Chapter 4: Research Design

The literature review revealed that the principles of project performance, corporate governance, LCPs and institutional developments are fairly well documented. Many research studies into project performance have been done, while research in the field of corporate governance is currently more related theory building and qualitative analysis. The current state of corporate governance allows for some structure and a basic framework from which the different regional models are derived. The models are mostly presented as guidelines and laws influencing different countries' specific economic and social emphasis. These models can serve as a basis from which to develop a project governance framework.

Few studies exist with respect to the management of LCPs, while the fundamental understanding of the functioning, dynamics and characteristics of major projects still need thorough investigation, research and active debate. However, with respect to this study, it is believed that the contextual frameworks exist in terms of corporate governance models, entrepreneurial, rational and governance systems that will lead to the development of a questionnaire that will stimulate discussion among seasoned project sponsors, project managers, academics and other major stakeholders with regard to the establishment of a project governance framework. However, it was clear from the outset that the research in itself would be an exploratory process with the review and confirmation of the research approach to be reviewed, discussed and adjusted as the results unfold.

4.1 Developing the research strategy

The uncertainty and immaturity of the concept of project governance became evident through the literature review and various informal discussions with academics and project practitioners. Although *project governance* is a popular term in modern project management language, it was not clear whether the

users of the term commonly refer to project control, steering committee functions, project management in its entirety or to liability clauses in contracts.

Given these fundamental differences in approach and a low level of mutual understanding of the concept of project governance, the research method and approach lends itself ideally to an exploratory study as well as the accumulation and categorisation of expert opinions. This resulted in the investigation of the Delphi technique as the research approach and strategy to define project governance. The results of the second round of the Delphi survey would determine what route to take towards a project governance framework (Figure 4.1 - Research Strategy). Options included a third round of the Delphi survey, the structuring and development of a concept model for testing against a large sample of respondents (quantitative) or various case studies.

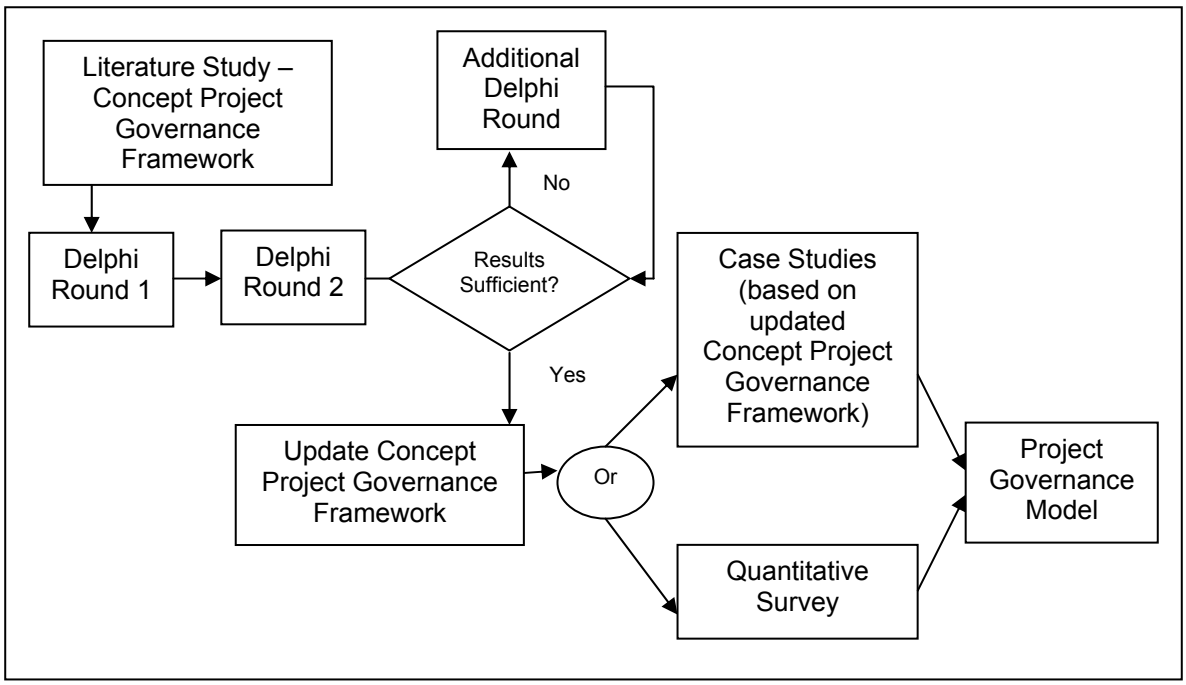

Figure 4.1: Research strategy

A critical decision had to be made after the Delphi studies. The decision centred around the verification part of the study via case studies or quantitative surveys. The results from the Delphi study would determine the possible option. If it was found that the input from experts during the Delphi

were sufficient to compile a fairly robust Concept Project Governance Framework, the testing of the framework would proceed towards case studies. However, if it seemed that the refinement of the Concept Project Governance Framework could be improved via a survey with input from general project workers and academia, then this quantitative route would be followed.

The Delphi technique is a qualitative research method and therefore criticised by many a seasonal researcher as not being empirically verifiable. In order to better understand the Delphi technique as research method, and its applicability to this research, a fairly extensive literature review was done on the technique. The objectives of the literature review were to:

- Obtain a better understanding of the Delphi technique as a research method,
- Obtain insight into the advantages and criticism of the Delphi technique, and
- Map the research process for this study.

