APPENDICES

Appendix A

Questionnaire:

The Development of a Formal Project Governance Framework for Large Capital Projects

A. Introduction
The concept of **Project Governance** is currently a popular topic of discussion.

However, after recent literature studies and engagement with practitioners as well as academics, it became clear that no formal and agreed upon definition or framework exists for **Project Governance,** especially in the field of large capital projects.

This study aims to source the views and inputs of experienced participants with respect to their understanding of what a typical **Project Governance** Model comprises of, or should comprise of, in the environment of large capital projects.

The study follows the Delphi Research Technique and will comprise at least two rounds of questioning. This round (which is the first round) comprises open questions, while the second round will comprise a ranking questionnaire.

Your input would be highly appreciated.

B.   Participant Profile— [Name and Surname]

The participant profile contains a **General** section (B.1) to be completed by all participants. The second section (B.2) distinguishes between two categories, namely **Academics** and **Practitioners**. Please select the most appropriate category for completion.

B.1 General

Age: 21-30, 31-40, 41-50, 51 – 60, 61+

Country:

B.2 Categories

B.2.1 Academics	B.2.2 Practitioners
Highest Academic Qualification: B-degree, M-degree, PhD	Number of year's experience:
Number of international publications:	Estimated cumulative capital value of projects managed:
Number of books authored / co-authored:	Type of industry: Petrochemical, Oil & Gas, Mining, Transport & Infrastructure, Building, Telecommunications, Defence, Other
	Capacity: Client, Contractor, Consultant
	Position: Project Manager, Project Director, Sponsor

B. Questions

Please provide your detailed comments and views regarding the following:

1. How would you define / describe the concept **project governance**?

2. Do current project management frameworks and practices fail to address project governance? Please explain.

3. What are the similarities between **corporate governance** and **project governance**?

4. What are the differences between **corporate governance** and **project governance**?

5. What are the differences between **project control** and **project governance**?

6. To what extent should a **project governance model** for large capital projects be project specific, company specific, country specific or generic?

7. Much effort currently goes into the establishment of **global corporate governance principles**. What challenges need to be considered and overcome in the development and establishment of a formal **global project governance model** for large capital projects involving multiple countries and companies?

8. How should role player **liability** in eventual project performance be incorporated in a global project governance model?

9. Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Appendix B

Delphi results: Round 1

This appendix contains the detailed feedback given by each respondent during the first Delphi round. To keep the responses anonymous, each respondent was allocated a number.

Each result table contains:

- The respondent number
- Respondent profile
- The nine questions
- Feedback per respondent

The feedback was summarised and prepared for the second Delphi round.

Respondent 1:

Name	Respondent 1
Age	51+
Country	RSA
Qualification	B-degree
Experience	35
International Publications	0
Project Capital Value	US$ 20,000,000,000
Books Authored	0
Industry	Petrochemical
Capacity	Client
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	Project governance seeks to ensure both continued best performance as well as full conformance (compliance). Since a project is the starting point of a business, it needs a solid platform for future sustainability. Project governance is also a tool to address the project risks in a systematic way.
Key Words / Phrases	Project performance, risk
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Current frameworks and practices address only a portion of the field in project governance. The reason is that too little is understood about what governance is all about and a very narrow view is taken on project risk.
Key Words / Phrases	Yes, little about risk, not commonly understood
Question 3 - What are the similarities between corporate governance and project governance?	The principals of governance are the same in both areas. The systems applied have a degree of overlap. Should be proactive in both areas. Corporate governance includes project governance.
Key Words / Phrases	PG subset of CG, proactive, overlapping
Question 4 - What are the differences between corporate governance and project governance?	A large portion of corporate governance is covered by laws / regulations / audits / standards / etc., whereas project governance is mostly covered by board / company requirements and industry best practice. Disclosure in corporate governance is defined more clearly than with project disclosure.
Key Words / Phrases	Not same level of disclosure
Question 5 - What are the differences between project control and project governance?	Project controls cover only a portion of the bigger project governance area.
Key Words / Phrases	PC is a subset of PG
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or	Depending on the impact of the project on the business, all projects should have a specific element regarding governance and, naturally, all projects will have a generic element.

generic?

Key Words / Phrases	Generic base with room for specifics

Question 7 - Much effort currently goes towards the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

Most of the global projects will require project specific requirements, most of which will be determined by the financiers, governments and different joint venture partners. The above entities will automatically impose their governance requirements. What remains as common governance requirements will be the topic of debate as to whether this necessitates a global model. I believe an area where a start could be made is the project outcomes and risk aspects.

Key Words / Phrases	Definition of outcomes and risks, financiers input will be key.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

It is essential to be incorporated.

Key Words / Phrases	Essential

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

It should not be forgotten that self-governance should play a very important part. Self-governance is normally focussed on adding more value and thereby ensuring that business objectives are meat in a better and more effective way. External governance is seen as a need 'someone else' has and is handled in a way to satisfy those needs, which usually does not get integrated well with the business objectives.

Key Words / Phrases	PG not a substitute for self-governance.

Respondent 2:

Name	Respondent 2
Age	51+
Country	RSA
Qualification	B-degree
Experience	25
International Publications	0
Project Capital Value	US$ 1,000,000,000
Books Authored	0
Industry	Petrochemical
Capacity	Client
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	Set the rules Check compliance Establish deviations (trends) Amend rules if necessary The above refers to: Change Control, Human resources, Financial, Schedule, Cost, Construction, Engineering, Risk. It includes legal and own compliance.
Key Words / Phrases	Rules, compliance, risk
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	It is mainly limited to money: Invoices Processes Claims
Key Words / Phrases	Limited to money
Question 3 - What are the similarities between corporate governance and project governance?	The one is a mirror image of the other. A project is a business in its own right. The level and detail of reporting differs.
Key Words / Phrases	Similar, difference in level of reporting
Question 4 - What are the differences between corporate governance and project governance?	The level of detail. More directed towards legal compliance.
Key Words / Phrases	Detail, legal
Question 5 - What are the differences between project control and project governance?	This is the same as for quality control and quality assurance. Project control: The operational activities and techniques required to verify whether requirements are met. Project governance: Planned and systematic actions to provide adequate confirmation that requirements will be satisfied.
Key Words / Phrases	PG is proactive, set the scene

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

As indicated above, there are various layers of authority that set legal requirements (international, national, provincial, municipal) that must be complied with. This means that the generic model can be used as a guide to formulate the project specific model. For own compliance of rules, the same applies.

Key Words / Phrases

Generic base with room for specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

No comment

Key Words / Phrases

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

No comment

Key Words / Phrases

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

No comment

Key Words / Phrases

Respondent 3:

Name	Respondent 3
Age	51+
Country	RSA
Qualification	B-degree
Experience	20
International Publications	0
Project Capital Value	US$ 200,000,000
Books Authored	0
Industry	Mining
Capacity	Client
Position	Project Manager
Question 1- How would you define / describe the concept 'project governance'?	This should clearly spell out all the project why's and the what's required by the client but not the how's at this stage.
Key Words / Phrases	Client requirements
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Yes, because most of the clients are not competent in project management and do not know what is needed for effective project execution.
Key Words / Phrases	Yes, insufficient systems
Question 3 - What are the similarities between corporate governance and project governance?	Project governance should refer to corporate governance matters relevant to the project - e.g. financial control, BEE, standards, procedures, etc
Key Words / Phrases	Project governance should refer to corporate governance
Question 4 - What are the differences between corporate governance and project governance?	Again project governance should refer to corporate governance matters relevant to the project - e.g. Financial control, BEE, standards, procedures, etc.
Key Words / Phrases	Project governance should refer to corporate governance.
Question 5 - What are the differences between project control and project governance?	Project control is the 'How' - detail matters. Project governance refers to ? and project control must have the detail on how to execute.
Key Words /Phrases	Project control is a subset of project governance
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	Project specific - High Company specific - High Country specific - Medium Generic - Medium
Key Words / Phrases	Generic base with room for specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

Senior management must understand project management and must get involved and not only support projects. Competent project staff are vital.

Key Words / Phrases

Understanding by senior management. Requires competence.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Role players must be competent in project management e.g. skills, knowledge, experience, management and leadership on projects and not only know how to run a business.

Key Words / Phrases

Competence and knowledge regarding projects

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Project governance should be clearly spelled out in the company project methodology. Methodologies normally do not exist and hence the reason for project over-runs (cost, time and quality).

Key Words / Phrases

Project governance part of methodology

Respondent 4:

Name	Respondent 4
Age	51+
Country	RSA
Qualification	B-degree
Experience	25
International Publications	0
Project Capital Value	US$ 1,000,000,000
Books Authored	0
Industry	Infrastructure
Capacity	Client
Position	Project Manager
Question 1- How would you define / describe the concept 'project governance'?	The process of managing the project in terms of best practices and applicable laws with adherence to ethical principles.
Key Words / Phrases	Laws, principles, ethics, best practices
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Not necessarily. Depends on the integrity of the client and contractor and the image they have and want to portray / uphold.
Key Words / Phrases	Maybe, level of integrity
Question 3 - What are the similarities between corporate governance and project governance?	Different 'business', but the same rules should apply.
Key Words / Phrases	Same rules should apply
Question 4 - What are the differences between corporate governance and project governance?	'Corporate' may imply a business existing to make a profit, whereas a 'project' may have to be done to create a platform / infrastructure to eventually make a profit.
Key Words / Phrases	Difference in objectives / profit approach
Question 5 - What are the differences between project control and project governance?	Control is understood to be part of the project management process, whilst the governance part applies to the total project management.
Key Words / Phrases	Control involves process, project governance involves overall project management
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A generic model could do, with adaptations to suit the particular business or environment.
Key Words / Phrases	Generic base with specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

Global trends should be considered. Different role players may expect specific aspects, especially when it comes to the parties that provide the funds.

Key Words / Phrases

Global view with financier inputs to be considered.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Difficult concept. No comment

Key Words / Phrases

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Why does it not yet exist? Who wants it and what will entice parties to adopt and apply it? It has to be simple and practical so that ordinary 'project managers' can understand it, see the value and use it!

Key Words / Phrases

Simplicity, practical

Respondent 5:

Name	Respondent 5
Age	51+
Country	RSA
Qualification	M-degree
Experience	25
International Publications	0
Project Capital Value	US$ 800,000,000
Books Authored	0
Industry	Mining
Capacity	Client
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	Management of the delivery of the business case
Key Words / Phrases	Delivering a business case
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Generally they do fail because they are focused on project delivery not business case delivery.
Key Words / Phrases	Yes, project - not business focused
Question 3 - What are the similarities between corporate governance and project governance?	Corporate governance delivers the overall business value; project governance delivers individual project business benefits. Project governance is a subset of corporate governance.
Key Words / Phrases	Project governance is a subset of corporate governance
Question 4 - What are the differences between corporate governance and project governance?	Corporate is continuous, project is time bound.
Key Words / Phrases	Different timeframes
Question 5 - What are the differences between project control and project governance?	Project control is focused on project delivery; project governance on business benefit delivery.
Key Words / Phrases	Project governance focus on business delivery
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	Generic models should be applicable to most organisations.
Key Words / Phrases	Generic

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

Global corporate governance standards should consider project governance.

Key Words / Phrases

Align project governance with corporate governance

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

It is not clear what is meant by 'liability'. If accountability is meant - project governance models must clearly show accountability vested in each role.

Key Words / Phrases

Must be clear on accountability

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Key Words / Phrases

Respondent 6:

Name	Respondent 6
Age	51+
Country	UK
Qualification	M-degree
Experience	25
International Publications	0
Project Capital Value	US$ 1,000,000,000
Books Authored	0
Industry	Infrastructure
Capacity	Consultant
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	The necessary internal controls (approval, reporting and escalation) associated with project delivery, but integrated with corporate governance, in support of overall board responsibility to deliver against commitments.
Key Words / Phrases	Internal controls, integrate with corporate governance, deliver against commitments
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	The framework and practices are available and, in many cases, in place. However, it is more the understanding and appropriate application that fails projects. There is also the issue of cultural and behavioural attitudes that need to change so that risk is fully assessed and understood, rather than making key investment decisions on 'gut feeling'.
Key Words / Phrases	No - failure in understanding and application
Question 3 - What are the similarities between corporate governance and project governance?	It is about applying controls appropriate to the risk of delivering the expected outcomes of either shareholders or stakeholders. This normally links though focused controls covering risk and value management, financial management and delivery management (time, cost and outcome (quality).
Key Words / Phrases	Same
Question 4 - What are the differences between corporate governance and project governance?	Corporate governance tends to focus on delivering commitments through a 'steady state' business, as opposed to usual environments where processes have been clearly defined and normally mature. Projects tend to operate in a dynamic environment, where rapid decision-making is essential to maintain progress and this requires a clearly delegated authority framework, combined with short tolerance based escalation and feedback processes. Project governance must be integrated with corporate governance and is further complicated where a supply or delivery chain is involved.
Key Words / Phrases	Timeframes - requires different speeds i.t.o. decision making. Integrate project governance with corporate

governance

Question 5 - What are the differences between project control and project governance?	Project control is the complementary mechanistic processes (change control, risk and issue management, requirements capture, gateways and procurement, for example) to be followed to support good project governance. Governance is the structure, cultural and operating environment created to support the delivery, and includes engagement of shareholders, ensuring strategic alignment with the business needs and using information in support of the decision-making process. Controls provide systematic comfort, governance supports, making it happen effectively and efficiently.
Key Words / Phrases	Project control is a subset of project governance. Project governance sets the environment for project control
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	I would subscribe to a project governance model being generic as this creates a common language. There are examples of good project governance model available through Achieving Excellence in Construction, PRINCE2 and Managing successful Programme Effectively. Linking construction projects with the corporate concepts of these methodologies is possible and would be a great step forward - allow them to use the existing models and tools that they are good at and integrate these with corporate models, allowing consistency to be established at the right level.
Key Words / Phrases	Generic
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	Where large-scale projects are globally funded, such principles are essential to ensure visibility and transparency up and down the supply and delivery chains. This is essential where delivery takes place in countries where governance is talked about but not practiced!!! Many construction projects are funded through individual investment and there is a need to ensure that the money is spent on what it was intended for ... particularly in developing countries or following major disasters. The challenge is not about the process, but about changing hearts and minds, as well as behaviour.
Key Words / Phrases	Financier input
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	I feel that liability is not so much a governance issue but a legal, commercial and procurement issue - it is important that these issues are resolved outside of the delivery focus.
Key Words / Phrases	Liability not directly part of governance

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

The Office of Government Commerce has done a great deal to put in place some governance control guidance that acts as a framework covering business transformation projects as well as construction projects. This guidance should be viewed like a cooking recipe - the ingredients are the same worldwide, but it is the chef that makes the difference ... adding the right amount of the appropriate ingredients to produce a quality meal based on understanding each guest's tolerances, including allergies!!!

Key Words / Phrases

Respondent 7:

Name	Participant 7
Age	51+
Country	RSA
Qualification	B-degree
Experience	20
International Publications	0
Project Capital Value	US$ 300,000,000
Books Authored	0
Industry	Mining
Capacity	Client
Position	Project Manager
Question 1- How would you define / describe the concept 'project governance'?	Effective execution of capital projects to international financial and governmental requirements.
Key Words / Phrases	Execution, international requirements
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	To a large degree, yes, as most PM groups lack understanding of international requirements.
Key Words / Phrases	Yes, lack understanding of international requirements
Question 3 - What are the similarities between corporate governance and project governance?	There are certain management and reporting requirements that align to each other (e.g. legal compliances).
Key Words / Phrases	Same w.r.t. management and reporting
Question 4 - What are the differences between corporate governance and project governance?	Corporate deals with company structures, reporting thereon, etc. Project governance takes the corporate and other requirements to the individual project, which often require unique agreements, reporting requirements, etc. (e.g. IMF).
Key Words / Phrases	Project governance brings corporate governance to the project.
Question 5 - What are the differences between project control and project governance?	Project control deals with the day-to-day running of the project in terms of time, cost, quality, etc. Governance deals with the strategic issues relating to that particular project (e.g. offshore banking).
Key Words / Phrases	Project control - day-to-day, Project governance is more strategic
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	Difficult to state categorically, but there are a number of common issues, no matter what company or country.

Key Words / Phrases	Generic base with room for specifics

Question 7 - Much effort currently goes in the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

There is a need for PM groups to determine commonality of principles, no matter where a project is to be executed. From this, a guideline can be established on what are generic and what can be and are specific to an individual country.

Key Words / Phrases	Obtain common principles, generic for overall application

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

This is dependent on the authority given within individual companies / practices. An ideal subject for work shopping amongst practitioners.

