature on the 15 projects was collected and the outcomes evaluated against the components listed in the CPGF.

### 9.4.1 Results – primary case studies

Both panels involved in the respective case studies confirmed the need for and value of a well structured PGF for large capital projects. There was general agreement that project governance must be aligned with corporate governance.

The Mozal I project was very successful and was the winner of the PMI Project of the Year Award in 2001. During the study, it became clear that most of the project governance principles were addressed formally, or at least informally, during the project. Specific aspects that were done well and potentially contributed substantially to the success of the project were:

- Ability to properly define the project scope.
- Selection of competent personnel onto the steering committee and into senior positions.
- Auditing of various project management practices was conducted but not pre-planned. Due to the fact that the project was mostly privately funded, the in-house corporate governance principles assisted in adhering to good accounting practices.
- The format and content of the CPGF was generic and comprehensive enough for application to LCPs.
- No CPGF category could be considered to be more important than another.

The LHWP was a longer term project (20 years) involving more political input and state funding. The response from the panel and case study results are summarised below:





- Again the NGT panel agreed that a governance environment for the project manager to function within is usually lacking on LCPs. Thus, the necessity of a formal approach towards project governance cannot be disputed and current theories and practices do not cater for these practices.
- The importance of skilled personnel, consultants and contractors cannot be over emphasised. As with the Mozal I project, most of the items were addressed because of the high level of experience and skill of the senior managers on the project.
- Clarity of scope is a determining factor. If the scope is clear, the manageability of the project increases drastically, thereby simplifying the establishment of a project governance framework. The core competency of scope development listed in the CPGF is of critical importance.
- The LHWP had the luxury of ample time to develop the Treaty. Not all projects have this luxury and therefore some form of guideline would be beneficial.

In general, the primary cases revealed that the proper composition of the project team, a well defined project scope and a structured framework for project governance would be beneficial to any project.

#### **9.4.2 Results – secondary case studies**

The secondary case studies revealed a trend towards certain parameters in the CPGF, namely the Composition of the Steering Committee and compliance to the Code for Ethical, Responsible Conduct and Conflict of Interest. In most cases, both project success and failure could largely be attributed to adherence or non-adherence to both these parameters.

The secondary case studies demonstrated that the key performance drivers of the various projects were all contained in the CPGF and that the framework was generic enough to capture general and specific project variables. In view of this finding, a final PGF was proposed.

## 9.5 The project governance framework (PGF)

Considering the basic requirements for a PGF as stipulated by the Delphi participants and the results from the primary and secondary cases studies, a PGF is proposed for application and further refinement in industry. The PGF content is given below in Table 9.2 below.

**Table 9.2: Project governance framework**

	<b>P. Project Governance</b>
	<b>A. Project Steering Committee</b>
1. Composition	<p>1. Core Competencies</p> <ul style="list-style-type: none"><li>• Project finance and cost management</li><li>• Project scope development and confirmation</li><li>• Risk assessment</li><li>• Project control requirements</li><li>• Business / project alignment</li><li>• Front-end-Loading management</li><li>• Crisis response</li><li>• Industry knowledge</li><li>• International experience</li><li>• Leadership</li><li>• Strategic alignment capability</li><li>• Contract management capabilities</li><li>• Understanding of social and environmental requirements</li><li>• Political influence</li><li>• Local legal requirements</li></ul> <p>2. Steering Committee Size Determined by project type, complexity and magnitude. Sub-committees for cost control, environmental, socio-economic, etc.</p> <p>3. Member Mix Comprise members with direct interest, as well indirect stakeholder representatives i.e. socio-economic and environmental.</p> <p>4. Chairperson Independent</p> <ul style="list-style-type: none"><li>• For state expenditure - the chairperson should be independent from all project stakeholders</li><li>• For own / private capital funding, the chairperson should be from the major shareholder and / or operating company</li></ul>
2. Responsibility	<p>1. Committee Accountability</p> <ul style="list-style-type: none"><li>• Overall accountability</li><li>• Bridging gap between project and immediate external and statutory environment</li><li>• Project promotion and stakeholder enablement</li></ul>



	<ul style="list-style-type: none"> <li>• Obtaining finance</li> <li>• Establish levels of authority</li> </ul> <p>2. Charter Development and adherence to project charter, including project policies and philosophies.</p>
3. Audit Committee to Board of Directors	<p>1. Levels of Independence The project audit committee should be independent, with the steering committee excluded from the audit committee.</p> <p>2. Project Literacy The audit committee should have extensive project experience on all aspects of LCPs.</p> <p>3. Scope of the auditors to be vetted by the steering committee</p>
<b>B. Cost and Benefit Management</b>	
1. Financial Reporting Responsibility	<p>1. Steering Committee Report against approved budget.</p> <p>2. Project Governance Charter Report on adherence to the Charter.</p>
2. Financial Disclosure	<p>1. Project Finance For any financial activities outside the GAAP requirements, full disclosure will be required.</p> <p>2. Reports Project's financial status to be reported on a quarterly basis.</p> <p>3. Corrections and Adjustments To be reported quarterly.</p>
3. Internal Controls	<p>1. Risk Management Process Formal risk management processes should be in place.</p> <p>2. Risk Management The steering committee must actively ensure that proper risk identification, quantification and mitigation planning is done on the project and not only on the financial aspects, but covering all aspects of the project.</p> <p>3. Risk Disclosure Disclosures must be made about all the risks on the project during the total project life-cycle.</p> <p>4. Risk Certification Requirement for monthly certification by the chairperson of the steering committee of disclosure controls and procedures.</p>
<b>C. Project Reviews and Audits</b>	
1. Independence	<p>1. Objectivity Independence and objectivity of the project auditors and reviewers must be ensured.</p>