The following paragraphs provide an overview of the literature findings and explain the rational behind the research approach.

4.2 The Delphi technique

4.2.1 Background

The aim of this research is to develop a common, accepted project governance framework that could be used as a management guideline and decision-making framework for the development, implementation and eventual operation of LCPs. The framework should guide decision-making and provide an environment within which the project manager can manage all the activities towards the overall improvement of project performance.

From the outset it was clear that the development of a project governance framework is barely in the definition stage and would require extensive consultation and discussion in order to progress towards model development.

Some form of decision-making technique, which facilitated the involvement and communication of multiple, knowledgeable participants had to be mobilised in order to define and develop the eventual structure of the project governance framework. The technique also had to allow for the participation of geographically dispersed respondents and clustering of expert opinions. These constraints led to the consideration of using the Delphi technique, especially for the initial part of the research questioning.

The Delphi technique is part of the family of group decision-making techniques that includes the nominal group technique (NGT) and interacting group method (IGM). The Delphi technique differs in various ways from NGT and IGM, but principally in fact that Delphi is individual based, anonymous and independent. The element of group interaction is eliminated and feedback to questionnaires can be in written format (Loo, 2002:763). The most significant differences among the three main group decision-making methods are explained by Delbecq, Van de Ven and Gustafson (1975:32) and tabulated below in Table 4.1.

According to Loo (2002), organisations should consider the Delphi technique when they investigate decision-making strategies that will set the future direction for organisations. As it is believed that the formulation of a project governance framework belongs firmly in this category of guiding the future direction of organisations, the Delphi technique seems appropriate as a research technique to build on the initial framework that has been developed by studying the available literature and logical reasoning.

Olaf Helmer and Norman Dalkey, of the Rand Corporation, created the Delphi technique in the 1950s (Buckley, 1995:16; Helmer-Hirshberg, 1967). The technique attempts to make effective use of informed intuitive judgment in long-range forecasting. In its simplest form, the Delphi method solicits the opinions of experts through a series of carefully designed questionnaires interspersed with information and opinion feedback.

Table 4.1: Comparison of qualitative differences among IGM, NGT and Delphi

Dimension	IGM	NGT	Delphi
Overall methodology	**Unstructured meeting.** High variability between decision-making groups.	Structured meeting. Low variability between decision-making groups.	Structured series of questionnaires and feedback reports. Low variability between decision panels.
Role orientation of groups	Social-emotional focus.	Balanced social-emotional and task-instrumental.	Task-instrumental.
Relative quantity of ideas	Low, focused 'rut' effect	High, independent thinking.	High, isolated thinking.
Relative quality and specificity of ideas	Low quality. Generalisations.	High quality. High specificity.	High quality. High specificity.
Normative behaviour	Inherent conformity pressures.	Tolerance for non-conformity.	Freedom not to conform.
Search behaviour	Reactive. Short problem focus. Task-avoidance tendency. New social knowledge.	Proactive. Extended problem focus. High task-centeredness. New social and task knowledge.	Proactive. Controlled problem focus. High task-centeredness. New task knowledge.
Equality of participation	Member dominance.	Member equality,	Respondent equality in pooling of independent judgements.
Methods of conflict resolution	Person-centred. Smoothing over and withdrawal.	Problem-centred. Confrontation and problem solving.	Problem-centred. Majority rule of pooled independent judgements.
Closure to decision process	Lack of closure. Low felt accomplishment.	High closure. High felt accomplishment.	High closure. Medium felt accomplishment.
Task motivation	Medium.	High.	Medium.

Source: Delbecq *et al.* (1975)

According to Greek mythology, the oracle at Delphi was consulted to forecast the future so that correct and timely decisions could be made before embarking upon a major course of action, such as waging war. The approach taken by the research team was that subject-matter experts could be solicited

for their opinions or expectations about the likelihood of future events or scenarios.

Various definitions of the Delphi technique can be found in literature. According to Mullen (2004), Linstone and Turoff define the Delphi technique as follows:

Delphi may be characterised as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem.

Sackman (1975), in a critique of the Delphi, summarises the technique as follows:

Conventional Delphi generally refers to the iterative polling of experts or non-experts, who remain anonymous and do not directly communicate with each other, accompanied by statistical feedback for each item in successive rounds, with or without verbal commentary.

Loo (2002) describes the Delphi as:

A method that structures and facilitates group communication that focuses upon a complex problem so that, over a series of iterations, group consensus can be achieved about some future direction.

According to Delbecq *et al.* (1975), the Delphi technique is a *survey technique for decision-making among isolated anonymous respondents*.

Delbecq *et al*. (1975) further elaborated on the functioning of the technique, describing the characteristics as:

- The isolated generation of ideas, in writing, that produces a high quantity of ideas.
- The process of writing responses to the questions forces respondents to think through the complexity of the problem, and to submit specific, high-quality ideas.
- Search behaviour is proactive since respondents cannot react to the ideas of others.

- The anonymity and isolation of respondents provides freedom from conformity pressure.
- Simple pooling of independent ideas and judgements facilitates equality of participants.
- The Delphi technique tends to conclude with a moderate perceived sense of closure and accomplishment.
- The technique is valuable for obtaining judgments from experts who are geographically isolated.

Since this study might be the initiation of further study and aims to attract a wide spectrum of inputs from various geographically dispersed individuals, the Delphi technique may be well suited as a research approach and method.