Key Words / Phrases	Not clear, dependant on stakeholders

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Many international projects suffer due to a lack of attention to the governance issues, particular to the country concerned. More time and cost is necessary for obtaining local legal opinion and guidance, particularly in some of the less common international issues that pertain to that particular country (e.g. local area development support expectation).

Key Words / Phrases	Use generic and customise to country / project

Respondent 8:

Name	Respondent 8
Age	51+
Country	USA
Qualification	PhD-degree
Experience	35
International Publications	10
Project Capital Value	US$ 0
Books Authored	3
Industry	Academic
Capacity	Client
Position	Project Manager

Question 1- How would you define / describe the concept project governance?

Rules to govern decision-making, including election and appointment of directors, managers, etc.

Key Words / Phrases Rules, decision-making, appointment of authorities

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

Yes, they adopt a contractual risk allocation / shedding approach. It fails in the face of significant changes from baseline conditions.

Key Words / Phrases Yes - focus too much on contractual risk allocation

Question 3 - What are the similarities between corporate governance and project governance?

Long term ability to weather significant changes in their environment.

Key Words / Phrases

Question 4 - What are the differences between corporate governance and project governance?

Projects have a finite lifetime and clearer goals. But they also often face more organised opposition.

Key Words / Phrases Timeframe

Question 5 - What are the differences between project control and project governance?

Control comes from the days when a plan remained a good plan. Control is about correcting deviations from a plan. This approach breaks down when "the world turns faster than the project churns"!

Key Words / Phrases

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

All of the above. Governance needs to accommodate values like collectivism vs. individualism, etc. And it needs to address the kinds of decisions needed by different classes of projects.

Key Words / Phrases Generic base with room for specifics. Accommodate different levels of decision-making

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

The countries in which many global infrastructure projects are being built have no rule of law, no property rights, etc., which is not true in those places where corporate governance is being promoted.

Key Words / Phrases

Apply to countries with no / weak CG

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Question unclear

Key Words / Phrases

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Key Words / Phrases

Respondent 9:

Name	Participant 9
Age	51+
Country	UK
Qualification	B-degree
Experience	10
International Publications	
Project Capital Value	US$ 200,000,000
Books Authored	
Industry	Petrochemical
Capacity	Client
Position	Project Manager
Question 1- How would you define / describe the concept 'project governance'?	Project governance is the set of management systems, protocols and relationships between a project's stakeholders and its executive managers. Typically it is represented by a board of stakeholders that approves the arrangements for the proper control of the project and sets the policies and standards for the way the project interacts with (say) government, the public, statutory authorities, banks, and so on. A system of governance will often comprise high level statements about how the project will be reviewed; how major scope changes will be handled; risk management standards; authorisations; communications; audit; the upkeep and management of the business case; the management of contingency; ethical standards; employment policies, and so on.
Key Words / Phrases	Relationship between stakeholders and executive, protocols, risk, audit, business case, ethics, policies, procedures
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	The components of project governance are all there, but it's not treated as an integrated subject.
Key Words / Phrases	Yes - available but not integrated
Question 3 - What are the similarities between corporate governance and project governance?	They address the same range of issues.
Key Words / Phrases	Same
Question 4 - What are the differences between corporate governance and project governance?	Corporate governance applies to an ongoing enterprise and so it gives greater emphasis to longer term issues than might apply to a project - such as business continuity. However, the longer and larger the project, the more its governance takes on the aspect of corporate governance.
Key Words / Phrases	Timeframe

Question 5 - What are the differences between project control and project governance?

See my first answer. For example, project control does not encompass policies on ethics or the requirements of 'local content'.

Key Words / Phrases

Project governance operates at a more strategic level

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

The right balance needs to be struck between the benefits of a comprehensive system of governance and the excessive imposition of constraints on the project. Broad principles, checklists and so on are helpful. But then the particular circumstances need to be examined and the 'least' amount of governance imposed consistent with safeguarding the project.

Key Words / Phrases

Generic base with room for specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

The danger is that nobody ever recommends 'less' governance. So, in the build up to something 'global', the constraints and requirements pile up to the point where the project team are diverted from doing the job and spend their time complying with the 'rules'. The real intellectual challenge (far harder than making long lists) is to devise a generic standard of efficiency and effectiveness for project governance. This finesses the difficulties of culture, project size, contract strategy and so on. ? The generic guidance should help the project sponsors find the least 'quantity' of project governance sufficient to meet their specific needs.

Key Words / Phrases

Difficulty in simplicity, danger in 'too many' rules.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Not sure. But I observe that governance boards work best in non-adversarial circumstances.

Key Words / Phrases

Beware of adversity

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

I'd refer you to the UK Association for Project Management's guide to the governance of project management. Not quite the same thing, but a useful stepping off point.

Key Words / Phrases

Respondent 10:

Name	Respondent 10
Age	51+
Country	RSA
Qualification	B-degree
Experience	27
International Publications	0
Project Capital Value	US$ 3,000,000,000
Books Authored	0
Industry	Mining
Capacity	Client
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	A collection of policies, procedures and processes applied to obtain the best value for funds employed by an investor consistent with the final objectives as defined by the investor.
Key Words / Phrases	Rules, policies, procedures, business case as defined by the investor.
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	In most cases, frameworks and practices do not fail to address project governance. Failure in project governance often occurs because recognised frameworks and practices are not adhered to.
Key Words / Phrases	No – frameworks available but not adhered to
Question 3 - What are the similarities between corporate governance and project governance?	Noting that project governance is aimed at more specific goals and timeframes, and corporate governance tends to be continuous over broader goals and timeframes, the policies, processes and procedures are the same.
Key Words / Phrases	Same, differ only in time
Question 4 - What are the differences between corporate governance and project governance?	Specificity of goals and timeframes.
Key Words / Phrases	Timeframes
Question 5 - What are the differences between project control and project governance?	Project controls are part of the procedures and processes that contribute to project governance.
Key Words / Phrases	Project control is a subset of project governance
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	The project governance model for large capital projects should not vary to any large degree from project to project, company to company or country to country. However, certain policies, procedures and processes may vary to satisfy specific requirements.

Key Words / Phrases	Generic base with room for specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	Within the broad challenge stated here, there are many contributing challenges. The fundamental challenge is to overcome the inflexibility of corporate managers, project managers and fiscal regimes to accept common standards for project governance.
Key Words / Phrases	Overcoming resistance from stakeholders

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	If project performance is well defined and variation policies and procedures are well defined and applied, liability can be ascribed and incorporated. Noting that few individuals or companies have the capacity to take unlimited liability.
Key Words / Phrases	Limited liability

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	There are a number of project governance models available in the global corporate environment. The failure to implement these has, in most cases, caused project governance to fail.
Key Words / Phrases	Practical

Note: No references were given or supplied with respect to the 'project governance frameworks' referred to.

Respondent 11:

Name	Respondent 11
Age	41-50
Country	UK
Qualification	B-degree
Experience	22
International Publications	
Project Capital Value	US$ 12,000,000,000
Books Authored	
Industry	Transport & Infrastructure
Capacity	Consultant
Position	Project Director

Question 1- How would you define / describe the concept 'project governance'?

The common industry association with 'project governance' is in relation to the formal monitoring and auditing of a project and is normally associated with pubic sector projects. This misses the fact that all projects are governed to a greater or lesser degree and that 'project governance' is simply another term for 'project management'. What differentiates governance from management is one is seen as a formal process of recording, whilst the other is more the action of implementing. To me, project governance and project management are one and the same; the subtle difference being that the term governance is associated with the processes of ensuring accurate records are kept of the decisions made in implementing and managing a project. For instance, establishing systems for recording meetings, monitoring progress, accounting for project costs, recording decisions, checking designs, etc., all form part of project governance and are used to manage the project by the management team.

Key Words / Phrases   Auditing, monitor, recording

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

In answering this question, one first needs to establish the benchmark against which a judgement can be made. Each project and each client will require a different level of governance to be applied, and so what may be sufficient for one project, may fall well short for another. Many current project management systems are process driven and are not intuitive. This means that it is possible to fully comply with a defined level of governance, yet still fail to deliver the right project to a client. Most systems fail to account for the non-linear nature of a project and the heavy reliance on individual experience and knowledge. It is not practices that need to be addressed, but rather the risks associated with poor judgement.

Key Words / Phrases   Yes - experience, integration, require different levels

Question 3 - What are the similarities between corporate governance and project governance?

The scope for corporate governance has expanded over the last twenty years from a financial based state to one that includes other legal requirements associated with health and safety legislation and equal opportunities, etc. Project governance also has to demonstrate compliance at a financial and health and safety level.

Key Words / Phrases   Follow corporate governance developments

Question 4 - What are the differences between corporate governance and project governance?

Corporate governance is more a macro state, whereas project governance may have to operate at the micro state. Again, the differences are greater only as a consequence of the needs of the client.

Key Words / Phrases   Project governance micro, corporate governance macro level

Question 5 - What are the differences between project control and project governance?

Project control is the level at which the project management team and/or the client wish to retain executive power. Project governance is the system that is used to measure and record the project as it progresses. Project governance can operate without control, but control is control.

Key Words / Phrases   Project control is at project management level. Project governance at macro level

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

Generic models are a good starting point and many elements of the generic model will be found in bespoke models, whether they be project, company or country specific. The greatest danger is to try to develop a generic model that can be applied to all specific situations, as this model becomes cumbersome and a hindrance to the delivery and management of the project.

Key Words / Phrases   Generic base with room for specifics

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

The development of global governance principles are of benefit to large corporate organisations, governments and world organisations, such as the World Bank, as it allows them to benchmark projects against a target and reduces the learning curve for their audit teams. Many of the core building blocks of project governance can be combined into a global model: however, such a model runs the risk that it will simply become too cumbersome and impractical to use, and will itself become the driver for projects, rather than a tool to assist the management team and client.

Key Words / Phrases   Difficulty in simplicity and practicality

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Not quite sure what you are getting at? Is this about pain / gain clauses in contracts??

Key Words / Phrases

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

A governance system should allow flexibility for the management team to respond to the changing nature of a project, but do so in a way that ensures the decisions made are correctly documented.

Key Words / Phrases   Framework for decision-making

Respondent 12:

Name	Respondent 12
Age	41-50
Country	RSA
Qualification	M-degree
Experience	27
International Publications	
Project Capital Value	US$ 2,500,000,000
Books Authored	1
Industry	Transport & Infrastructure
Capacity	Consultant
Position	Project Director
Question 1- How would you define / describe the concept 'project governance'?	The application of the highest standard of ethics to the management and implementation of projects.
Key Words / Phrases	Ethics
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Yes - insufficient attention is given to the potential risk of self-interest and conflict of interest between the various parties involved.
Key Words / Phrases	Yes - conflict of interest
Question 3 - What are the similarities between corporate governance and project governance?	Both involve the application of ethical standards.
Key Words / Phrases	Same in ethical standards
Question 4 - What are the differences between corporate governance and project governance?	The different interests of the stakeholders and interest groups The relatively short term nature of projects compared to long term interests of corporations.
Key Words / Phrases	Different sets of stakeholder interest due to timeframes
Question 5 - What are the differences between project control and project governance?	Control implies ensuring things are done; governance implies ensuring the correct things are done.
Key Words / Phrases	Project governance is validating
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	The more generic the better, it can be adapted to specifics. The King II Report on corporate governance is a good example of how generic / specific balance can be struck.
Key Words / Phrases	Generic

Question 7 - Much effort currently goes in the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

Challenge is to get companies to accept and manage the principles. It might be an option to make it part of ISO 9000 on Total Quality Management.

Key Words / Phrases

Implementation challenge, standardise

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

Liability can be incorporated by including it in the Total Quality Manual of the company.

Key Words / Phrases

Part of quality system

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Key Words / Phrases

Respondent 13:

Name	Respondent 13
Age	41-50
Country	RSA
Qualification	PhD
Experience	22
International Publications	0
Project Capital Value	US$ 450,000,000
Books Authored	
Industry	Petrochemical
Capacity	Client
Position	Project Manager

Question 1- How would you define / describe the concept 'project governance'?

Project Governance involves the methodologies, structures and processes whereby the project is directed (the setting of project objectives in line with business strategy and objectives) and controlled (the hands-on activity of executing or supervising project resources' actions) to achieve the predetermined project objectives.

Key Words / Phrases

Structures and processes, link business objectives / strategies with project

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

No. The phased gate process approach provides a framework for governance to ensure that business risk is minimised and opportunities maximised. Yes, when there is a lack of discipline or lack of understanding to follow the phased gate process.

Key Words / Phrases

PM frameworks to be used, lack of discipline in application

Question 3 - What are the similarities between corporate governance and project governance?

The requirements to: comply with regulations and legislation, to lead / direct and control activities and transparent reporting to stakeholders. The financial governance and control is highly structured and automated in an integrated workflow process and system.

Key Words / Phrases

Compliance to rules and regulations, financial governance

Question 4 - What are the differences between corporate governance and project governance?

Project governance is on operational level, whereas corporate governance is on the strategic level. Project financial control is on transactional level, whereas corporate financial direction is done to ensure shareholder value. Project governance is about doing things / projects right, and corporate governance is about doing the right things / projects.

Key Words / Phrases

Project governance operational level, corporate governance strategic

Question 5 - What are the differences between project control and project governance?	Project control is a subset of project governance. Project control involves all activities to ensure compliance to standards (hands on), and project governance involves the structures and activities that ensure that the project meets the project objectives (guidance).
Key Words / Phrases	Project control is a subset of project governance

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	The project governance model should be specific as far as the framework for decision-making and risk management and strategic guidance is concerned. Methodologies based best practices should be generic and used as a guideline that should be customised and adopted for the specific country. The controls to ensure compliance will be specific to the governance environment, namely project specific requirements and objectives, the country specifics like culture, legislation, geography and economics.
Key Words / Phrases	Generic and adaptable

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	The challenges for a global project governance model are the virtual environment, understanding of the unfamiliar environment, support systems and structures for remote teams.
Key Words / Phrases	Remote application. Virtual work

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	The liabilities should be clearly specified in the contract in accordance with legislation and business owner requirements. The necessary governance forums (steering, progress, site and construction meetings) and structures (work teams, management teams, review teams, audit team), supported by sufficient metrics, should be put in place to ensure that the project is proactively controlled and guided towards project success and performance.
Key Words / Phrases	Be clear on liabilities in contracts

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance needs to be incorporated in the business processes and should not be an intervention. A blanket approach should not be followed on all projects, but rather tailored according to the risk profile of the project. Self- governance with tools and techniques should be employed as a first prize where possible and sensible.
Key Words / Phrases	Be part of business process, not stand-alone. Self-

governance

Respondent 14:

Name	Respondent 14
Age	31-40
Country	Nigeria
Qualification	M-degree
Experience	11
International Publications	0
Project Capital Value	US$ 1,500,000,000
Books Authored	
Industry	Telecommunications
Capacity	Client
Position	Project Director

Question 1- How would you define / describe the concept 'project governance'?

Project governance, for me, is the framework the organisation provides wherein project officials of the organisation (as well as 3rd parties to the project) must execute projects. The term is all encompassing of the organisation's project management methodology (if any), investment management methodology (if any), and benefit realisation validation, etc. In the listed sector, it will form a subset of corporate governance.

Key Words / Phrases — Framework, part of investment and benefits, include 3rd parties, subset of corporate governance

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

I'd say yes. Most frameworks deal with the how, when and where and does not cover the why. With why, I refer to the fundamental reasons why a project should be done in the first place. It focuses more on project management issues and does not always assist in integrating the project with the business track of the organisation. This can become complex to define across different industries and organisations but the fundamentals should be the same. (Similar to the fundamentals of corporate governance that are universal across countries, industries and organisations).

Key Words / Phrases — Yes - no integration between business and project

Question 3 - What are the similarities between corporate governance and project governance?

To me, project governance is a subset of corporate governance. In the latter it governs the different relationships between management (middle, senior, board) and stakeholders (shareholders and other stakeholders) of organisations, as well as the framework for overall "good" management (plan, lead, operate, control - how measured, etc.) of organisations. Project governance should also define the relationships between the organisation's management (board, senior management, middle management, etc.) and the project stakeholders (project managers, other project professionals, 3rd party professionals, suppliers, contractors, etc.), as well as the framework for the "good" management of projects (methodologies, measures of success, etc.) within the organisation. As per King II reports, etc. where best practice i.t.o. Board structures, etc. is defined, so must project governance define the best practice for project steering committees, etc. Corporate governance is also more focused on the listed company sector, while project governance can span much wider (private companies, government projects, etc.). It overlaps on some level, but not everywhere.