	<p>2. Scope Project reviews and audits should not be confined to adherence to in-house methodologies and practices, but should include items that the review / audit deem necessary to protect stakeholder interests.</p> <p>3. Rotation Auditors should have no direct or indirect interest in the project or in the contractors / suppliers involved with the project.</p>
2. Interaction with Companies	<p>1. Internal Charter The internal charter should include the approach to the auditing of project management, the adherence to project methodologies, processes and agreed practices and the project team's functioning.</p> <p>2. Communication As with corporate governance, it requires mandatory communication between the external auditor and the audit committee.</p>
3. New Attestation Report	<p>1. Report External auditor must issue an attestation report on the project's internal control report.</p>
4. Disclosure	<p>1. Non-audit services As with corporate governance, it is required that separate disclosure of the amounts paid to the external auditor for non-audit services is provided, together with a detailed description of the nature of services.</p> <p>2. Fees Requires disclosure of fees paid to a company's principal external auditor since project commencement.</p>
	<b>D. Ethical, responsible conduct and conflict of interest</b>
1. Code	<p>1. Standards A code of ethics should be established and signed by each member of the steering committee. The code should include (as a minimum):</p> <ul style="list-style-type: none"><li>• Environment</li><li>• Social aspects</li><li>• Socio-economic aspects</li><li>• Conflict of interest guidelines</li></ul> <p>2. Adherence Adherence to the code of ethics should be disclosed and reported on a monthly basis.</p> <p>3. Disclosure Code should be made publicly available and any changes to the code or waivers from the code must be disclosed.</p>

2. Compensation	1. Performance Performance-related elements of compensation should represent a substantial portion of the total compensation package.
3. SHE	1. Adherence SHE requirements should be to international standards as minimum and be supplemented by host country requirements.
4. Social	1. Adherence Social and socio-economic considerations should be to international standards as a minimum and be supplemented by host country requirements.

The PGF provides a generic baseline for country, company or project specific requirements. However, all aspects listed should be adhered to and preferably be formally audited.

## 9.6 Recommendations and topics for future research

To further develop the PGF and enhance research in the fields of project governance, the following suggestions could be considered:

- Obtain more case studies, both primary and secondary, and test their results and the drivers of the results against the PGF.
- The results from the Delphi study highlighted a shortcoming in current literature with respect to practical guidelines for project governance. Most literature either focuses on project leadership and the role of the project manager and then again on the alignment between the project and organisational strategy. The question remains how the strategic objectives will guide the governance of the project. This dissertation made an attempt to fill the gap by means of a generic framework, however much research can be done in future to provide more customised, country / industry specific PGFs.
- Much of the literature review discussed the findings from Flyvbjerg (2003). Although the analysis by Flyvbjerg (2003) was comprehensive, the study failed to provide a solution to prevent potential misconduct. It is believed that the PGF could assist in analysing the projects mentioned



by Flyvbjerg (2003) and assess the level of adherence to project governance principles. The PGF can be used to establish the relationship between adherence to project governance principles and eventual project outcomes.

- Develop a more detailed questionnaire for each PGF category on what the detail of the terms actually mean or represent
- Engage the corporate governance fraternity and obtain input to further enhance the formulation of the PGF
- Investigate the viability of establishing the PGF as a statutory requirement for LCPs.
- The study could not establish a predominant project governance factor in the primary case studies. Further studies could try to establish more dominant factors by increasing the sample size and allocating weights to the various factors.
- The impact of organisational politics on project performance.
- The impact of organisational politics on project estimation.

Further investigations and research into the PGF will confirm the existence of a fairly well defined PGF for application during the earlier phases of an LCP.

## 9.7 Limitations

This dissertation provides a generally accepted definition for project governance and established a framework to be used in practice. Even though the dissertation did achieve the set objectives, some limitations are still evident and provide opportunity for further development.

The limitations are:

- The empirical work was limited to the investigation of two large projects as primary case studies and a number of secondary case studies that did not necessarily involve large capital amounts



- The two primary case studies were both successful projects. For further validation more case studies should be reviewed and, preferably, less successful ones should be included.
- The study is limited to relatively complex projects, involving multiple stakeholders.