4.2.2 Criticism of the Delphi

The Delphi as a research technique has had its fair amount of criticism, support and debate on epistemology (Mullen, 2003). The major criticism is Delphi's alleged failure to follow accepted scientific procedures, in particular the lack of psychometric validity (Sackman, 1975). However, those defending Delphi argue that it deals with areas that do not lend themselves to traditional scientific approaches. Helmer (1977:18-19) argued that the futures analysis, one of the major applications of Delphi, "is inevitably conducted in a domain of what might be called 'soft data' and 'soft laws'". He further argued that standard operations research techniques should be augmented by judgemental information and that the Delphi technique cannot be legitimately attacked for using mere opinions and for violating the rules of random sampling in the 'polling of experts'. Such criticisms, he argued, "rest on a gross misunderstanding of what Delphi is … it should be pointed out that a Delphi inquiry is not an opinion poll". As the various definitions illustrate, in no instance is reaching a majority opinion the ultimate goal in a Delphi: it is rather the reaching of agreement. According to a quote from the Cary Salmon Report in Buckley (1995) "Delphi is a tool for discovering agreement and identifying differences rather than forcing consensus". Buckley (1995) further states: "In principle, agreement alone is not a sufficient condition for arguing

that something is plausible. However, as with the majority of research tools, the method of use and application has a huge impact on the eventual success. It is believed that where no agreement develops the Delphi still helps to clarify the issue", with Linstone and Turoff (2002) adding that one of the common reasons for failure in a Delphi is ignoring and not exploring disagreements.

Ultimately, Coates (1975) responds to the primary criticism against the Delphi method not being scientific by stating: "If one believes that the Delphi technique is of value not in the search for public knowledge, but in the search for public wisdom; not in the search for individual data but in the search for deliberative judgment, one can only conclude that Sackman missed the point."

Thus, group communication forms the centre of the Delphi technique and provides a platform to facilitate input from, and discussions among, knowledgeable, experienced and expert individuals.

4.2.3 Epistemological approach towards the Delphi design

The differences between the various group techniques, the definitions of the Delphi method as compiled by theorists and academics, and cognisance of the various criticisms forms the epistemological basis for defining the approach towards a Delphi design. As explained by Scheele (2002), the concreteness of the context of the Delphi design is paramount in reaching the overall objective of the study. The basic premises of the research design towards the formulation of a project governance framework for LCPs is embedded in some form of general agreement and consensus regarding the core ingredients and components of the eventual framework. Given the current status of, or lack-of, a generally agreed project governance framework, the search for consensus and a point of departure is therefore justified. In consideration of the critique voiced principally by Sackman (1975), the use of the Delphi method is justified and builds on the reasoning of Dalkey and Helmer (1963:458): "Its [Delphi's] objective is to obtain the most reliable

consensus of opinion of a group of experts". As referred to in Mullen (2003), further support for the reaching of consensus through the Delphi method if given by Lindeman (1975:435), who states that, "The Delphi technique … involves the use of a series of questionnaires designed to produce group consensus". More recently, Philips (2000:192) suggested: "The Delphi technique is a method for obtaining consensus of informed opinion by soliciting the views of experts in the specific field being studied".

The use of experts has a profound impact on the Delphi design. Potential speculation of "what question lies behind a question", or "what prompted a specific response" could have a profound impact on the eventual outcome. According to Critcher and Galdstone (1998:432), the Delphi design should "… allow for a potential outcome which may include the degree of consensus or dissensus, specifying the range of different positions, and revealing the rationales which lie behind the judgments".

It can be concluded that whether or not a consensus should even be sought lies in the purpose of the Delphi. With positive questions, the aim is to find the correct answer, whether it is an outlier or not, rather than a unanimously agreed wrong answer. Hence the importance of exploring disagreements as the outlier might be correct. However, when the aim is to obtain normative views, as in this research study, seeking consensus might well be appropriate.

4.2.4 Main components of the Delphi technique

According to Loo (2002), the Delphi technique consists of five major characteristics:

- The sample consists of a panel of carefully selected experts representing a broad spectrum of opinion on the topic or issue being examined.
- Participants are usually anonymous.
- The 'moderator' (i.e. researcher) constructs a serious of structured questionnaires and feedback reports for the panel over the course of the Delphi.

- It is an iterative process often involving three to four iterations or 'rounds' of questionnaires and feedback reports.
- There is an output, typically in form of a research report containing the Delphi results, the forecasts, policy and program options (with their strengths and weaknesses), recommendations to senior management and, possibly, an action plan for developing and implementing the policies and programs.

Given the exploratory nature of this research, it is further believed that the Delphi technique is well suited to obtaining credible inputs from experts in industry and academia to serve as key input towards the development of a project governance framework. The following paragraphs provide more detail regarding the practical design and execution of the Delphi study for this dissertation.

4.3 Designing, constructing and executing the Delphi study

Given the rationale behind the Delphi technique and the key characteristics explained, the design, construction and execution of the Delphi study followed a sequential process - as with all other research methods.

Loo (2002) refers to four key planning and execution activities, namely:

- problem definition
- panel selection
- determining the panel size, and
- conducting the Delphi rounds.