Key Words / Phrases

Subset – Project governance to detail for project management what corporate governance details for organisations! – (Good summary!!!) ?

Question 4 - What are the differences between corporate governance and project governance?

Where CG is holistic i.t.o. listed companies, PG is more focused on specific execution activities within the organisation (listed, private government, etc.). It should focus specific governance requirements to ensure proper management of projects, i.e. provide a specific framework for a project manager to manage within. It is unique in nature and will integrate project management into the organisation.

Key Words / Phrases

Corporate governance for listed companies, project governance more at project level

Question 5 - What are the differences between project control and project governance?

Where project control only really focuses on the execution phase of the project (although control is wider as well) and is fundamentally concerned with cost, quality and schedule management of the specific project (therefore principally focusing on project management track); project governance focuses on the project framework within the business (therefore the business track). Another way of looking at it is to say, the 1st is concerned with how well the project is doing, while the latter should test / question (throughout the project lifecycle) the place, role, function, benefit and validity of the specific project within the organisation's overall existence. Why are we doing this and should we be doing this project, etc.

Key Words / Phrases

Project governance more strategic than project control

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

I think a model should be as generic as possible. This is the starting point. What flows from this will be models (from generic) that focus on different industries, countries, project types, etc. It will come with time as the industry matures and globalisation increases. Whether a project is executed in the listed sector or government, Monrovia or Nigeria, it is still a project (i.e. laws of nature). It will continue to behave like a project and therefore the need for the generic model (laws of project) as a first step.

Key Words / Phrases Generic to be adapted

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

1. People managing organisations do not necessarily understand the project environment.
2. Project managers do not always understand corporate governance and why it's needed.
This misalignment is probably the biggest challenge to overcome. People, people, people, and yet again people, is the issue.
3. How long will it take to get project professionals in tune with good corporate practice?
4. Politics may require an outcome of a project totally out of sync with common sense and good project practice.
5. Maybe (sure of it) some entities (governments, organisations, individuals, etc.) do not want improved control for "selfish" reasons.
6. Difference of opinions between professionals on what should be in a global model.
7. Different industry specific requirements, tax structures, government policies (free trade zones, etc.) could play role.
8. Can think of a few more...

Key Words / Phrases (Plenty) – to be considered in practical developments

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

It should most definitely be incorporated.
1. Common terminology to be established - project sponsor = ...
2. Fiduciary duties of role players to be established = maybe en-acted? (Like Engineering Act, Company Act as example.) Tangible consequences ...

Key Words / Phrases Be very clear

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.
Key Words / Phrases

Respondent 15:

Name	Respondent 15
Age	51-
Country	USA
Qualification	PhD
Experience	43
International Publications	20
Project Capital Value	US$ 0
Books Authored	8
Industry	Academic
Capacity	Consultant
Position	

Question 1- How would you define / describe the concept 'project governance'?

Project governance consists of the processes by which project related decisions are authorized and determined.

Key Words / Phrases — Processes, decisions, authorise

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

Most current project management frameworks address implementation issues and fail to adequately analyze the authority of the project leaders. Project management frameworks primarily focus on implementation issues.

Key Words / Phrases — Yes - current practices focus on implementation.

Question 3 - What are the similarities between corporate governance and project governance?

Corporate governance and project governance are similar in as much as they address the authority of the governing bodies.

Key Words / Phrases — Similar

Question 4 - What are the differences between corporate governance and project governance?

Corporate governance tends to focus on strategic and fiduciary issues. Project governance focuses more on implementation and control issues.

Key Words / Phrases — Corporate governance is strategic, project governance focus on implementation

Question 5 - What are the differences between project control and project governance?

Project control focuses primarily on budget / schedule issues. Project governance focuses more on the authority of the senior project team.

Key Words / Phrases — Project authorities

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

A project governance model for large capital projects should relate to all of the issues listed. I believe it would be difficult to develop a robust generic model that would apply in all situations. ?

Key Words / Phrases

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

A formal global project governance model must focus heavily on authorities and communication challenges. Virtual teams will most likely be used extensively with formal sign-off requirements.

Key Words / Phrases   Focus on authority and communication

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

A project governance team should have the same liability as a board of directors. It is their job to carefully preserve project assets and control project expenditures.

Key Words / Phrases   Same liability as board of directors

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

This is a very salient current topic, since better project governance should reduce runaway project spending, just as good corporate governance reduces uncontrolled losses.

Key Words / Phrases

Summaries from Respondent feedback:

Name	Results (Delphi Round 1)
Age	
Country	
Qualification	
Experience	372
International Publications	30
Project Capital Value	US$ 43,950,000,000
Books Authored	12
Industry	
Capacity	
Position	

Question 1- How would you define / describe the concept 'project governance'?

Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

Overwhelmingly YES! 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.

Question 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.

Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision- making.

Question 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.

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

A project governance model should be largely generic, with room to incorporate project specific and unique requirements.

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

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 "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.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

The project governance model should be:
1) generic, with the possibility of incorporating project specific requirements
2) very practical to use
3) 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 losses.

Appendix C

Delphi results: Round 2

This appendix contains the detailed feedback given by each respondent during the second Delphi round. The input to the second Delphi round was the consolidated answers derived from the first round. The proposed answers were sent to the sample list of respondents and a total of 7 responded.

To keep the responses anonymous, each respondent was again allocated a number.

Each result table contains:

- The respondent number
- The nine questions, with proposed consolidated answers / descriptions
- Feedback per respondent

The feedback was consolidated and used as input to either a third round of Delphi or the development of the CPGF.

Respondent 1:

Questions	Delphi 1 Results	*Respondent 1*
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*Good*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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. 6)	*I agree.*
Question 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.	*Don't forget the chunkiness of projects vs. the continuous nature of on-going management.*
Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.	*No institutionalized audit culture for projects.*
Question 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.	*Agree*

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic, with room to incorporate project specific and unique requirements.	*Yes*
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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.	*Agree, especially with #5.*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*Just try to be clear in communications.*
Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance model should be: 1) generic with the possibility of incorporating project specific requirements 2) very practical to use 3) 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 losses.	*Agree*
Additional comments		*None*

Respondent 2:

Questions	Delphi 1 Results	*Respondent 2*
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*Sounds just about right – suggest that it is brought into the context on internal controls aligned with good governance.*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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.	*We must separate the existing frameworks from that of people's behaviour – if all executives complied with the intent of current frameworks in making decisions then we would see a big shift. We must differentiate between compliance, adherence and assurance.*
Question 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.	*No comment*

Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.

We must be absolutely sure about this statement – project management is an internal mechanism for delivering board accountability for delivery. The financial and legal aspects must remain part of the corporate governance function, rather than establishing a different set. With the shift to portfolio management this emphasis becomes even more important as we try to get control of the overall corporate investment plan, which includes delivery through projects.

Question 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.

No comment

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

A project governance model should be largely generic with room to incorporate project specific and unique requirements.

No comment

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome towards the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

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 "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.

Global funding demands robust governance up and down the supply and delivery chain – we need to retain a flexible toolkit that allows us to adopt a risk based control environment.

Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?

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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.

The issue here is that the ultimate accountability for delivering outcomes rests with the board or directors and in governance terms this must not be diluted to project boards. There would appear to be confusion around accountability, responsibility and devolved ownership.

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

The project governance model should be:
1) generic with the possibility the possibility of incorporating project specific requirements
2) very practical to use
3) 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 losses.

The genesis element allows us all to speak a common language. Project governance, in itself, reduces runaway projects – this totally depends on the attitude and behaviour of those executives filling governance roles.

Additional comments

None

Respondent 3:

Question	Delphi 1 Results	*Respondent 3*
Question 1- How would you define / describe the concept project governance?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*No comments*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly, YES! 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 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.	*Concur*
Question 3 - What are the similarities between corporate governance and project governance?	General was consensus 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.	*Concur*
Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision- making.	*Agreed*
Question 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.	

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic, with room to incorporate project specific and unique requirements.	*Agreed*
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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.	*Agreed*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*Suggest legal opinion*
Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance model should be: 1) generic, with the possibility of incorporating project specific requirements 2) very practical to use 3) 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 losses.	*Agreed*
Additional comments		*None*

Respondent 4:

Question	Delphi 1 Results	*Respondent 4*
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*… within which decisions are made, progress is monitored, activities controlled and variations managed, for project…*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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.	*The failure, in general, to ascribe or accept accountability needs to be noted.*
Question 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.	*Agreed*
Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.	*Agreed*

Question 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.	*Agreed*
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic with room to incorporate project specific and unique requirements.	*Agreed*
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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 requirements	*The reality that making things more difficult to do results in things not being done should emerge in this response. There is an overwhelming challenge to make good project governance do-able, without making things more complicated or cumbersome.*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*I support the school that proposes defined liability and accountability. The relationships have to be sorted out before the action starts on a basis of well defined roles, responsibilities, accountabilities and liabilities. Legal terms are often the obstacle.*

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

The project governance model should be:
1) generic, with the possibility of incorporating project specific requirements
2) very practical to use
3) 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 losses.

Additional comments

The element of legal standing of the project governance model is inadequately addressed in this list of responses. Sound project governance is based on a real integration with the legal regime of the environment in which the project is developed.

Respondent 5:

Name	Delphi 1 Results	Respondent 5
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*Governance is mostly about two kinds of rules:* *1) rules that define the access and participation rights of stakeholders in setting goals and direction for a project; and* *2) rules for ensuring transparency and accountability to eliminate corruption, nepotism, etc. Everything else is either included in leadership or management, as they are typically understood.*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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.	*Yes, especially with regard to defining rights of access and channelling the participation of stakeholders.*
Question 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.	*The long expected duration on ongoing enterprises means that they must have rules (e.g. in their articles of incorporation and by-laws) about how to set up processes and participation rights for making changes in function, structure and behaviour of the enterprise to deal with drastically different circumstances. AS BOT and similar private / public partnership projects extend the duration of projects out to 30 years and more -*

the same sets of issues arise. Such projects should have the equivalent of articles and by-laws that can address not just governance of the investing corporation, its shareholders, managers and directors, but also governance of a much wider group of stakeholders, who may assert legitimate - or illegitimate - claims against the assets of the long-lived project.

Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.	*No comment*
Question 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.	*Some aspects of project control are associated with governance. Others are associated with management of project. For governance purposes, reports and audits should be carried out by disinterested third parties.*
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic, with room to incorporate project specific and unique requirements.	*I disagree strongly, there are so many different kinds of projects that one would have totally different kinds of governance arrangements for the design and construction of a major office building versus the shaping, conceptual design, design, construction*

and operation of a long-lived BOT project.

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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.	*One of the major issues - perhaps the major issue - associated with development of such projects is the way in which fees will be regulated over the long life of the project. This was the downfall of projects such as Dhabol (power - India) and Cochabamba (water supply - Bolivia).*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*If adversarial issues are handled outside of corporate governance, we will never evolve a common law to help us shape the governance of large projects. International treaties regarding mediation and arbitration are beginning to create a relatively standard way for dealing with at least some situations.*
Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance model should be: 1) generic, with the possibility of incorporating project specific requirements 2) very practical to use 3) 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 losses.	
Additional comments		*No comments*

Respondent 6:

Questions	Delphi 1 Results	*Respondent 6*
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*OK*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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.	*OK*
Question 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.	*Agree*
Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision- making.	*The project environment is much more dynamic than a corporate environment, so governance processes and frameworks must be more responsive.*

Question 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.	*OK*
Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic, with room to incorporate project specific and unique requirements.	*OK*
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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.	*Agree*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*Role player liability should read 'role player accountability', as I understand the question. The governance framework should place appropriate performance and compliance requirements (appropriate at all levels) on those accountable for project benefits delivery.*

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance model should be: 1) generic, with the possibility of incorporating project specific requirements 2) very practical to use 3) 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 losses.	*No comments*
Additional comments		*No comments*

Respondent 7:

Questions	Delphi 1 Results	*Respondent 7*
Question 1- How would you define / describe the concept 'project governance'?	Project governance is a set of management systems, rules, protocols, relationships and structures that provides the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.	*OK*
Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.	Overwhelmingly YES! 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 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.	*OK*
Question 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.	*OK*
Question 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 disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision- making.	*OK*
Question 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.	*OK*

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?	A project governance model should be largely generic, with room to incorporate project specific and unique requirements.	*OK*
Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?	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 "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.	*OK*
Question 8 - How should role player liability for eventual project performance be incorporated in a global project governance model?	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 board of directors in corporate governance), while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.	*OK*
Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.	The project governance model should be: 1) generic, with the possibility of incorporating project specific requirements 2) very practical to use 3) 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 losses.	*OK*
Additional comments		*Important to ensure that the governance model that is established provides flexibility as per the nature and point in life-cycle of the project, i.e. looser control measures initially*

that tighten up as the project / organisation matures. What will be the requirements on project professionals in this case?

Appendix D

Case study protocol

This appendix provides examples of:

- The letter of invitation issued to the case study participants.
- The information sheet forwarded to each participant prior to the NGT meeting.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

University of Pretoria

Tel: 012 420 2822
Cel: 082 497 2453
Fax: (012) 362-5307
e-mail: mcbekker@eng.up.ac.za

**Faculty of Engineering,
The Built Environment and
Information Technology
Department of Engineering
and Technology Management**

01 March 2007

Project Governance for Large Capital Projects – Case Studies

Dear Rob,

Thank you for your willingness to participate in this research exercise. I realise your time is valuable, as is your experience. The paragraphs below provide a short background of the study I am conducting, the work done so far, and the next steps where I need your, and other colleagues' inputs.

Background

The overall performance of large capital projects (> R500 million) remains a concern worldwide. Various studies on these large projects shows that although we have many project management tools, techniques, training and qualifications, the challenge of completing projects on time, within budget and excellent performance consistently remains a problem. Although I realise there is no 'magic wand' I believe that projects are often 'set-up' for failure, meaning that the end result can often be traced back to poor management of the initial stages of the project.

In setting up a project, I went and had a look at what is done in other areas of industry, especially operating companies. There is a belief, which I support, that a project is a 'temporary company'. To set the rules for establishing and running a company, the formalisation and adherence to corporate governance principles, guidelines, and even laws (Sarbanes Oxley in the USA), are paramount, and unique to each country. Because of the global nature of large capital projects, involving multiple companies from multiple countries, the application of these corporate governance principles becomes troublesome. In recent years the term 'project governance' has surfaced, but from discussions and readings it became clear that there are many views of what this entails, including IT protection, information management, adherence to methodologies, etc. However, during my discussions with project practitioners, I realised that there is still a need to address the upfront phases of a project more formally, setting the scene and framework for the project

manager to function within. In many a discussion, the term 'project governance' was used. This observation called for further investigation.

Work done so far

The topic for the research evolved into "Project Governance for Large Capital Projects". A Delphi study was conducted among more than 30 project practitioners and academics around the globe to define the concept of "project governance", its differentiation from project control, its contents and potential value. The study also confirmed the belief that current project management theory does not address project governance formally.

From this study, a framework for a concept project governance model (CPGM) was derived. The framework was viewed against various law cases concerning large capital projects, to assess whether the contents address the key issues that resulted in a lawsuit.

Next step

To conclude the study, I need to conduct 3 to 4 case studies on large capital projects. The aim of the case studies is to assess the level to which the principles of project governance were applied formally and informally on the projects and what the impact of the principles were on project outcome. I plan to conduct a NGT (Nominal Group Technique) exercise with key project role players, preferably from various stakeholder groups (this might not always be possible, but senior people on the project need to participate). The group participating should have 4 to 8 members and the exercise will take about 3 hours.

I will appreciate it if you could propose a list of participants, their contact numbers and a suitable date for you (potential dates are 19,20, 29, 30 March 2007). I will then arrange a venue, and transport if required.

Looking forward to a most interesting session.

Regards

Giel Bekker
Senior Lecturer & Researcher

Prof M W Pretorius
Head of Department: Engineering and Technology Management

Information Sheet

Nominal Group Exercise (March 2007)

Project Governance for Large Capital Projects

Leading up to the Nominal Group exercise, some research has been done to determine the definition of Project Governance as well as key components of such a typical project governance framework.

The key objective of the Nominal Group exercise is to review the contents of the framework, its validity and applicability and propose improvements.