In support of Loo's approach, Delbecq *et al.* (1975) applies a basic Delphi methodology that includes distinct stages, such as Delphi question development, respondent selection, sample size, first questionnaire, first questionnaire analysis and follow-up questionnaires. This methodology forms the basis of this research study and is explained in the following paragraphs

4.3.1 Stage 1 – Develop the Delphi question

The formulation of the Delphi question is a key to the overall process. It is paramount that respondents understand the broad context within which the questionnaire is designed, especially with this dissertation where the concept of project governance has different meanings for different people and the difference between project control and project governance needs to be clarified upfront. For the study to be successful, some key questions need to be addressed. The basis of constructing the questions is based on the guidelines given in Table 4.2 below, with corresponding wording and phrasing given for this study.

Table 4.2: Delphi question formulation

Key Delphi question?	**Phrasing for this study**
Why are you interested in this study?	This study was initiated because of the belief that many LCP failures are not due to the poor application of project management tools and techniques, but rather the poor definition, or lack of a proper definition and applied project governance framework.
What do you need to know that you don't know now?	Currently it is not clear what a project governance framework should be based on or should contain. At the end of this study it should be clear what the definition of project governance should be and, secondly, what the components of a project governance framework should be.
How will the results from the Delphi influence decision-making once the study has been completed?	The result of the Delphi study should be a project governance framework for LCPs that will direct and assist decision-making throughout the life-cycle of the project.

4.3.2 Stage 2 – Selection of respondents

When using group-decision techniques, the selection of respondents, or 'expert panel', can create a huge debate.

Sackman (1975:695-704) criticises the use of experts by pertinently asking "What is an 'expert' in the target field?" and, "How are such experts operationally defined?" He argues: "It is almost impossible to find current psychometric or social science literature on 'experts'".

In contrast to the purist approach by Sackman, some alternative schools of thought are also evident in the Delphi research environment. Pill (1971) suggested that an 'expert' should be defined as anyone with a relevant input. Mullen (2003) refers to some studies by Ishikawa, Amagasa, Shiga, Tomizawa, Tatsuta and Mieno (1993), who ask 'experts' to self-rate their expertise in the area concerned on a scale of 0 to 10. Usually the rate should be an indication of their knowledge of each area as being derived from 'awareness', 'reading' or 'working' or evaluating their familiarity with each item as fair, good or excellent. However, the efficacy of such self-rating is disputable and could only add another dimension to Delphi critique.

What is very clear is the fact that randomly selected representative samples are inappropriate when expert opinions are required. Goodman (1987:730) supports this approach by stating that the Delphi "tends not to advocate a random sample of panellists … instead the use of experts or at least of informed advocates is recommended". Helmer (1977:18-19), also referred to by Mullen (2003), argued that "it should be pointed out that a Delphi inquiry is not an opinion poll, relying on drawing a random sample from 'the population of experts'; rather, once a set of experts has been selected (regardless of how), it provides a communication device for them that uses the conductor of the exercise as a filter in order to preserve anonymity of responses". Eventually Linstone (2002) pertinently states that the most significant danger in selecting the 'expert panel' lies in the path of 'least resistance' through the selection of a group of cosy friends and / or like-minded individuals.

With this study, the research topic is demarcated as LCPs but includes a fair portion of heterogeneity through the inclusion of various industry sectors, for example mining, infrastructure, petrochemical, oil and gas, building and academia.

From the literature review and the directives of Delbecq *et al.* (1975), it is clear that the participants of the Delphi study should be knowledgeable in the field of study, have pertinent information to share, are motivated to include the Delphi task in their schedule of competing tasks and feel that the aggregation of judgements of a respondent panel will include information which they too value and to which they would not otherwise have access.

In the light of the above directives, the respondents chosen for the study were selected based on:

- Personal, direct knowledge and acquaintance,
- Indirect knowledge through specific reference,
- Discussion and familiarisation at international conferences, and
- Prominent practitioners whose projects appear in the general media.

A complete contact list of all potential participants was obtained. Before the first questionnaire was distributed, each potential participant was contacted and given an explanation of what the study comprised.

4.3.3 Stage 3 – Selection of sample size

The very nature of the Delphi technique calls for a qualitative, rather than a quantitative approach. The use of experts for input already indicates that the number of participants should be expected to be much lower than normal quantitative surveys. The question is: How many experts should participate?

From the available literature very little indication was found regarding the minimum number of participants required to take part in the Delphi study. Linstone (1978:296) finds that “a suitable minimum panel size is seven” and clearly states that the researcher runs the risk of accuracy deteriorating rapidly as numbers increase.

Linstone’s observation is supported by Cavalli-Sforza and Ortolano (1984:325), who state that a “typical Delphi panel has about 8 to 12

members", while Phillips (2000:193) believes that the optimum is between seven and twelve members.

Determining the size of the respondent panel has always been a contentious issue. However, considering the arguments that the Delphi should not be viewed as an opinion poll, as well as the broad view expressed by authors in this field, it seems that panel sizes ranging from 7 to 20 might be appropriate, at least for the first round of a questionnaire.

With a Delphi study, the selection of an initial respondent panel size is variable. From the literature review it was concluded that the size varies between 7 and 20. For this study it was decided to identify 30 individuals on the following basis:

- A fair and practical split between academics and practitioners. The two categories may provide input for various perspectives and balance the theoretical and practical considerations.
- The respondents in both categories should have extensive experience in LCPs. For practitioners, the guideline criterion is 20 years' experience in LCPs, whilst the profiling of academics will require information on number of articles published and books authored and co-authored.

The intention was that the second round would be distributed to those respondents who completed the first round of questionnaires.

4.3.4 Stage 4 – First questionnaire

Due to the mere fact that the Delphi technique is designed to obtain input regarding a topic, the questions are kept to a minimum and are open-ended (Scholl, König, Meyer and Heisig, 2004). The work by Scholl *et al.* is very similar to the approach taken in this study in that 45 experts responded to six very open-ended questions. A second round was conducted, with 25 experts responding. The numbers are too low to derive representative statistics, which is also not the objective of the study.

Based on the approach of Scholl *et al.* (2004), the first questionnaire of this research asks individuals to respond to broad questions. Respondents were expected to respond on-line, with the answers captured in a categorised table. The questionnaire was designed to:

- Allow adequate time for thinking and reflection (2 weeks),
- Avoid undue focusing on a particular idea,
- Avoid competition, status pressure and conformity issues,
- Avoidance of choosing between definitions, concepts and ideas prematurely.

The first questionnaire formed the basis of the research and further questionnaire developments were to evolve from the feedback.

4.3.5 Stage 5 – Analysis of first questionnaire

Analysing the feedback from respondents poses a challenge. In many cases the feedback is elaborate, necessitating careful selection of an analysis technique and the obvious requirement to test the consolidated results for the second round. According to Page and Meyer (2005), the most suitable technique to be used for this type of qualitative research proved to be *informal content analysis*. The technique consists of scanning the content for recurring and repeated themes / concepts / words and constructing a summarised / consolidated description of the feedback. An example of the use of the technique is illustrated by Manickas and Shea (1997) during which customer complaints were recorded and analysed at a large hotel in New York.

According to Glaser and Strauss (1967), potentially important information may be overlooked when questions are directed to very specific factors. It is therefore advised to rather include more information on observations initially and verify with a second round of questioning during which the focus is more on confirmation, rejection or refinement.

For this dissertation the summarised / consolidated feedback was returned to the initial respondents for comment, confirmation or criticism.

The results from the first round of questionnaires formed the basis for the second round of questionnaires.

4.3.6 Stage 6 – Second questionnaire

The second questionnaire incorporated the feedback from the first questionnaire and was compiled in a format for a second round of feedback and response from the respondents who completed the first round of questionnaires. The feedback and confirmation of the second round formed the basis for the rest of the research design, whether a draft model for case study research or a questionnaire for quantitative studies.

4.4 Summary

This research aims to develop a project governance framework for LCPs through a thorough review of the origin and development of corporate governance models, guidelines and laws, as well as the continuing search for structuring LCPs. This chapter addresses the research structure and method, with specific emphasis on the Delphi method.

Due the exploratory nature of this research, the Delphi method seemed to be the most appropriate to build on the framework that had been developed by means of a literature survey. This method would allow the free flow of ideas and thinking towards the formation of a project governance framework, with sufficient room for providing specific and general input to the thinking and contextualisation process.

The following chapter provides a detailed discussion on the actual Delphi research review of the results obtained.

Chapter 5: Research Results and Concept Framework

From the literature review and informal discussions with project practitioners and academia, it became clear that no common understanding exists regarding the definition or meaning of project governance. The main objective of the Delphi study was thus to obtain consensus regarding the term 'project governance', its definition, its relationship with corporate governance and project control as well as the challenges facing the development of a project governance framework.

The following paragraphs explain the Delphi process and the results achieved.

5.1 Delphi – Round 1

The first round of the Delphi study followed the process of formulating key questions, testing the response to questions with an advisory panel, identifying and contacting the potential participants, gathering and analysing the answers and preparing the second round of questions.

5.1.1 Data accumulation

The first round of the Delphi questionnaire was sent to 32 individuals selected from a panel of practitioners and prominent academia from around the globe. The panel represented countries such as Australia, Northern Africa, Southern Africa, USA, UK, South America and other European countries. Each member of the panel received a personalised email with the questionnaire attached (Appendix A). In most cases the members were contacted telephonically, urging them to participate in the study.

Eventually 15 (47%) responses were received with the feedback given in Appendix B. The summary profiles of the respondents are given below in Table 5.1 (Respondent Profile).

Table 5.1: Respondent 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			
- Petrochemical	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**	**47%**	

5.1.2 Results analysis

Analysing the feedback from respondents posed a challenge: in many cases the feedback was elaborate, which necessitated the careful selection of an analysis technique and the obvious requirement of testing the consolidated results through a second round. *Key word search* was initially considered appropriate to calculate the number of repetitions of specific words, but it was soon realised that this would not justify the effort since different words were used to explain the same concept. The only option was to review the inputs,

construct a consolidated response and send it back for review, comment and / or approval.

In order to arrive at the consolidated response, a different technique had to be used that would allow for the wide spectrum of feedback. According to Page and Meyer (2005), the most suitable technique to be used for this type of qualitative research is *informal content analysis*. The technique consists of scanning the content for recurring and repeated themes / concepts / words and constructing a summarised / consolidated description of the feedback. In order to verify the summarised / consolidated feedback, the results were returned to the initial respondents for comment, confirmation or criticism.

The feedback on each question in the Delphi questionnaire indicated that all the participants had specific views and that the principles under discussion were topical and current. From the practitioners' feedback it was quite apparent that the questions asked did, in many cases, address some sensitivities, especially with respect to the liability and accountability definition.

A discussion and summary of the responses to each question is provided below, with key words and phrases highlighted. Details of each respondent's feedback are given in Appendix B.