Respondents' Profile

Participant age bracket	21-30	31-40	41-50	51+
No of participants		1	3	11
Highest Academic Qualification	**B-degree**	**M-degree**	**PhD**	
No of participants	8	4	3	
Experience				
Total	372 years			
Average/participant	24.8 years			
Number of international publications	30			
Number of books authored	12			
Capital value of projects managed by respondents	US$ 43,950,000,000			
Industries				
- Mining	4			
- Petrochem	4			
- Infrastructure & Transport	4			
- Telecommunications	1			
- Academia	2			
Capacity				
Consultant	4			
Client	11			
Country Responses	Sent out	Received	% Response	
South Africa	14	9	64%	
United States of America	6	2	33%	
Australia	2	0	0%	
United Kingdom	6	3	50%	
Brazil	1	0	0%	
Sweden	1	0	0%	
Denmark	1	0	0%	
Nigeria	1	1	100%	
Practitioner vs. Academia Responses	Sent out	Received	% Response	
Academia	8	2	25%	
Practitioners	24	13	54%	
Total	**32**	**15**		

To initiate the study an in-depth literature study, and a dual-round Delphi study, were conducted among leading project management practitioners and academics. The summary profile of the Delphi respondents is given above (Respondents' Profile).

The key questions posted to the participants are given below, with the resulting answer for each question provided. The answers to the questions were used do develop the concept project governance framework to be tested against various case studies.

Question 1- How would you define / describe the concept 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.*

Question 2 - Do current project management frameworks and practices fail to address project governance? Please explain.

> *Overwhelmingly NEGATIVE.*
>
> *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.*

Question 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.*

Question 4 - What are the differences between corporate governance and project governance?

> *Corporate governance is very clear on the level and detail of financial and legal disclosure, while for project governance the level and type of disclosure is not at all clear. The difference in timeframes requires an alternative approach to the process and speed of decision-making.*

Question 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.*

Question 6 - To what extent should a project governance model for large capital projects be project specific, company specific, country specific or generic?

> *A project governance model should be largely generic, with room to incorporate project specific and unique requirements.*

Question 7 - Much effort currently goes into the establishment of global corporate governance principles. What challenges need to be considered and overcome in the development and establishment of a formal global project governance model for large capital projects involving multiple countries and companies?

> *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 "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.*

Question 8 - How should role player liability towards eventual project performance be incorporated in a global project governance model?

> *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 board of directors in corporate governance,) while the other school of thought argues any items or actions that could create potential adversarial situations should be avoided and handled outside the project context.*

Question 9 - Please provide any other comments that you might have regarding the development and implementation of a project governance model.

> *The project governance model should be: (1) generic with the possibility of incorporating project specific requirements, (2) very practical to use, (3) 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 losses.*

Given the responses received, and further literature reviews, a concept framework was developed to be used as a measurement and discussion base against selected projects. The purpose of the framework content is to assess:
1.   The relevance of each item in the framework to large capital projects.
2.   To what extent the various items have been addressed on large capital projects, formally or informally?
3.   What the impact was of specific framework items on a studied project?
4.   What the impact was of not addressing specific framework items on the project outcome?

The concept framework is tabled below and will be used as a basis for discussing project cases.

Project Governance Framework	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance* • *Project control management (Cost / Time)* • *Risk assessment and contingency management* • *Business / project alignment* • *Upfront management of the project and scope robustness* • *Crises response (conflict management)* • *Industry knowledge* • *International experience* • *Leadership* • *Strategic alignment capability* • *Contract management capabilities* • *Stakeholder management* • *Political influence* • *Country and local knowledge* • *"Project Champion"* • *Local legal requirements* *2. Steering Committee Size* *Determined by project type, complexity and magnitude* *Sub-committees - purchasing, finance, audit, social, etc. reporting to steering committee.* *3. Member Mix* *Comprise members with direct interest, as well indirect stakeholder representatives i.e. socio-economic and environmental (establish appropriate forums to deal with "other" stakeholders).* *4. Chairperson Independent* *The chairperson should be independent from any project stakeholders (for public projects not private projects).*
2. Responsibility	*1. Committee Accountability* *Project promotion and stakeholder enablement* *Obtaining finance* *Establishing levels of authority* *Overall accountability* *Bridging the gap between project and immediate external and statutory environment* *Team development* *2. Charter* *Development and adherence to project charter, including project policy, CSR.*
3. Internal Auditing	*1. Project Literacy*

	The auditors should have extensive project experience on all aspects of large capital projects. *3. Scope of the auditors to be vetted by the steering committee.*
	B. Cost and Benefit Management (Project Finance and Controls)
1. Charter	*1. Project Governance Charter* *Report on adherence to the charter and key performance indicators.*
2. Cost Reporting Responsibility	*1. Steering Committee* *Establish reporting structure, priorities and format.* *Report against approved budget.*
3. Finance Reporting	*1. Project Finance* *For any financial activities outside the GAAP requirements, full disclosure will be required.* *2. Reports* *Project financial status to be reported on a quarterly basis.* *3. Corrections and Adjustments* *To be reported quarterly.*
4. Risk Management	*1. Risk Management Process* *Formal risk management processes should be in place.* *2. Risk Management* *The steering committee must actively ensure that proper risk identification, quantification and mitigation planning is done on the project, not only on financial and cost matters, but covering all aspects of the project.* *Impose risk management to be done by all stakeholders.* *3. Risk Disclosure* *Disclosures must be made about all the risks, and prioritised on the project during the total project life-cycle.* *4. Risk Certification* *Requirement for monthly certification by the chairperson of the steering committee of disclosure controls and procedures.*
	C. Project Reviews and External Audits
1. Independence	*1. Objectivity* *Independence and objectivity of the project auditors and reviewers must be ensured.* *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.*

	3. Rotation Auditors should have no direct or indirect interest in the project or in the contractors / suppliers involved with the project.
2. Attestation Report	1. Report External auditor must issue an attestation report on the project's internal control report.
3. Disclosure	1. Non-audit services As with corporate governance, it is required that separate disclosures of the amounts paid to the external auditor for non-audit services is made, together with a detailed description of the nature of services. 2. Fees Requires disclosure of fees paid to a company's principal external auditor since project commencement.
	D. Ethical, responsible conduct and conflict of interest
1. Code	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): • Environment • Social aspects • Socio-economical aspects • Conflict of interest guidelines 2. Adherence Adherence to the code of ethics should be disclosed and reported on a monthly basis. 3. Disclosure Code should be made publicly available and any changes to the code or waivers from the code must be disclosed
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 must be set and formalised, taking into consideration world best practices and host country conditions and legislation.
4. Social	1. Adherence Social and socio-economic considerations must be set and formalised, taking into consideration world best practices and host country conditions and legislation.

Appendix E

**Secondary case studies: Case studies from general literature
(Addressing the second part of the case study research)**

Note: The majority of the case studies in this appendix are summarised from available case studies in general literature or sources directly from formal documents. The sources are indicated per case study.

Each case study provides a short summary of the project, the criteria of performance (failure or success) and observations of specific sections of the CPGF that were well adhered to or not.

Case Study B.1: Danish Sports Facility

Source: United Nations (2005)

A local authority in Denmark, of around 20,000 inhabitants implemented a new PPP financing system to increase funding availability for local projects. The financing mechanism consisted of selling public assets, such as school buildings, kindergartens and cleaning services, to private enterprises and then renting them back with a provision that the municipality may buy them back after a number of years. The scheme also included a project for the construction of a sports arena, a soccer stadium as well as a nautical centre under a contract lasting 20 years. The scheme was based on provisions of the Danish tax system, which allowed the leasing company tax advantages that were not available to the municipality. In 2000, a sale and leaseback agreement was signed with a financial institution. The sale and leaseback contract was not formally offered as part of a tender process.

At first sight, the impact of the project was positive. No Danish community had been able, up until that time, to offer such high standards of service through public funds. School children were provided with free personal computers, pensioners were offered free trips and the new sports facilities were of an international standard.

Following a newspaper investigation, however, it was alleged that companies had given money to the soccer club in return for obtaining contracts from the local authority. The mayor was a shareholder of the company and chairman of the soccer club, which was to play in the new soccer stadium.

CPGF performance criteria: Failure

Project Governance adherence

Assessing the Danish Sports Facility case study against the criteria listed in the CPGF, some areas were identified that violated the intent and

prescriptions of the CPGF. The areas listed were aligned with the lessons learned listed in the original case study.

Concept Project Governance Framework	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Contract management capabilities*
Observations	**EU's procurement rules for tender and contracting should be followed.** **A formal tender process should be implemented. In this case it was not, so potential conflicts of interest were not identified.**
2. Responsibility	*1. Committee Accountability* *Overall accountability* *Bridging the gap between project and immediate external and statutory environment.*
Observations	**Public accountability is critical for the success of PPPs. The local council was not effective in accounting for payments.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economic aspects* • *Conflict of interest guidelines* *2. Adherence* *Adherence to the code of ethics should be disclosed and reported on a monthly basis.* *3. Disclosure* *Code should be made publicly available and any changes to the code or waivers from the code must be disclosed*
Observations	**All stakeholders in the PPP arrangement must be transparent in their dealings with any aspect related to the project.**

Case Study B.2: British Embassy in Berlin

Source: United Nations (2005)

Subsequent to the reunification of Germany, the German Government moved from Bonn to Berlin and was later followed by the major embassies. The British Government decided to return its embassy and chose its pre-war site close to the Brandenburg Gate. The old building had been demolished in 1945 but the British Government retained ownership of the site.

The project was procured through the Private Finance Initiative (a PPP approach that originated in the UK) and, after an EU tender bid, the Foreign and Commonwealth Office (FCO) signed a contract with a German consortium, which financed, constructed and would manage the building for 30 years. The six-storey building provides 9,000m^2 in total and houses around 125 UK-based and locally engaged staff. Final adherence to the design was not a requirement of the procurement process, but the rights were assigned and decided in favour of the preferred bidder.

The FCO faced difficulties because they had to undertake a novel form of procurement abroad. The noticeable feature of the project documentation is that it was for the development of a facility outside the UK and consequently issues regarding governing law and conflict in laws arise. It was decided at an early stage that the project agreement would be an English law contract.

In parallel with this, the underlying property interest was the grant by the FCO of a German law-building lease. While the jurisdiction of the German Courts in relation to the building lease could not be entirely excluded, both the project agreement and building lease had been so structured as to place virtually exclusive reliance on dispute resolution procedures, should problems arise in the future.

The project was successfully completed and this shows that despite the

potential complexities, an effective structure was found by implementing common law structures of designing, building, financing and operating of the facility overseas.

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Contract management capabilities*
Observations	**Project agreements can cross borders. This one was governed by English law but adapted to major German law-related financial and tax issues.** **Introduction of dispute resolution clause mechanisms early in the project managed to reduce the legal complexity of the project.**

Case Study B.3: The Mapeley PFI project: sale of land and building by the Inland Revenue

"In March, 2001 the UK government's tax authority (the Inland Revenue and Custom Excise), in order to raise capital for the Exchequer, proposed a PFI through transference of the ownership and management of buildings belonging to the IRCE in a lease back for 20 years. For £220m, 600 buildings went to a consortium (Mapeley), which was chosen as the preferred bidder. The Inland Revenue said at the time of the operation that it was dealing with a UK registered company. However, 18 months later, a review by the auditor's office identified that the company was based offshore in Bermuda. This therefore raised the possibility that ownership of valuable assets was to be shifted beyond the reach of the UK tax authorities to a company registered in a tax haven.

Some experts believe the sale will theoretically eventually cost the government millions of pounds in lost revenues from capital gains tax, although this is not easy to quantify because UK-based companies may make arrangements that entitle them to tax relief. Information disclosed to the UK Parliament and to the public by the government was not accurate or was incomplete. The exact contract structure was revealed fairly late in the procurement process and the press release incorrectly stated that the contract was signed with a UK-based company. A financial crisis affected Mapeley UK, which then sought contract price increases soon after the signing of the contract, demonstrating a poor due diligence and accountability process during tender evaluation that should be improved."

CPGF performance criteria: Failure

Project Governance Adherence

Concept Project Governance Framework	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Contract management capabilities*
Observation	**Government officials should be fully informed about key circumstances relating to PPP contracts.**
	B. Cost and Benefit Management
2. Financial Disclosures	*1. Project Finance* *For any financial activities outside the GAAP requirements, full disclosure will be required.* *2. Reports* *Project's financial status to be reported on a quarterly basis.* *3. Corrections and Adjustments* *To be reported quarterly.*
3. Internal Controls	*1. Risk Management Process* *Formal risk management processes should be in place.* *2. Risk Management* *The steering committee must actively ensure that proper risk identification, quantification and mitigation planning is done on the project, not only on financial matters, but covering all aspects of the project.* *3. Risk Disclosure* *Disclosures must be made about all the risks on the project during the total project life-cycle.* *4. Risk Certification* *Requirement for monthly certification by the chairperson of the steering committee of disclosure controls and procedures.*
Observations	**Governments should take into account the reduced tax income from companies registered in tax havens when designing PPP contracts and procurement processes. While the audit process worked as intended, and identified this issue, it should have been identified earlier, during tender evaluation.** **Accurate evaluation of the financial capacity and soundness of the bidder is a key aspect of tender evaluation.**

Case Study B.4: The Chesapeake Forest

Chesapeake Bay is the largest estuary in the United States. The surface area of the Bay and its tidal tributaries is approximately 7,000 square miles, and its watershed comprises 64,000 square miles in six states and the District of Columbia. Historically, the Bay was one of the richest bio habitats in North America; today, it still supports over 3,600 species of plants and animals, and provides fishing, recreation, tourism and other employment opportunities for the region.

Growing population pressure and loss of undeveloped land have reduced the environmental quality of the Bay. Faced with declining water quality and severe reductions of fish and shellfish populations, governments in the area made restoration of the Chesapeake Bay an environmental priority.

Much of this land bordered on existing state–owned parkland and forest, creating a unique opportunity to buffer a large area from deforestation and development. However, the state faced several obstacles to this environmentally desirable goal:

- The state lacked funding to acquire the land,
- The state lacked resources to manage the land after purchase (the state estimated that four full-time foresters and associated support services would be required)
- Cessation of timber harvesting would cause unacceptable disruption of the local economy in this largely rural part of the state

In 1999, a lumber company offered for sale a tract of 58,172 acres in the Chesapeake Bay watershed, including shoreline property. The acquisition of the land was achieved through fairly traditional means. The state purchased one-half of the acreage using state funds, while the remaining 29,000 acres were purchased by an environmental non-profit organisation, which transferred ownership to the state. By December 2000, the state owned all of

the Chesapeake Forest lands.

The state, working with the non-profit environmental group, then sought to craft a PPP, with the following explicit objectives:

- Providing a steady flow of economic activity and employment to support local businesses and communities;

- Preventing the conversion of forested lands to non-forest uses;

- Contributing to improvements in water quality, as part of the larger Chesapeake Bay restoration effort;

- Protecting and enhancing habitat for threatened and endangered species;

- Maintaining soil and forest productivity and health; and

- Protecting visual quality and sites of special ecological, cultural or historical interest.

To achieve these objectives, the state advertised, negotiated and awarded a multiyear contract to a lumber company. This innovative agreement allows the company to harvest up to 1,000 acres of timber annually: an environmentally sustainable level. In return, the lumber firm is required to manage the Chesapeake Forest to the state's social and environmental standards. Harvesting of timber is allowed only where it is consonant with the environmental objectives of water quality and wildlife habitat.

The partners, state and timber company, share the profits generated from the sale of timber, with a 15 percent share of sales revenues being directed to the local county governments. To minimize risk to its private partner, the state agreed to compensate the lumber company for any losses in the first two years. However, this guarantee was never triggered, since the partnership has generated a profit every year since its inception. The lumber company is required to keep a fully accessible and transparent accounting system, open to the state's review, and audited by an independent accounting firm.

CPGF performance criteria: Successful

Project Governance adherence

Concept Project Governance Framework	
P. Project Governance	
A. Project Steering Committee	
1. Composition	*1. Core Competencies* • *Leadership* • *Strategic alignment capability* • *Contract management capabilities*
Observations	**Win-win contractual agreements can be developed and implemented between public and private enterprises.**
B. Cost and Benefit Management	
2. Financial Disclosures	*1. Project Finance* *For any financial activities outside the GAAP requirements, full disclosure will be required.* *2. Reports* *Project financial status to be reported on a quarterly basis.* *3. Corrections and Adjustments* *To be reported quarterly.*
Observations	**Innovative financing and transparent disclosure could provide much needed capital for PPPs.**
D. Ethical, responsible conduct and conflict of interest	
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economic aspects* • *Conflict of interest guidelines*
Observations	**Protecting the environment through an inclusive, transparent and commercial basis provides a platform for sustainability.**

Case Study B.5: The Zurich Soccer Stadium project

A project to build a new football stadium in Zurich was proposed, which included a shopping centre alongside the stadium. The Green Party was, however, opposed to the construction of the stadium on environmental grounds. Local residents reacted against the project as well, because of concerns over increased traffic congestion that would result from the project. To solve the dispute, a referendum was called to approve both the planning permission and the city decision to provide land and funding worth a total of CHF 37.5m, which was 10% of the total project cost. In September of the year 2003, the referendum results showed: 63,26% of the inhabitants agreed to the private plan and 59,19% agreed with the financial participation. Credit Suisse will finance the project with a loan of CHF 370m among a consortium of other private investors. The project involves improvements in the public transportation network with a new tram and bus line to deal with the increase in traffic.