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

The first question was open ended and aimed at providing participants with the opportunity to express their views so as to determine their understanding of the concept of project governance. The result confirmed the original proposition that no agreed upon definition for project governance existed. The answers given borrowed heavily from general governance and corporate governance principles, although recognition was given to the fact that a project's main reason for existence is to bring about changes in the form of business results or other benefits. Surprisingly, there was little mention of personal accountability at this stage.

Table 5.2. Key words per respondent for question 1

Respondent	Key words / Phrases
1	Project performance, risk
2	Rules, compliance, risk
3	Client requirements
4	Laws, principles, ethics, best practices
5	Delivering a business case
6	Internal controls, integrate with corporate governance, deliver against commitments
7	Execution, international requirements
8	Rules, decision-making, appointment of authorities
9	Relationship between stakeholders and executive, protocols, risk, audit, business case, ethics, policies, procedures
10	Rules, policies, procedures, business case as defined by the investor.
11	Auditing, monitor, recording
12	Ethics
13	Structures and processes, link business objectives / strategies with project
14	Framework, part of investment and benefits, include 3rd parties, subset of corporate governance
15	Processes, decisions, authorise

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 1:

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.

This question prompted the respondents to air their views on the availability and suitability of literature on project governance. Given the response to question 1, as expected the feedback on question 2 confirmed the lack of frameworks and practices. Expected responses were classified as:

- positive: i.e. there are ample tools, literature, frameworks, etc., available, or
- neutral: i.e. respondents reserve comments or refrain from giving an opinion, or lastly
- negative: i.e. in the view of the respondent there is very little, if any, support available to apply project governance.

Table 5.3. Key words per respondent for question 2

Respondent	Key words / Phrases
1	Yes, little about risk, not commonly understood
2	Limited to money
3	Yes, insufficient systems
4	Maybe, level of integrity
5	Yes, project - not business focused
6	No - failure in understanding and application
7	Yes, lack understanding of international requirements
8	Yes - focus too much on contractual risk allocation
9	Yes - available but not integrated
10	No – frameworks available but not adhered to
11	Yes - experience, integration, require different levels
12	Yes - conflict of interest
13	PM frameworks to be used, lack of discipline in application
14	Yes - no integration between business and project
15	Yes - current practices focus on implementation

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 2:

Overwhelmingly YES (current frameworks and practices do fail to address project governance).

Although some guidelines exist on the Governance of Project Management, concerns were raised regarding (1) the definition and management of risk, (2) non-alignment and lack of integration with business / strategic parameters (3) authority of project leaders, (4) practical application of governance concepts in projects, as well as (5) discipline to refine and apply project governance principles.

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

With the word 'governance' as the common denominator, this question attempted to establish which aspects of corporate and project governance are considered to be equally applicable.

Table 5.4. Key words per respondent for question 3

Respondent	Key words / Phrases
1	PG subset of CG, proactive, overlapping
2	Similar, difference in level of reporting
3	Project governance should refer to corporate governance
4	Same rules should apply
5	Project governance is a subset of corporate governance
6	Same
7	Same w.r.t. management and reporting
8	
9	Same
10	Same, differ only in time
11	Follow corporate governance developments
12	Same in ethical standards

13	Compliance to rules and regulations, financial governance
14	Subset – Project governance to detail for project management what corporate governance details for organisations! – (Good summary!!!) ?
15	Similar

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 3:

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?

Whereas the previous question (Question 3) explored potential similarities between corporate and project governance, this question attempted to extract the key differences between the two concepts, especially those differences that could distinguish project governance as a stand-alone concept.

Table 5.5. Key words per respondent for question 4

Respondent	Key words / Phrases
1	Not same level of disclosure
2	Detail, legal
3	Project governance should refer to corporate governance

4	Difference in objectives / profit approach
5	Different timeframes
6	Timeframes - requires different speeds i.t.o. decision making. Integrate project governance with corporate governance
7	Project governance brings corporate governance to the project
8	Timeframe
9	Timeframe
10	Timeframe
11	Project governance micro, corporate governance macro level
12	Different sets of stakeholder interest due to timeframes
13	Project governance operational level, corporate governance strategic
14	Corporate governance for listed companies, project governance more at project level
15	Corporate governance is strategic, project governance focus on implementation

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 4:

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

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

From the literature review and discussions with project practitioners and academics, it became clear that various interpretations exist with respect to the use of the term 'project governance'. While many believed project governance has a strategic element attached to it, others viewed the concept as akin to project monitoring and control mechanisms, thus very much

operational. This question attempted to obtain a clear distinction, if any, between what is believed to be 'project governance' and 'project control'.

Another important aspect of this question was the fact that it also addressed the observation made in Chapter 1, Table 1.3, that project control was the common factor from various research outputs as a main contributor to project failure. Thus, when testing the eventual framework, the impact of good or poor project control on the level of success of the studied projects should be considered.

Table 5.6. Key words per respondent for question 5

Respondent	Key words / Phrases
1	PC is a subset of PG
2	PG is proactive, set the scene
3	Project control is a subset of project governance
4	Control involves process, project governance involves overall project management
5	Project governance focus on business delivery
6	Project control is a subset of project governance. Project governance sets the environment for project control
7	Project control - day-to-day, Project governance is more strategic
8	
9	Project governance operates at a more strategic level
10	Project control is a subset of project governance
11	Project control is at project management level. Project governance at macro level
12	Project governance is validating
13	Project control is a subset of project governance
14	Project governance more strategic than project control
15	Project authorities

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 5:

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 framework for large capital projects be project specific, company specific, country specific or generic?