CPGF performance criteria: Successful

Project Governance Adherence

Table 5.3: Concept Project Governance Framework (CPGF)

	D. Ethical, responsible conduct and conflict of interest
3. Integrated sustainability	*1. Adherence* *SHE requirements should be to international standards, as a minimum, supplemented by host country requirements.*
4. Social	*1. Adherence* *Social and socio-economic considerations should be to international standards, as a minimum, supplemented by host country requirements.*
Observations	• **Public scrutiny by a referendum before the final approval of a project provides benefits. Participation is positive as it generates better understanding by the community through open debate.** • **Full consideration should be given to project-related impacts, such as traffic congestion, noise pollution, etc., prior to project approval.**

Case Study B.6: D47 Motorway Project (Czech Republic)

In 2001, a PPP project to improve the D47 motorway was initiated and launched in the Czech Republic. The project was aimed at improving the infrastructure requirements to meet EU standards and the expected greater use of motorways. Estimated at US$ 1.5 billion, the 80km motorway would form part of the Trans-European Network of motorways linking the Baltic with the Balkans and would connect Ostrava on the Polish border with the existing motorway network at Lipnik Nad Becvou. Financial close for the project was scheduled for autumn 2002. It was intended to be the first motorway project in the Czech Republic to be built using a payment structure based on shadow tolls. In March 2001 Kellogg Brown & Root (KBR), in consortium with others, signed a contract with the Czech Government for a 30-year concession to design, build, finance and operate the D47 motorway in the Czech Republic (Halliburton, 2002). The contract stipulated several conditions regarding the final price, including risks involved in the buy-out of property and receipt of land-use permits, which would all be covered by the Czech government.

In April 2003, the Czech government decided to cancel the contract due to strong criticism of the price, apparent contract omissions and the fact that a significant amount of money could be saved even though a possible penalty for early termination
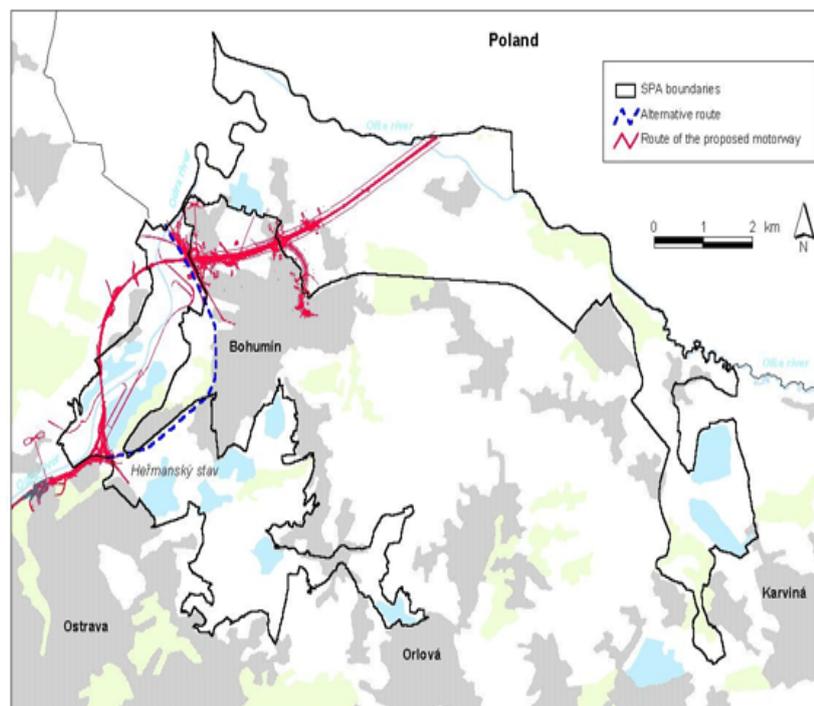
might have to be forfeited. In addition, environmental groups, led by Bird Life International (BLI) (2003), claimed that the construction would severely damage the environment and urged that an alternative route be considered. In short, BLI claimed that the site was an Important Bird Area (IBA) and formed part of the proposed Special Protection Areas Hermansky stav-Struzka. Within the site, the construction would affect important breeding sites of the Corncrake, Spotted Crake, Marsh Harrier, Honey Buzzard, Kingfisher, as well as wintering grounds of the Common Merganser (it is also the only regular breeding site of this species in the Czech Republic), White- tailed Sea Eagle, and many other species listed in Annex I of the Birds Directive. The planned route also leads through important breeding grounds for the European Fire-bellied and Yellow- bellied Toads and an area important for the Hermit Beetle and for the European Beaver (priority species of Annex II and Annex IV of the Habitats Directive). In conclusion, the BLI proposed an alternative route that seemed cheaper and more environmentally friendly.

A parliamentary commission was appointed to investigate the circumstances of the award and subsequent termination of the contract. Compensation for the constructing consortium was agreed in July 2003.

The project was restructured using traditional methods through open tender processes for construction. Financing was provided via the State Transport Infrastructure Fund as well as through bonds and loans.

CPGF performance criteria: Fail

Project Governance adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Contract management capabilities*
Observations	• **The contracting strategy should be carefully selected upfront with a competitive tender process as pre-requisite for any infrastructure related project.** • **An efficient and impartial dispute resolution system should be considered in advance.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment*
Observations	**Respected and reputable environmental groups should be consulted.**

Case Study B.7: Tajikistan Pamir Private Power Project

Source: United Nations (2005), The World Bank Group (2007), Markandya, A. & Sharma, R.Y. (2004)

In Tajikistan, one of the poorest countries in the former USSR region, the IFC and the Aga Khan Fund for Economic Development (AKFED), together with the Tajikistan government, are working on the development of a new electricity generation and distribution project in Gorno-Badakhshan region for 250,000 residents. A new company was established, 70% owned by AKFED (a group of private, non-denominational development agencies) and 30% by IFC. The project will cost US$ 26 million. In addition, the Swiss government provided US$ 5 million to maintain the tariff increase required in the early years in line with the national tariff and to support a minimum consumption amount. The company will control and operate all existing electricity generation, transmission and distribution facilities in Gorno-Badakhshan under a 25-year concession, complete with a partly constructed hydroelectric plant but increasing its capacity from 14 MW to 28 MW. It will also operate another 8 KW plant in the city of Khorog and construct a river regulating structure at the upstream Yashikul Lake to ensure adequate flow in winter, and rehabilitate other assets, including substation, transmission and distribution lines.
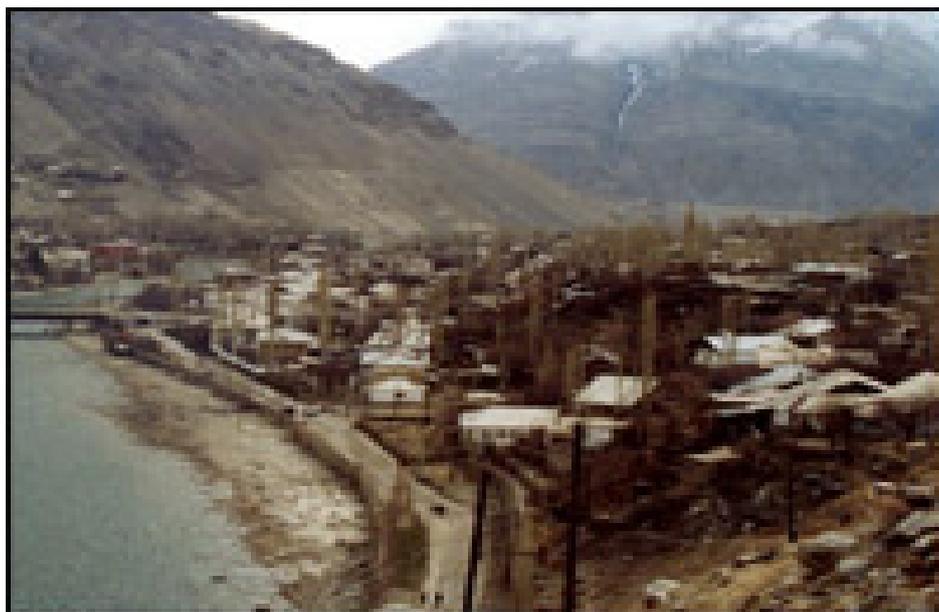
Khorog, Capital of Gorno Badakhshan Oblast

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management*
Observations	• **Innovation funding mechanisms can stimulate development in poorer countries and provide a basis for sustainable development.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*1. Standards* *A code of ethics should be established and signed by each member of the steering committee. The code should include (as minimum):* • *Socio-economic aspect*
3. Integrated sustainability	*1. Adherence* *SHE requirements should be to international standard, as a minimum, supplemented by host country requirements.*
Observations	• **A concession can successfully grant a legal, regulatory, environmental (including deforestation and pollution), financial and technical framework with parliamentary approval that reduces political risk of future changes.** • **Political and social risk can be mitigated by a social protection scheme tariff.**

Case Study B.8: Scottish Schools

In Scotland, a large portion of PPP funding (nearly 50%) has been directed towards schools. In 2001, school PPPs accounted for 10% of all capital expenditure committed by the Scottish Executive. In March 2003 it was announced that an additional £750m, over and above the already committed £1.2bn, would be invested in the further rebuilding or refurbishing of school buildings. The project intended to provide quality working environments and access to world class information technology, enabling pupils, each with their own e-mail address, and teachers to work together, productively and efficiently, to raise standards and maximise the individual potential of every participant.

However, in 2003, the strong incentives provided to private stakeholders were questioned by the Caithness Community when complaints arose due to the invasion of green spaces (parks and recreation areas) adjacent to schools. In terms of the PPP agreements, the private stakeholders were given access to some of these lands for private developments without proper consultation with communities. Adding to this, many teachers started raising concerns in 2004 regarding the quality of the newly built and refurbished classrooms and the seemingly less educational friendliness of the new facilities. A survey was launched among Scottish teachers that indicated, amongst other issues, that:

- Only 27% of teaching staff felt their comments had an impact on the plans for the school
- Only 30% of teaching staff believed that their new school represented good value for money
- Only 20% of teaching staff felt they had been properly consulted regarding recreational facilities for pupils
- Only 30% of teaching staff felt they had been given proper input on resource areas such as libraries
- Only 25% of teaching staff felt they had been properly consulted on health and safety issues

CPGF performance criteria: Questionable

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Contract management capabilities*
Observations	**PPPs within the school sector can improve educational standards and give more value for money.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economical aspects* • *Conflict of interest guidelines*
Observations	**The impact on the immediate communities and input from direct stakeholders should be formalised before major capital expenditure. The interest of the private and public stakeholders should be carefully balanced.**
3. Integrated sustainability	*1. Adherence* *SHE requirements should be to international standard, as a minimum, supplemented by host country requirements.*
Observations	**PPPs can have a substantial social impact. Schools are set up in many of Glasgow's so-called 'deprived' areas.**

Case Study B.9: Bulgaria, Sofyiska Voda – Water Supply Programme

Sources: United Nations (2005), European Bank for Reconstruction and Development (EBRD) (2000)

Although Bulgaria has a well-developed water supply system servicing 99% of the population, the system itself has been badly maintained. It was estimated that around 3% of the population connected to drinking water supply systems uses water with dangerously high levels of nitrates, oil and serious microbiological contamination. Due to this dilemma infrastructure systems for water supply and wastewater treatment and disposal are in the process of radical change in Bulgaria. The country's water strategy is focused on improving the quality and complying with EU environmental standards.

A utilities company, Sofijska Voda, was formed, which is majority owned by International Water UU (Sofia), and parent companies that include Bechtel Enterprises Holdings Inc., Edison SpA and United Utilities plc. The company has taken over operating responsibility for the water and wastewater system for Sofia under a 25-year concession agreement. The municipality of Sofia holds 25% of the shares. The EBRD's finance of EUR31 million will support Sofijska Voda's capital expenditure programme for the first five years of the concession, including start-up costs. The sponsor group will provide combined subordinated debt and equity, which, together with funds generated internally by the company, bring the total amount of the five-year project to EUR94 million. The intention was that the initial investment would concentrate on rehabilitation of the water and sewerage networks to reduce leakage and infiltration. By 2002, the company had completed 71 rehabilitation projects on the water supply network and 15 projects on the sewerage networks in the city, resulting in improved quality of service for about 25,000 habitants.

Eventually, the residents of Sofia will benefit from the country's first privately managed water and wastewater company, servicing 1.3 million people. This initiative had a strong socio-economical and

environmental impact on the city, while the funds help the company improve maintenance of the city's water supply network (running to an overall length of 3 500 km) as well as 1 700km of sewage network. Two water treatment plants were also included in the company's operations, namely Bistritsa and Pancharevo.

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Contract management capabilities*
Observations	**Through a comprehensive PPP structure, which is lenient towards private enterprise, successful and sustainable entities can be established in the basic utility supply industry.**
2. Responsibility	*1. Committee Accountability* *Overall accountability* *Bridging the gap between project and immediate external and statutory environment.*
Observation	**Proper handover and acceptance of accountability can establish successful PPP agreements.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economical aspects* • *Conflict of interest guidelines*
Observations	**The project addressed all items in a sustainable fashion.**

Case Study B.10: Vancouver Landfill Cogeneration Plant

The City of Vancouver, British Columbia, owns and operates one of the largest landfill sites in Canada. The site serves approximately 900,000 residents and receives approximately 400,000 tonnes of solid waste annually. The site produces landfill gases as a by-product of waste decomposition, including methane - a greenhouse gas that contributes to global climate change.

Due to the increase in landfill congestion, spreading of odours and increased environmental impact, the city began collecting and burning (flaring) the gases in 1991. This burning created significant heat energy and started threatening compliance with the Kyoto Protocol.

Needing to address the potential increase in negative environmental impact, the city decided to investigate the potential use of the landfill gas (LFG) for cogeneration. Through a competitive bidding process, Maxim Power was selected to finance, design, build, own and operate an LFG beneficial use facility. Following a detailed and structured proposal evaluation and negotiation process, a 20-year PPP contract was approved by the city council in February 2002. A formal PPP structure was developed, under which the LFG would be used to provide electricity to between 4 000 and 5 000 homes. Waste heat from the power generation process is recovered as hot water and sold to a nearby greenhouse complex for heating purposes. Using, rather than burning the LFG resulted in a net effect of 6 000 less vehicle emissions in Canada.

The City of Vancouver only guarantees the provision of LFG and makes no further payments to Maxim Power. In addition, the city receives ten percent of gross revenues from the sale of both the electricity and thermal energy generated by the cogeneration plant, amounting to approximately US$ 400 000 annually. The cost to the city for collecting the LFG amounts to

approximately US$ 250 000 per year.

The total capital cost of the project, including the advanced control system upgrade, amounted to US$ 10 million.

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
P. Project Governance	
A. Project Steering Committee	
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Business / project alignment* • *Leadership* • *Strategic alignment capability* • *Contract management capabilities*
Observations	**The example of the Vancouver Landfill site (although not large in capital value) is a good indication of the successes that can be achieved with good strategic alignment, focusing on core competencies and well negotiated contracts and the benefits of working towards a win-win situation in PPPs.**
B. Cost and Benefit Management	
2. Financial Disclosures	*1. Project Finance* *For any financial activities outside the GAAP requirements, full disclosure will be required.*

	2. Reports *Project financial status to be reported on a quarterly basis.*
Observations	**The cost and economic situation of the LFG operation is well documented and reported on.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* *2. Adherence* *Adherence to the code of ethics should be disclosed and reported on a monthly basis.*
Observations	**The primary drive for this project was environmental considerations and adherence to the Kyoto Protocol. The eventual environmental effect is well documented and published.**

Case Study B.11: Channel Energy Poti Port Project, Georgia

Source: United Nations (2003), European Bank for Reconstruction and Development (2002)

Since the mid 1990s, cargo traffic flow has increased dramatically from Europe through the historic Black Sea ports of Odessa, Varna and Constantza. Especially the facilities at Port of Poti started experiencing major overload. The Port of Poti was established in 1858 and is strategically located as a gate to the Caucasus and Central Asian economies. It is the shortest route connecting Europe with Central Asia and further expansion of the Euro-Asian Transport Corridor known as TRACECA (the new 'Silk Road'), were bound to further increase cargo transportation by sea via the Port of Poti.