Acknowledging that projects are unique, this question explored whether any form of generalisation should be allowed for in the development of a project governance framework, especially for large capital projects.

Table 5.7. Key words per respondent for question 6

Respondent	Key words / Phrases
1	Generic base with room for specifics
2	Generic base with room for specifics
3	Generic base with room for specifics
4	Generic base with room for specifics
5	Generic
6	Generic
7	Generic base with room for specifics
8	Generic base with room for specifics. Accommodate different levels of decision-making
9	Generic base with room for specifics
10	Generic base with room for specifics
11	Generic base with room for specifics
12	Generic
13	Generic and adaptable
14	Generic to be adapted
15	

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 6:

A project governance framework 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 framework for large capital projects involving multiple countries and companies?

A fairly open question, aimed at prompting participants to provide personal views, based on experience and insight, to what should be considered when constructing a project governance framework. The specific items will be used as key guiding instruments during framework development.

Table 5.8. Key words per respondent for question 7

Respondent	Key words / Phrases
1	Definition of outcomes and risks, financiers input will be key
2	
3	Understanding by senior management. Requires competence
4	Global view with financier inputs to be considered
5	Align project governance with corporate governance
6	Financier input
7	Obtain common principles, generic for overall application
8	Apply to countries with no / weak CG
9	Difficulty in simplicity, danger in 'too many' rules.
10	Overcoming resistance from stakeholders
11	Difficulty in simplicity and practicality
12	Implementation challenge, standardise
13	Remote application. Virtual work
14	
15	Focus on authority and communication

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 7:

Challenges include: (1) Accommodating financier's requirements and risks, (2) application in countries with weak corporate governance, (3) application 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 framework?

Corporate, and even personal liability, is clearly defined in corporate governance. With the large capital value involved and the strategic importance of many LCPs, this question prompted respondents to assess whether the same levels of accountability and corresponding liability should be addressed in project governance.

Table 5.9. Key words per respondent for question 8

Respondent	Key words / Phrases
1	Essential
2	
3	Competence and knowledge regarding projects
4	Difficult concept. No comment
5	Must be clear on accountability
6	Liability not directly part of governance
7	Not clear, dependant on stakeholders
8	
9	Beware of adversity

10	
11	
12	Part of quality system
13	Be clear on liabilities in contracts
14	Be very clear
15	Same liability as board of directors

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 8:

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 the 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 framework.

As with most Delphi studies, the last question of the first round allowed for open-endedness so that the respondent has the opportunity to air views not specifically addressed in the previous questions.

Table 5.4. Key words per respondent for question 9

Respondent	Key words / Phrases
1	PG not a substitute for self-governance
2	
3	Project governance part of methodology
4	Simplicity, practical
5	

6	
7	Use generic and customise to country / project
8	
9	
10	Practical
11	Framework for decision-making
12	
13	Be part of business process, not stand-alone. Self- governance
14	
15	

The key words and phrases were used to derive a summary answer to be issued for further comments and/or confirmation.

Summary answer 9:

The project governance framework should be (1) generic with the possibility to incorporate 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.

Responses to the first round of Delphi were very positive and the quality of input can only be commended. Apart from direct responses to the various questions, some additional side notes confirmed the belief that the topic under discussion is most relevant and necessary. No respondent queried the questions asked or provided alternative suggestions on how the topic should be approached.

After the first round, it became clear that the vast majority of respondents were at the same level of reasoning. Those questions aimed at seeking definition and direction towards the establishment of project governance (i.e. Questions 1, 3, 4 and 5) as an acceptable and mutually understood concept, achieved their objective and the responses were formulated such that each

summary answer could be drafted clearly enough for clarity testing and adjustment during the second round. Exploratory questions (i.e. Questions 2, 6, 7, 8 and 9) provided guidance towards the shaping of the eventual framework structure in the sense that the majority of respondents believed that alignment with acceptable corporate governance practices will be essential for project governance success. It was also clear that current literature and theory do not assist or support either practitioner or academic in the quest for any form of governance in projects.

With summary answers compiled, the second round of Delphi was sent to all the first round respondents.

5.2 Delphi - Round 2

The second round of the Delphi study aimed at providing the first round respondents with the opportunity to review the initial findings and comment on the results. Respondents could reject the findings, agree in principle with conditions or accept the outcome (see results in Appendix C). The second questionnaire contained all the summary answers with space for comments. Seven responses were received with general agreement on the concepts and minor detail comments. The only major critique from one respondent was his belief that project governance should be project specific. With the other seven respondents agreeing on a common framework with flexibility to accommodate project specifics, it was concluded that the original approach be maintained. It was further concluded that a third round of Delphi would not be necessary for further clarification.

The common agreement, reached after the second round of the Delphi survey, paved the way for the next step, that of developing a Concept Project Governance Framework (CPGF).

5.3 The concept project governance framework (CPGF)

With the key fundamentals of project governance firmly established, the next step was the development of the CPGF.

The following paragraphs will detail the process followed to develop the framework and illustrate and formulate the proposed framework.