To address this need for expansion, a company (Channel Energy (Poti) Ltd.) was set up as a joint venture between an energy firm and Poti Sea Port (Georgia) under the sponsorship of a holding group. The - project was funded through EBRD as well as Black Sea Trade and Development Bank (BSTDB) to cover the initial capital layout of US$ 30 million.

Apart from alleviating the immediate cargo congestion at the port, the project also formed part of the longer term capital programme for the development of large-scale refinery projects in the Caspian region, as well as ferry landing facilities and an oil seed plant. The overall project objectives included:

- enhancing the service standards in the region through privatisation,
- promoting greater competition in the private sector; and
- developing an environmental safety strategy.

Environmental compliance proved to be a major challenge, especially regarding potential oil spillages outside the port and the future of the Kolkheti nature reserve. An Environmental Impact Assessment (EIA) was conducted, resulting in the following proactive and immediate actions:

- Additional technical parameters on the effluent treatment plant had to

be presented for approval.

- A detailed oil spills response plan had to be developed and coordinated prior to commissioning of the terminal.

- A self-monitoring programme had to be developed and agreed, and

- The neighbouring countries had to be informed about the project and its potentially adverse trans-boundary impacts under adverse scenarios.

Over and above the above actions, Georgia also developed its National Oil Spill Contingency plan that was aimed at achieving safe and environmentally responsible passage through the Strait.

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
P. Project Governance	
A. Project Steering Committee	
1. Composition	*1. Core Competencies* • *Strategic alignment capability* • *Contract management capabilities*
Observations	**Although not much information is available regarding the detail contractual arrangements or financial sustainability of the project, the involvement of EBRD provides a clear indication of the strategic forward thinking of the leaders in the region. The upgrading of the port should not be viewed in isolation, but should be seen as part of the total investment for the economic revitalisation of the area.**
D. Ethical, responsible conduct and conflict of interest	
1. Code	*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):* • *Environment*
Observations	**Much effort went into establishing a well recognised environmental protection plan.**

Case Study B.12: New Multi-purpose Terminal in the Baltic Sea Port of Ventspils, Latvia

Source: United Nations (2005), European Bank for Reconstruction and Development (1999), Noord Natie Ventspils Terminals website (2007)

Noord Natie Ventspils Terminals LLC (NNVT) is a joint venture that was established between Noord Natie nv and Ventplac LLC to address the demand for general cargo traffic in the Baltic Sea and to promote the Port of Ventspils (the fifteenth largest port in Europe) as a gateway to Russia. Noord Natie nv (a Belgium-based company established in 1882) is a respected ports operating company and brought its substantial international experience in port operations, particularly in the management of high-quality container terminals, to the development of the multi-purpose terminal.

With the aim of stimulating private enterprise in Latvia, a PPP arrangement was formalised with loans secured from European Investment Bank (EIB) and the EBRD. The initial funding was sourced to bring the country's railway infrastructure into line with the needs of a modern high-volume transit route and to upgrade the rail network at Latvia's main port. The upgrade was also aimed at rerouting the transport of hazardous chemicals, in line with European environmental standards.

The total cost of the investment is about EUR 69.0 million with public financing exceeding EUR 29.5 million. NNVT received a EUR 19.5 million loan from the EBRD, to be used as a private contribution to the PPP, and in particular to finance the purchase and installation of cargo handling equipment and other superstructure for the multi-purpose inter-modal terminal.

A comprehensive EAP was developed, in line with national and EU / World Bank environmental and health and safety standards.

CPGF performance criteria: Successful

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Business / project alignment* • *Leadership* • *Strategic alignment capability* • *Contract management capabilities*
Observations	**Realising the strategic positioning and geographical location of the port, pro-active leadership and innovative financing secured a successful project. The role of strong leadership from all participating stakeholders should be mentioned, with NNVT a strength in the European ports industry today.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economical aspects* • *Conflict of interest guidelines*
Observations	**Uncompromising environmental impact assessments were conducted to ensure a safe and healthy working environment.**

Case Study B.13: Three Gorges Dam

The largest dam on earth, The Three Gorges Dam in the Yangste River, is nearing completion, with the final handover date being 2009. As of 2007, it is the largest hydroelectric river dam in the world - more than five times the size of the Hoover Dam.

Initiated in 1919 by Sun Yat-sen in his address, 'The International Development of China', several Chinese leaders were tempted to start constructing the dam, but, with limited ability, they started the Gezhouba Dam first. In April 1992 the final approval was obtained from the National People's Congress and construction began in 1994. Structural work was finished on 20 May 2006, nine months ahead of schedule.

The reservoir began filling on 1 June 2003 and will occupy part of the scenic Three Gorges area between the cities of Yichang, Hubei, and Fuling, Chongqing. The dam will be fully operational in 2009 when the final set of hydroelectric generators has been commissioned.

Since its initiation, the project has been plagued with controversy. As with many LCPs, there is a continuous debate over the costs and benefits of the Three Gorges Dam. Although there are economic benefits from flood control and hydroelectric power, there are also concerns about the future of 1.13 million people who will be displaced by the rising waters, the loss of many valuable archaeological and cultural sites, as well as the potential devastating effects on the environment. During mid-2007, the Chinese national auditor also reported the following items (Ryder, 2007):

- "Almost half the project's 1448 construction supervisors were either unlicensed or unqualified for the job,
- Several engineering companies subcontracted projects worth US$ 108 million to other construction units and charged management fees of US$ 7 million, in violation of project regulations. The auditors cite one example: for constructing the shiplock, the Three Gorges Corporation,

signed a US$ 85 million contract with the Yichang Anlian Hydropower Company, which then subcontracted another 18 companies to do the job and charged a management fee of US$ 5 million,

- All but one of 347 supervision contracts checked was awarded to the Three Gorges Corporation's subsidiary, Three Gorges Development Company, without public bidding. About half were carried out without a signed contract.

- The auditors could find no written records for 22 of the 37 construction 'flaws and incidents' reported by the State Council's quality inspection group, which include cracks in the dam structure and problems with the turbines."

Other problems discovered by the auditors include:

- "Improper contract management that increased project costs by US$ 61 million.

- About US$ 5 million was spent on equipment and materials that has never been used.

- The Three Gorges Corporation illegally acquired about 20 hectares of land at the dam site and then built a four star hotel and a theme park (that charges admission)."

CPGF performance criteria: Questionable

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Project finance and cost management* • *Business / project alignment* • *Front-end-Loading management* • *Crises response* • *Industry knowledge* • *International experience* • *Leadership* • *Strategic alignment capability* • *Contract management capabilities*
Observations	**To provide an independent view on the status of the competencies of the key steering committee members**

	would not be possible at this stage. Although the overall financial management seems to be under control, the allocations and administration of contracts seems questionable from the audit reports.
	B. Cost and Benefit Management
1. Financial Reporting Responsibility	*1. Steering Committee* *Report against approved budget.*
Observations	**From general information available, it seems as if financial reports are submitted regularly on the project.**
2. Financial Disclosures	*2. Reports* *Project financial status to be reported on a quarterly basis.* *3. Corrections and Adjustments* *To be reported quarterly.*
Observations	**Financial reporting done well.**
	C. Project Reviews and Audits
1. Independence	*1. Objectivity* *Independence and objectivity of the project auditors and reviewers must be ensured.* *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.*
Observations	**Regular project audits being done and published.**
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economical aspects* • *Conflict of interest guidelines* *2. Adherence* *Adherence to the code of ethics should be disclosed and reported on a monthly basis.* *3. Disclosure* *Code should be made publicly available and any changes to the code or waivers from the code must be disclosed.*
3. Integrated sustainability	*1. Adherence* *SHE requirements should be to international standards, as a minimum, supplemented by host country requirements.*
4. Social	*1. Adherence* *Social and socio-economic considerations should be to*

	international standards as a minimum, supplemented by host country requirements.
Observations	**Section D of the CPGF remains contentious for this project. In general, dissatisfaction remains with the way that public participation was handled during the assessment studies on the socio-economic and environmental impacts.**

Case Study B.14: Ecuador Oil Production

The economic development of Ecuador is largely dependant on the exploration of its natural resources. Such a resource is the rich oil fields in the rain forests of the Amazon. Since its election in 1992, the conservative government has intensified oil production and by 1996 had secured loans of more than USD$ 400 million from the World Bank on condition that the government complies with their environmental standards. However, the development of the oil resources had a major impact on the indigenous tribes and people living in the Amazon forests, especially the Huaorani, who are most vulnerable to development, mainly due to their dispersed population (approximately 1200 people living in 17 different communities). In 1990 the Huaorani tribe established their own organisation, called ONHAE, to defend their interests. In 1993 ONHAE accepted offers from Maxus Energy Corporation to exploit the Huaorani territory for oil. However, it is believed that the agreements did not carry the general consent of the Huaorani people, since studies have shown form previous projects that the development had a devastating impact on the communities, ranging from increase in alcohol abuse to prostitution, illness, natural resource pollution, etc. It also surfaced that the Tagaeri, a grouping within the Huaorani, who had most objected to the oil developments, was actively pursued and killed to eliminate their opposition to the oil projects.

CPGF performance criteria: Questionable

Project Governance Adherence

Concept Project Governance Framework (CPGF)	
	P. Project Governance
	A. Project Steering Committee
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects*

	• *Socio-economic aspects* • *Conflict of interest guidelines* *2. Adherence* *Adherence to the code of ethics should be disclosed and reported on a monthly basis.* *3. Disclosure* *Code should be made publicly available and any changes to the code or waivers from the code must be disclosed*
3. Integrated sustainability	*1. Adherence* *SHE requirements should be to international standards, as a minimum, supplemented by host country requirements.*
4. Social	*1. Adherence* *Social and socio-economic considerations should be to international standards, as a minimum, supplemented by host country requirements.*
Observations	**Although limited information is available regarding specific oil projects, the whole program of oil field development in Ecuador is clouded in severe human rights and environmental violations. Acknowledging that the area is difficult to work in, the proper community education and development should form part of the sustainability and socio-economic development of the region.**

Case Study B.15: Ok Tedi Mine – Papua New Guinea

The Ok Tedi copper mine lies in the south western area of Papua New Guinea (PNG). South of the mine lies the Lower Ok Tedi area, populated by approximately 3 000 people. The Oki Tedi River runs from the northern part towards the south, with about 40 000 people occupying the banks of the river. The mines started operating in 1981, when Broken Hills Properties Co. Ltd. (BHP) from Australia, and Ok Tedi Mining Limited (OTML) obtained a mining licence from the PNG government. According to the agreement, BHP/OTML were not to discharge tailings and wastes into the river and the development of waste disposal facilities commenced after the approval of USD$ 65 million by the corporate board.

With the waste-disposal facilities well into the development phase, heavy rainfall and land tremors (quite common in the area) resulted in a major landslide that swept down the side of the mountain. A total of 60 million tonnes of overburden and tailings discharged into the river. The environmental pollution smothered vegetation along the river banks, impacted fisheries and caused major skin diseases to those using the river for washing. The inhabitants along the river (plaintiffs) launched a legal claim of USD$ 2.84 billion against BHP/OTML over alleged environmental pollution. The court proceedings commenced in the Supreme Court of Victoria, where the defendant denied any wrongdoing, claiming that all activities were conducted under the license promulgated by the PNG government. Of major concern (and strengthening the case for a global standard for project governance) was the defendant's reasoning that the actions of BHP/OTML were sanctioned under PNG laws. Obviously, as a developing country with hardly any industrial development, no laws requiring environmental assessment and social impact considerations exist.

Eventually the case was settled outside of the court, whereby BHP/OTML had to (among other agreements) compensate the affected parties financially to the amount of USD$ 150 million and cover the plaintiffs' legal costs.

Although the case was never fully tested in court, the case clearly highlighted the need for some form of internationally agreed upon guideline, or even legislation, for handling environmental, socio and socio-economic studies.

CPGF performance criteria: Failure

Project Governance Adherence

Concept Project Governance Framework (CPGF)

	P. Project Governance
	A. Project Steering Committee
1. Composition	*1. Core Competencies* • *Crisis response* • *Front-end-Loading management* • *Leadership*
2. Responsibility	*1. Committee Accountability* *Overall accountability* *Bridging the gap between project and immediate external and statutory environment.*
Observations	The project was overshadowed by the environmental disaster: the type of crisis response and leadership will always be judged by the way the situation was handled. The defendant's claim of innocence in a situation like this can potentially convey the wrong message, but the satisfactory settlement was a good recovery. A major criticism is the lack of upfront planning (front-end loading) that could have prevented the disaster.
	D. Ethical, responsible conduct and conflict of interest
1. Code	*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):* • *Environment* • *Social aspects* • *Socio-economical aspects* • *Conflict of interest guidelines* *2. Adherence* *Adherence to the code of ethics should be disclosed and reported on a monthly basis.*

	3. Disclosure *Code should be made publicly available and any changes to the code or waivers from the code must be disclosed.*
Observations	**The project could be considered a landmark case in the formalisation of environmental requirements for large projects.**

References

ABEDNEGO, P.M. and OGUNLANA, S. O. 2006. Good project governance for proper risk allocation in public-private partnerships in Indonesia. *International Journal of Project Management*, 2006, Vol. 24, pp 622-634.

ARBANI, F. 2006. *Case Studies in Project Management,* http://www.pmi.org/Search/AdvancedResults.aspx?k=case%20studies&s=Everywhere. Accessed 31 July 2007.

ARMSTRONG, P. 2005. *Report on the Governance Structures for the Lesotho Highlands Water Project.* Edward Nathan Corporate Law Advisors, May 2005.

Asian Development Bank. 2001. Saving Asia's Environment 2001. *The Asian Development Bank Review*, December 2001 Issue.

Association for Project Management (APM). 2004. *Directing Change: A Guide to Governance of Project Management.* www.apm.org.uk.

Association for Project Management (APM). 2005. *A guide to governance of project management.,* www.apm.org.uk. Audit Committees. Combined Code Guidance, A report and proposed guidance by an FRC appointed group chaired by Sir Robert Smith. January 2003.

ATKINSON, R.A. 1999, Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria, *International Journal of Project Management,* Vol. 17, No. 6, pp.337-342.

BASKIN, J.B. and MIRANTI, P.J. 1997, from Micklethwait and Wooldridge, 2003. *A History of Corporate Finance.* Cambridge: Cambridge University Press.

BELASSI, W. and TUKEL, O.I. 1996. A new framework for determining critical success/failure factors in projects, *International Journal of Project Management*, 1996, Vol.14, No. 3, pp 141-151.

BERLE, A.A. and MEANS, G.C. 1968. *The Modern Corporation and Private Property,* Revised Edition, New York: Harcourt, Brace & World Inc.

from MICKLETHWAIT, J. & WOOLDRIDGE. A., 2003. *The Company: A Short History of a Revolutionary Idea* London, UK: Weidenfeld & Nicholson.

Bird Life International. 2003. *Conflict areas between the TENs and nature conservation,*http://www.birdlife.org/action/change/europe/tent_case_st udies.pdf. Accessed 26 July 2007.

BLACK, K. 1996. Causes of Project Failure: A survey of professional engineers*, PM Network*, November 1996, pp 21-24.

BLOXHAM, E. 2002, *Value-led organisations.* Capstone Publishing: Oxford.

BOYLE, A.E. and ANDERSON, M.R. 1996. *Human Rights Approaches to Environmental Protection.* Clarendon Press: Oxford.

BROMLEY, D. B. 1986. *The Case-study Method in Psychology and Related Disciplines.* New York: John Wiley & Sons.

BRYMAN, A. 1988. *Quantity and Quality in Social Research.* London: Unwin Hyman.

BRYSON, J.M. and BROMILEY, P. 1990. The Art of Continuous Change: Launching Complements Theory and Term-paced Evolution in a Relentlessly Shuffling Organisation, *Administration Science Quarterly,* Vol. 42, pp 1-34.

BUCKLEY, C. 1995. Delphi: a methodology for preferences more than predictions, *Library Management,* Vol. 16, No. 7, pp 16-19. ?

BURKE, R. 1999. *Project Management – Planning & Control Techniques,* 3rd ed. Startford Upon Avon: Promatec International.

CADBURY, A. 1992. *Report of the Committee on the Financial Aspects of Corporate Governance.* Gee & Co. Ltd, London.

Caithness Community Website. 2005. *Are you aware of the PPP issues?,* http:/www.caithness.org, 23 October 2005. Accessed on 27 July 2007.

Cambridge International Dictionary of English. 1995. Cambridge University Press.

CANTRILL, J.A., SIBBALD, B. and BUETOW, S. 1996. The Delphi and nominal group techniques in health services research, *International Journal of Pharmacy Practice,* Vol. 4, No. 2, pp. 67-74.

CAVALLI-SFORZA, V. and ORTOLANO, L. 1984. Delphi forecasts of land-use – transportation interactions, *Journal of Transportation*

Engineering, Vol. 110, No. 3, pp. 324-39, from MULLEN, P., 2003, Delphi: Myths and Reality, *Journal of Health Organisation and Management*, Vol.17, No.1, pp. 37-52.

CHANDLER, A.D. and SALISBURY, S. 1965. The Railroads: Innovators in Modern Business Administration, in Mazlish, B., ed. *The Railroad and the Space Program: An Exploration of Historical Analogy,* pp 127 162, Cambridge: MIT Press, from MILLER, R. & LESSARD, D., eds. 2000. *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks and Governance.* Massachusetts: Massachusetts Institute of Technology.

CLELAND, D.I. 1986. Measuring Success: The Owner's Viewpoint*, Proceedings of the 18th Annual Seminar/Symposium*, Montreal, Canada, Project Management Institute, pp 6-12.

CRAWFORD, L. and POLLACK, J. 2007. How generic are project management knowledge and practice? *Project Management Journal,* Vol 38, No 1, pp 87-96.

CRITCHER, C. and GALDSTONE, B. 1998. Utilising the Delphi technique in policy discussion: a case study of a privatised utility in Britain, *Public Administration,* Vol. 76, No. 3, pp 431-50.

CRUVER, B. 2003. *Enron: Anatomy of Greed.* Reading, Berkshire: Arrow Books, Cox & Wyman Ltd.

CYERT, R.M. and MARCH, J.G. 1963. *A Behavioural Theory of the Firm,* Englewood Cliffs, NJ: Prentice Hall.

DALKEY, N.C. 1967. *Delphi,* Rand Corporation.

DALKEY, N. and HELMER, O. 1963. An experimental application of the Delphi method to the use of experts*, Management Science,* Vol. 9, pp. 458-67*.*

DELBECQ, A.L., VAN DE VEN, A.H. and GUSTAFSON, D.H. 1975. *Group Techniques for Program Planning: a guide to nominal group and Delphi processes.* USA; Scott, Foresman and Company.

DEVAPRIYA, K.A.K. 2006. Governance issues in financing of public-private partnership organisations in network infrastructure industries, *International Journal of Project Management,* Vol 24, pp 557 – 565.

DICKSON, P.G.M. 1993. *The Financial Revolution in England: A Study in the Development of Public Credit in England 1688 – 1756,* Aldershot, Hampshire, U.K.: Gregg Revivals, from MICKLETHWAIT, J. & WOOLDRIDGE, A. 2003. *The Company: A Short History of a Revolutionary Idea.* London, UK: Weidenfeld & Nicholson.

DOSI, G. 1982. Technology Paradigms and Technological Trajectories: A Suggested Interpretation of the Determinants and Directions of Technical Change, *Research Policy,* vol. 11, no. 3, pp 147 – 192.

DRORI, G.S., MEYER, J.W. and HWANG, H. 2006, *Globalization and Organization,* New York: Oxford Press

DUNLOP, A. 1998. *Corporate Governance and Control*, London: The Chartered Institute of Management Accountants

DVIR, D. and SHENHAR, A.I. 1992. Measuring the success of technology-based strategy business units, *Engineering Management Journal*, 1992 vol. 4, no 4, pp 33-38.

e-architect. 2004. *Lack of consultation with teachers leads to concern over quality of school rebuilds.* http:/www.e-architect.co.uk, May 2004. Accessed on 27 July 2007.

EASTERLY, W. 2001. *The Elusive Quest fro Growth: Economist's Adventures and Mis-adventures in the Tropics.* Cambridge: MIT Press.

ECKSTEIN, H. 1975. Case study and theory in political science. In Greenstein, F.I. & Polsby, N.W. (Eds.). *Handbook of Political Science,* Volume 7: Strategies of Enquiry.

EDWARDS, D.J.A. 1989. How clinical theory and practice are actually developed – Case study method in cognitive behaviour therapy, *Knowledge and Method: On the Philosophy and Methodology of the Human Sciences.* Pretoria: Human Resources Research Council.

EISENHARDT, K.M. 1989. Building Theories form Case Research, *Academy of Management Review,* Vol. 14, No. 4, pp 532 – 550.

EKSTEDT, E., LUNDIN, R.A., SÖDERHOLM, A. and WIRDENIUS, H. 1999. *Neo-Industrial Organising: Renewal by action and knowledge formation in a project-intensive economy,* London: Routlegde

EKSTEDT, E., LUNDIN, R.A., SÖDERHOLM, A. and WIRDENIUS, H. 1993. Project organization in the squeeze between short-run flexibility and

long-run inertia, PMI'93 Seminar/Symposium, *Smooth Sailing with Project Management.* San Diego, CA: Project Management Institute.

EKSTEDT, E., LUNDIN, R.A., SÖDERHOLM, A. and WIRDENIUS, H. 1999. *Neo-Industrial Organising: Renewal by action and knowledge formation in a project-intensive economy.* London: Routledge.

EL-MARASHLY, A.F. 1990. Project Management as perceived from ancient Egyptian projects. in *Dimensions of Project Management.* Edited by Reschke, H. and Schelle, H. Munich: Springer-Verlag, pp 275-289.

EMORY, C.W. 1985. *Business Research Methods,* 3rd Ed. Homewood, Illinois: Irvin.

Engineering News. 2006. *German firm blacklisted by World Bank in light of Lesotho corruption,* Issue 2006/11/06.

Environment Canada, 2007, *Waste Management – Vancouver Project.* http://www.ec.gc.ca/wmd-dgd/default.asp?lang=En&n=FA04A146-1. Accessed on 29 July 2007.

ESTY, B.C. 2004. *Modern Project Finance – A Casebook,* Boston: John Wiley & Sons.

European Bank for Reconstruction and Development (EBRD). 1999. *Ventspils Port Multi-Purpose/Intermodal Terminal – Latvia,* http://www.ebrd.com/projects/psd/psd1999/5920.htm. Accessed on 29 July 2007.

European Bank for Reconstruction and Development (EBRD). 2000. *EBRD promotes improved water, waste-water services in Sofia,* Press Release, 15 December 2000. http://www.ebrd.com/new/pressrel/2000/112dec15x.htm. Accessed on 27 July 2007.

European Bank for Reconstruction and Development (EBRD). 2002. *JSC Channel Energy Poti Port.* http://www.ebrd.com/projects/psd/psd2000/11846.htm. Accessed on 29 July 2007.

FERGUSON, N. 2001. *The Cash Nexus: Money and Power in the Modern World 1700 – 2000.* London: Allen Lane.

FISHER, K., JUNGBECKER, A. and ALFEN, H.W. 2006. The emergence of PPP task Forces and their influence on project delivery in Germany, *International Journal of Project Management,* Vol 24, pp 539 – 547

FLYVBJERG, B. 2005. Design by Deception, *Harvard Design Magazine,* Spring / Summer 2005

FLYVBJERG, B. 2006. Five Misunderstandings About Case-Study Research, *Qualitative Inquiry,* Vol. 12, No. 2, pp 219 – 245.

FLYVBJERG, B., BRUZELIUS, N. and ROTHENGATTER, W. 2003. *Megaprojects and Risk: An Anatomy of Ambition.* Cambridge*:* Cambridge University Press.

FORSBERG, K., MOOZ, H. and COTTERMAN, H. 2000. *Visualizing Project Management.* 2nd ed. New York: John Wiley & Sons Inc.

FRAME, J.D. 1999. Course notes: Pre-conference Workshop, PMISA, Johannesburg, South Africa.

FRAME, J.D. 1999. Project'99 – Pre-Forum Workshop*, IIR Training*, Johannesburg.

Friends of the Earth International. 2001. *Towards binding corporate accountability.*
http://www.foei.org/publications/corporates/accountability.html.
Accessed on 22 April 2007.

FUNDAHL, J.W. 1987. The history of modern project management, *Project Management Journal*, Vol.28, No.2, pp. 33-36.

GIDDENS, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration.* Berkeley: University of California Press.

GILLIBRAND, M. 2004. New frontiers for corporate governance in 2004 and beyond, *Corporate Governance Journal,* Vol. 4, No. 1, pp. 4-21.

GIOIA, J. 1996. Twelve reasons why programs fail*, PM Network*, November 1996, pp 16-19.

GITMAN, L.J. 2003. *Principles* of Managerial Finance. 10th Edition. Boston: Addison Wesley.

GLASER, B. And STRAUSS, A. 1967, *The Discovery of Grounded Research,* New York: Aldine, Hawthorne.

GOODMAN, C.M. 1987. The Delphi technique: a critique, *Journal of Advanced Nursing,* Vol.12, pp. 17-31, from MULLEN, P., 2003, Delphi:

Myths and Reality, *Journal of Health Organisation and Management,* Vol.17, No.1, pp. 37-52.

GOODMAN, R.A. 1981. *Temporary Systems. Professional Development, Manpower Utilisation, Task Effectiveness, and Innovation.* New York; Praeger.

GRAY, C.G. and LARSON, E.W. 2000. *Project Management – The Managerial Approach.* Irwin: McGraw-Hill.

Halliburton, . 2002. KBR signs contract for the Czech Republic's D47 Motorway. Press Release, 04 July 2004.

HANDLIN, O. and HANDLIN, M. 1953. From Micklethwait and Wooldridge, 2003, "Origins of the American Business Corporation", Lane, F. (ed), *Enterprise and Secular Change.* Homewood, Illinois: Richard Irwin.

HELMER, O. 1977. Problems in futures research: Delphi and causal cross-impact analysis *Futures,* Vol.9, pp. 17-31.

HELMER-HIRSCHBERG, O. 1967. *Analysis of the Future : The Delphi Method,* Rand Corporation.

HERRIOTT, R.E. and FIRESTONE, W.A. 1983. Multisite qualitative policy research: Optimizing description and generalizability, *Educational Researcher*, Vol 12, pp 14-19,

HIRSCH, R.F. 1989. *Technology and Transformation in the American Electric Utility Industry.* Cambridge: Cambridge University Press.

HODGSON, G.M. 1993. Introduction and Conception and Evolution in Economics? Three Twentieth-Century Theorists, *Economics and Evolution: Bringing Life Back Into Economics,* Vol. 1, No. 52, pp 121 – 185. Cambridge: Cambridge University Press.

HOLLINGSWORTH, J.R. and BOYER, R. eds. 1997. *Contemporary Capitalism: The Embeddedness of Institutions.* Cambridge: Cambridge University Press.

HOOD, C. and JONES, D. 1996. *Accident and Design: Contemporary Debates in Risk Management,* London: UCL Press.

HUGHES, T.P. 1988. *Rescuing Prometheus.* New York: Pantheon.

INGRAM, G. 1994. *Infrastructure and Development*, World Bank Report. Washington DC: World Bank.

INNES, H.A. 1970. *A History of the Canadian Pacific Railroad,* Toronto: University of Toronto Press, from MILLER, R. & LESSARD, D., eds., 2000, *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks and Governance.* Massachusetts: Massachusetts Institute of Technology.

IOD (Institute of Directors). 2002. *Corporate Governance in South Africa – A comparison of the King Report 2002 and The Sarbanes-Oxley Act of 2002.* PriceWaterhouseCoopers.

ISHIKAWA, A., AMAGASA, M., SHIGA, T., TOMIZAWA, G., TATSUTA, R. and MIENO, H. 1993. The max-min Delphi method and fuzzy Delphi method via fuzzy integration, *Fuzzy Sets and Systems,* Vol. 55, No. 3, pp. 241-53, from MULLEN, P., 2003, Delphi: Myths and Reality, *Journal of Health Organisation and Management*, Vol.17, No.1, pp. 37-52.

JAAFARI, A. 2001. Management of risks, uncertainties and opportunities on projects: time for a fundamental shift, *International Journal of Project Management,* Vol 19, pp. 89-101.

JAY, P. 2000. *Road to Riches,* London: Weidenfeld & Nicolson.

JESSOP, B. 1997. The Governance of Complexity and the Complexity of Governance: Preliminary Remarks of Some Problems and limits of Economic Guidance, In Amin, A and Hausner, J., eds., *Beyond Market and Hierarchy,* pp 95 – 128, Cheltenham, UK: Edward Elgar.

JOLIVET, F AND NAVARRE, C. 1996. Large-scale projects, self-organizing and meta-rules: towards new forms of management, *International Journal of Project Management,* Vol. 14, No. 5, pp. 265-271.

JONES, A.H.M. 1974. from Micklethwait and Wooldridge, 2003, *The Roman Economy: Studies in Ancient Economic and Administrative History.* Oxford: Basil Blackwell.

JÖNSSON, S. and LUNDIN, R. 1976. Problem Solving without a Problem, *FE Rapport 1976:64.* University of Gothenburg.

KATZENSTEIN, P.J. 1985. *Small States in World Markets: Industrial Policy in Europe,* Ithaca. New York: Cornell University Press.

KERZNER, H. 1998. *Project Management – A Systems Approach to Planning, Scheduling and Controlling,* 6th ed. New York: John Wiley & Sons.

KERZNER, H. 2006. *Project Management Case Studies, Second Edition.* John Wiley & Sons, New Jersey: Hoboken.

KOCH, C. and BUSER, M. 2006. Emerging metagovernance as an institutional framework for public private partnership networks in Denmark, *International Journal of Project Management,* Vol 24, pp 548 – 556.

KREINER, K. 1992. The postmodern epoch of organization theory, *International Studies of Management and Organization,* Vol. 22, No. 2, pp. 37-52.

King Committee on Corporate Governance. 1994. *King Report on Corporate Governance for South Africa 1994* [King Report 1994], Institute Of Directors, Johannesburg, South Africa.

King Committee on Corporate Governance. 2002. *King Report on Corporate Governance for South Africa - 2002* [King Report 2002], Institute Of Directors, Johannesburg, South Africa.

KLIEM, R.L., LUDIN, I.S. and ROBERTS, K.L. 1997. *Project Management Methodology.* New York: Marcel Dekker Inc.

KLOPPENBERG, T.J. and OPFER, W.A. 2000. Forty years of project management research: trends, interpretations and predictions, *Proceedings of PMI Research Conference 2000 "Project Management Research at the Turn of the Millennium",* pp.41-60, Project Management Institute, Newton Square, PA.

KOSKELA, L. and HOWELL, G. 2002. The underlying theory of project management in obsolete*, Proceedings of PMI Research Conference,* Seattle, USA.

KPMG. 2003. *Toolkit for the Company Director,* 2nd Edition.

LAFFONT, J.J. and TIROLE, J. 1993. *A Theory of Incentives in Procurement and Regulation.* Cambridge: MIT Press.

LAZONICK, W. 1992. Business Organisation and Competitive Advantage: Capitalist Transformations in the Twentieth Century, from Dosi, G., Giannetti, R. & Toninelli, P.A., eds., *Technology and Enterprise in a Historical Perspective,* pp 119-163. Oxford: Clarendon.

LEEDY, P.D. and ORMROD, J.E. 2001. *Practical Research – Planning and design,* 7th ed. Upper Saddle River: Merril Prentice Hall.

LEGACE, J. 2006. Project success builds on a well-defined scope, *Chemical Engineering.*

LETZA, S., SUN, X. and KIRKBRIDE, J. 2004. Shareholding versus Stakeholding: a critical review of corporate governance, *Corporate Governance,* Vol.12, No. 3, pp. 242-262.

LHWP. 2005. http://www.lhwp.org.ls/overview/overview.htm. Accessed on 27 July 2007.

LINDEMAN, C.A. 1975. Delphi survey of priorities in clinical nursing research, *Nursing Research, V*ol. 24, No. 6, pp. 434-42, from MULLEN, P., 2003, Delphi: Myths and Reality, *Journal of Health Organisation and Management*, Vol.17, No.1, pp. 37-52.

LIENTZ, B.P. and REA, K.P. 2001. *Breakthrough Technology Project Management,* 2nd ed. San Diego: Academic Press.

LINSTONE, H.A. 1978. The Delphi technique, in Fowles, R.B., (Ed.), *Handbook of Futures Research,* pp. 271-300. Greenwood, Westport, CT.

LINSTONE, H.A. 2002. VIII. Eight basic pitfalls: A checklist, from Linstone, H.A. and Turoff, M. (Eds), *The Delphi Method: Techniques and Applications.* http://is.njit.edu/pubs/delphibook/. Accessed on 27 July 2007

LINSTONE, H.A. and TUROFF, M. 2002. I - Introduction to the Delphi method: techniques and applications, from Linstone, H.A., & Turoff, M. (Eds), *The Delphi Method: Techniques and Applications.* http://is.njit.edu/pubs/delphibook/. Accessed on 26 July 2007

LIU, L. and YETTON, P. 1995. The contingent effects of project governance mechanisms on project delivery capability and the level of control – evidence from the construction and IT service industries, *Proceedings of the Pan-Pacific Business Conference XXII,* Shanghai, China.

LOO, R. 2002. The Delphi method: a powerful tool for strategic management, *Policing: An International Journal of Police Strategies and Management,* Vol. 25, No. 4, pp. 762-769.

LUNDIN, R.A. and SÖDERHOLM, A. 1995. A theory of the temporary organization, *Scandinavian Journal of Management,* Vol.11, No. 4, pp. 437-455.

MAF Information Bureau. 2007. http://www.maf.govt.nz. Accessed on 24 October 2007

Major Projects Association. 1994. Beyond 2000: A Source Book for Major Projects. Oxford: Templeton College.

MALLIN, C.A. 2005. *Handbook of International Corporate Governance – Country Analysis.* Edward Elgar, Cheltenham, UK.

MANICKAS, P. And SHEA, L. 1997. Hotel complaint behaviour and resolution: A content analysis, *Journal of Travel Research,* Vol. 36, No. 2, pp.68-73

MARCH, J.G. 1981. Footnotes to organizational change, *Administrative Science Quarterly,* Vol. 26, pp. 563-577.

MARKANDYA, A. and SHARMA, R.Y. 2004. Case Study on Tajikistan Pamir Private Power Project, *Conference on Scaling Up Poverty Reduction,* Shanghai, China, March 25-27, 2004.

McCLEARN, M. 2004. Shady Acres, *Canadian Business*, Issue: August 16/2004.

McGREGOR, L. 2000. *The Human Face of Corporate Governance*, Basingstoke: Palgrave.

McKEE, M., PRIEST, P., GINZLER, M. and BLACK, N. 1991. How representative are members of expert panels? *Quality Assurance in Health Care,* Vol. 3, pp. 89-94.

MELGRATI, A. and DAMIANI, M. 2002. Rethinking the project management framework: New epistemology, new insights*, Proceedings of PMI Research Conference,* Seattle, USA.

MERROW, E., McDONNELL, L. and ARGÜDEN, R. March 1988. *Understanding the outcomes of megaprojects: A quantitative analysis of very large civilian projects,* The Rand Corporation Publication Series #R-3560-PSSP.

MEYER, J.W. and ROWAN, B. 1977. Institutionalised Organisations: Formal Structure as Myth and Ceremony, *American Journal of Sociology,* Vol.83, pp 340-363.

MEYER, J.W. and SCOTT, W.R. 1992. *Organizational Environments: Ritual and Rationality.* New Park, CA: Sage.

MICKLETHWAIT, J. and WOOLDRIDGE, A. 2003. *The Company: A Short History of a Revolutionary Idea.* London, UK: Weidenfeld & Nicholson.

MILES, M.B. 1964. On temporary systems, *Innovation in Education,* pp 437-490.

MILLER, R. and FLORICEL, S. 2000. Transformations in Arrangements for Shaping and Delivering Engineering Projects*,* from MILLER, R., and LESSARD, D., eds., 2000, *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks, and Governance.* Massachusetts: Massachusetts Institute of Technology.

MILLER, R. and HOBBS, B. 2005. Governance regimes for large complex projects, *Project Management Journal,* Vol 36, No 3, pp 42 – 50.

MILLER, R. and LESSARD, D., eds. 2000. *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks and Governance.* Massachusetts: Massachusetts Institute of Technology.

MINTZ, J.M. and PRESTON, R.S. 1994. *Infrastructure and Competitiveness.* Kingston, Ontario: John Deutsch Institute.

MITCHELL, J.C. 1983. Case and situational analysis, *The Sociological Review,* 31 (2), 187 – 211.

MONKS, R.A.G. and MINOW, N. 1995. *Corporate Governance.* 2nd Edition. Oxford: Blackwell Publishers Incorporated.

MOORE, K. and LEWIS, D. 2001. *Foundations of Corporate Empire,* London: Financial Times / Prentice Hall.

MORGAN, G. 1997. *Images of Organisation,* 2nd Edition. California: Sage.

MORRIS, P.W.G. 1994. *The Management of Projects.* London: Thomas Telford Publishing.

MORRIS, P.W.G. 2004. Moving from Corporate Strategy to Project Strategy: Leadership in Project Management, *PMI Research Conference 2004,* United Kingdom: London.

MORRIS, P.W.G. and HOUGH, G.H. 1987. *The Anatomy of Major Projects: A study of the reality of project management.* Chichester, England: John Wiley & Sons, Inc.

Mozal Aluminium Smelter. 2001. *Spectrum: SNC-Lavalin, http://www.snc-lavalin.com/en/2_0/pdf/mozal-eng.pdf.* Accessed on 3 April 2007

Mozal - An Overview. 2005. http://www.mozal.com/, site accessed 03 April 2007

MULLEN, P. 2003. Delphi: Myths and Reality, *Journal of Health Organisation and Management*, Vol.17, No.1, pp. 37-52.

National Association of Corporate Directors (NACD) Commission, 2002, from KPMG, Toolkit for the Company Director, 2nd Edition.

NAIDOO, R. 2002. *Corporate Governance: An Essential Guide for South African Companies.* Cape Town: Double Storey Books.

NAIRU, Z. 1990. Project Management and Project Manager in China, *Proceedings of the 14th International Expert Seminar*, Zurich.

NICHOLAS, J.M. 2001. *Project Management for Business and Technology,* 2nd ed. New Jersey: Prentice Hall.

Noord Natie Venstpils Terminals. 2007. Company information on website,http://www.nnvt.lv/. Accessed 29 July 2007.

NORTH, D.C. 1990. *Institutions, Institutional Change, and Economic Performance.* Cambridge: Cambridge University Press.

OECD, Principles of Corporate Governance - 2004 Edition. OECD Publication Services, France.

Office of Government Commerce (OGC). 2005. *Successful Delivery Toolkit^{TM},* www.ogc.gov.uk. Accessed on 21 August 2006.

ORIGO, I. 1992. *The Merchant of Prato: Daily Life in a Medieval Italian City.* London: Penguin.

PAGE, C. and MEYER, D. 2005. *Applied research design for business and management.* Australia, McGraw-Hill.

Penguin Reference Books. 1985. *The Penguin English Dictionary*, Harmondsworth: Penguin Books.

PHILLIPS, R. 2000. New applications for the Delphi technique, *Annual "San Diego" Pfeiffer and Company*, Vol.2, pp. 191-196, from MULLEN, P., 2003, Delphi: Myths and Reality, *Journal of Health Organisation and Management*, Vol.17, No.1, pp. 37-52.

PILL, J. 1971. The Delphi method: substance, context, a critique and an annotated bibliography, *Socio-economic Planning Science, V*ol.5, No.1, pp. 57-71.

PINTO, J.K. 2006, Principles of Governance for Major Investment Projects, *Concept Symposium,* Trondheim, Norway, www.prestasjondelese.net/concept06/presentations/pinto.pdf, accessed 14 July 2008.

PINTO, J.K. and MANTEL, S.J. The Causes of Project Failure*, IEEE Transactions on Engineering Management*, November 1990, Vol.37, No. 4, pp 269-276.

PINTO, J.K. and SLEVIN, D.P., 1988, Critical Success Factors Across the Project Life Cycle, *Project Management Journal*, Vol. 19, No. 1, pp. 67-72.

Power Engineering. 1990. Turnkey Contracts: Pitfalls and the Benefits, January, pp 31 – 34.

PRINCE 2, Office of Government Commerce. 2003. *Managing Successful Projects with PRINCE 2.* 5th Impression. London: TSO.

Project Management Institute. 2000. A Guide to the Project Management Body of Knowledge (PMBOK® Guide), 2000 ed. Project Management Institute, Inc, Maryland.

Protocol VI. 1999. *Protocol VI to the Treaty on the Lesotho Highlands Water Project - supplementary arrangements regarding the system of governance for the project.*

RAJU, R. 2007. Personal interview on 19 April 2007, Anglo Platinum Offices, Johannesburg, South Africa.

REISS, G., ANTHONY, M., CHAPMAN, J., LEIGH, G., PYNE, A. and RAYNER, P. 2006. *Gower Handbook of Programme Management.* Gower Publishing, Hampshire: England.

RENZ, P.S. 2007. *Project Governance – Implementing Corporate Governance and Business Ethics in Nonprofit Organizations.* Physica-Verlag, Heidelberg: New York.

ROSS, J.F.L. 1994. High-Speed Rail: Catalyst for European Integration?, *Journal of Common Market Studies*, June 1994, Vol. 21, No. 2, pp 1991-214.

ROSS, J.F.L. 1998 *Linking Europe: Transport Policies and Politics in the European Union.* Westport, CT: Praeger Publishers.

ROZENES, S., VITNER, G. and SPRAGGETT, S. 2006. Project Control: Literature Review, *Project Management Journal,* Vol. 37, No. 4, pp 5-14.

RWELAMILA, P.D., TALUKHABA, A.A. and NGOWI, B. 1999, Tracing the African Project Failure Syndrome: the significance of 'ubuntu'*, Engineering, Construction and Architectural Management*, 1999, Vol 6, No. 4, pp 335-346.

RYDER, G. 2007. *Auditors expose flaws in Three Gorges project management,* Probe International, 06 July 2007. C:\DATA GIEL 2007\PM Research\Case studies\Probe International PM audit.htm. Accessed on 30 July 2007.

SACKMAN, H. 1975. Summary evaluation of Delphi, *Policy Analysis*, Vol.1, No. 4, pp. 693-718.

SAICA (South African Institute of Chartered Accountants). 2002. *SAICA Handbook, Auditing, Volume 2,* Kengray.

SALISBURY, S. 1967. *The State, the Investor and the Railroad.* Cambridge: Harvard University Press.

SAMPSON, A. 1995. *Company Man: The Rise and Fall of Corporate Life.* New York: Times Business.

SCHEELE, D.S. 2002. II.C. Reality construction as a product of Delphi Interaction, from Linstone, H.A. & Turoff, M. (Eds) *The Delphi Method: Techniques and Applications.* http://is.njit.edu/pubs/delphibook/. Accessed on 5 April 2007

SCHOLL, W., KöNIG, C., MEYER, B. and HEISIG, P. 2004. The future of knowledge management: an international study, *Journal of Knowledge Management,* Vol.8, No.2, pp 19-35.

SCOTT, W.R. 1994. *Institutions and Organisations: Towards a Theoretical Synthesis,* in Scott, W.R.. and Meyer, J., eds. Institutional Environments and Organisations, pp 55-80. Thousand Oaks, Sage.

SEIB, G. and HARWOOD, J. 2002. "Rising Anxiety: What Could Bring 1930s-Style Reform of U.S. Businesses. *Wall Street Journal,* July 25, 2002.

SHANI, A.B. and LAU, J.B. 1996. *Behaviour in organisations – an experimental approach,* 6th ed. Irwin, London.

SHEN,L., PLATTEN, A. and DENG, X.P. 2006. Role of public private partnerships to manage risks in public sector projects in Hong Kong, *International Journal of Project Management*, 2006, Vol.24, pp 587-594.

SHENHAR, A.J., LEVY, O. and DVIR, D. 1997. Mapping the Dimensions of Project Success, *Project Management Journal*, 1997, Vol.28 No.2, pp 5-13.

SHERIDAN, T. and KENDALL, N. 1992. *Corporate Governance: An Active Plan for Profitability and Business Success.* Pitman Publishing: London

SKAMRIS, M.K. 1994. *Large Transport Projects: Forecast Versus Actual Traffic and Costs,* Report no.151. Aalborg: Department of Development and Planning, Aalborg University.

SMERDON, R. 1998. *A practical guide to corporate governance.* Sweet & Maxwell, London.

SMITH, A.L. 2006. The Governance Model: The Private-Public Partnership Embodiment, Management Analysis. http://www.crgp.stanford.edu/events/presentations/gcr2/Smith.ppt. Accessed on 28 August 2006

South Africa, 2001: Cliffe Dekker:- King Report on Corporate Governance for South Africa 2002: Introduction, pp1-2, http://www.cliffedekker.co.za/literature/corpgov/index.htm. Accessed on 5 July 2005

STOVER, J.F. 1997. *American Railroads,* Second Edition, Chicago: University of Chicago Press, from MILLER, R. & LESSARD, D., eds. 2000. *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks, and Governance.* Massachusetts: Massachusetts Institute of Technology.

Summary Case Study Library – PMI. 2007. http://www.pmi.org/WhoWeAre/Pages/case-study-library.aspx,. Accessed on 31 July 2007.

SWANSON, E.R. and RAMILLER, N.C. 1997. The Organising Vision in Information Systems Innovation, *Organization Science,* Vol. 8, No. 5, pp 458 – 474.

The Standish Group. 1995. The Standish Group Report: T23E – T10E, http://www.scs.carlton.ca/~beau/PM/Standish-Report.html. Accessed on 28 August 2006

The Standish Group. 2003. Press Release – Latest Standish Group CHAOS Report Shows Project Success Rates Have Improved by 50%. March 25, 2003. http://www.standishgroup.com/press/article.pho?id=2. Accessed on 28 August 2006.

The United States of America. *The Sarbanes Oxley Act of 2002*. Government Printer.

The World Bank Group. 2007. *Bringing Power to the Poor in the Pamirs - Tajikistan Pamir Private Power Project,* http://lnweb18.worldbank.org/eca/eca.nsf/General/66201C6DC20F591 785256C32006D471A?OpenDocument Accessed on 26 July 2007.

THOMPSON JR, A.A. and STRICKLAND III, A.J. 1996. *Strategic management – concepts and cases*. 9th ed. Irwin: McGraw-Hill.

TILLY, C. 1984. *Big Structures, Large Processes, Huge Comparisons*. New York: Russell Sage Foundation.

Treaty on The Lesotho Highlands Water Project between The Government of the Republic of South Africa and The Government of the Kingdom of Lesotho. 1986.

TURBIN, N. 2003. *IT Governance and Project Governance,* The Project Perfect White Paper Collection. www.projectperfect.com.au. Accessed on 24 August 2006.

TURNBULL, S. 1997. Corporate Governance: Its Scope, Concerns and Theories, *Corporate Governance,* Vol.5, pp180-205.

TUROFF, M. 1970. The design of a policy Delphi, *Technological Forecasting and Social Change,* Vol. 2, No. 2, pp. 149-71.

United Nations, Economic and Social Council. 2005. Governance in Public Private Partnerships for Infrastructure Development. TRADE/WP.5/2005/2.

WEISS, J.W. and WYSOCKI, R.K. 1992. *5-Phase Project Management.* New York: Perseus Books Publishing.

Wikipedia. 2007. Case study research. http://en.wikipedia.org/wiki/Case_study. Accessed 2 May 2007.

Wikipedia. 2007. Three Gorges dam. http://en.wikipedia.org/wiki/Three_Gorges_Dam. Accessed on 30 July 2007.

WILD, C. and TORGERSEN, H. 2000. Foresight in medicine: lessons from three European Delphi studies, *European Journal of Public Health,* Vol. 10, No. 2, pp. 114-9.

YEO, K.T. 1995, Planning and learning in major infrastructure development: systems perspectives, *International Journal of Project Management,* Vol. 13, No. 5, pp. 287-293.

YERGIN, D. and STANISLAW, J. 1998. *The Commanding Heights: The Battle Between Government and the Marketplace that is Remaking the Modern World.* New York: Simon & Shuster.

ZHUWAKINYU, M. 2003. *Corruption busting: Lesotho in brave fight against graft.* Engineering News, Issue: 27 January 2003.

ZHUWAKINYU, M. 2004. *Lesotho case shows that the corruptor is as guilty as the corrupted.* Engineering News, Issue: 30 July 2004.

ZILLMAN, D.N., LUCAS, A.R. and PRING, G. 2002. *Human Rights in Natural Resource Development – Public Participation in the Sustainable Development of Mining and Energy Resources.* Oxford University Press; New York.

YIN, R.K. 2003. *Case Study Research; Design and Methods.* London: Sage Publications.