5.3.1 Establishing the basis for CPGF development

In developing the CPGF, various findings in the research thus far have to be considered. This includes:

- The failures and listed shortcomings in the institutional arrangement of governance, as listed in Table 2.2. Although not addressed on an individual basis, the concerns listed need to be considered when formulating clauses and concepts. By considering these shortcomings the practicality of common critiques on governance will be addressed.
- The structure and layout of formal corporate governance frameworks such as Sarbanes Oxley (Table 3.1) and King II (Table 3.2). These structures will be used to ensure the CPGF alignment with current corporate governance practices as suggested by the Delphi respondents in questions 3 and 4 of the Delphi questionnaire.
- The comparison and summary of Sarbanes Oxley and King II, as listed in Table 3.3.
- The results of the Delphi research.
- The consideration of the guidelines set by APM (2004), OECD (2004), Cadbury Report (1992) as well as the United Nations Economic and Social Council (2005).

A further consideration that had to be incorporated when preparing for development of the CPGF, was how the framework would be tested on single or multiple cases. The framework has to assist in determining whether:

- The lack of project governance or the lack of project control had a dominant impact on poor project performance.
- The application (formal or informal) of project governance principles had a more significant impact on the positive outcome of project success than did project control.

Eventually, the research should ideally provide conclusive evidence of impact of project governance on project outcome and indicate whether project governance has a higher or lower impact on project success than project control does.

In developing the detail of the CPGF, the following process was followed:
Step 1 – Align corporate and project governance structures (address Delphi questions 3 and 4).
Step 2 – For each project governance category selected, include supplementary material and detailed concepts from the literature and Delphi results to populate the project governance column.
Step 3 – Complete CPGF framework and structure.

A process of deductive reasoning was followed to incorporate requirements contained in corporate governance frameworks and integrate requirements listed by respondents during the Delphi study into a new framework.

Apart from establishing a concept framework for project governance the CPGF also served as protocol to conduct the case study research.

The formulated CPGF would then be tested by means of the evaluation of multiple case studies.

5.3.2 Step 1 – Corporate and project governance alignment

Learning from the comparative study in Table 3.3, the main and sub-categories of corporate governance are listed in matrix format in Table 5.11 below. In order to align project governance to the matrix, a second column was inserted that contains the project principles to be addressed. The key items addressed are indicated in brackets and italic form in each cell. During Step 2 the allocated cells under project governance would be replaced and populated with the necessary motivation from identified sources.

Table 5.11: Corporate vs. Project Governance Alignment

	C. Corporate Governance	**P. Project Governance**
	A. Board of Directors and Audit Committee	***A. Project Steering Committee***
1. Composition	1. Core Competencies 2. Sufficient size 3. Comprised of executive and non-executive members 4. Chairperson should be independent	*(List Steering Committee composition requirements, competence and levels of independence)*
2. Responsibility	1. Board has ultimate accountability for the affairs of the company 2. Board should adopt a formal charter describing its responsibility, which should be disclosed annually	*(List how responsibilities and accountabilities should be handled within a project)*
3. Audit Committee to Board of Directors	1. Levels of independency 2. Financial literacy	*(Level of estimating and cost control management)*
	B. Financial Reporting and Internal Control	**B. Cost and Benefit Management**
1. Financial Reporting Responsibility	1. Board must report certain items annually regarding the preparation of financial statements and the use of effective internal controls 2. Quarterly certification by the CEO and CFO regarding compliance with the Exchange Act	*(Who takes responsibility for cost estimation and how must cost control be executed and reported)*
2. Financial Disclosures	1. Prohibition of certain non-GAAP information 2. Required disclosures in quarterly and annual reports of all material off-balance sheet transactions and	*(Level of financial and other interest disclosure among project stakeholders)*

	other defined relationships 3. All material correcting adjustments to the financial statements must be made	
3. Internal Controls	1. Internal control considered part of the risk management process 2. Board must implement and maintain generally recognized risk management and internal control frameworks 3. Disclosures must be made about the risk management process 4. Requirement for quarterly certification by the CEO and CFO regarding their responsibility over the disclosure controls and procedures	*(Formal requirements re. risk, quality and impact on project financial viability)* *(Any reference to project life-cycle management, project management in general and project control)*
	C. Accounting and Auditing	**C. Project Reviews and Audits**
1. Independence	1. External auditors should observe the highest level of business and professional ethics and should be objective and aware of their accountability to shareholders 2. Prohibits defined activities by the external auditor 3. Stricter partner rotation rules, limits on employment of former external auditors, and prohibition of fees earned by the audit partner for certain non-audit services	*(Any form of independence requirement from project auditors)*
2. Interaction with Companies	1. Requires an effective internal audit function with a formal internal audit charter 2. Requires mandatory communication between the external auditor and the audit committee	*(Any stipulation and requirement with respect to audit function communication)*
3. New Attestation Report	1. External auditor must issue an attestation report on management's internal control report	*(Any form of attestation requirements)*
4. Disclosure	1. Requires separate disclosure of the amounts paid to the external auditor for non-audit services, with a detailed description of the nature of services 2. Requires disclosure of fees paid to a company's principal external auditor for the two most recent years, with a description of the nature of services	*(Any requirements with respect to disclosure of auditors' compensation)*

	D. Organisational Ethics and Remuneration	D. Ethical, responsible conduct and conflict of interest
1. Code of Ethics	1. Standards of ethical behaviour should be codified in a code of ethics 2. Adherence to this code should be disclosed 3. Code should be made publicly available and any changes to the code or waiver from the code must be disclosed	*(Any requirement with respect to ethics and ethical behaviour by all or specific stakeholders)*
2. Compensation	1. Performance-related elements of compensation should represent a substantial portion of the total compensation package	*(List any indication of requirement with respect to compensation of key project personnel, including Steering Committee)*
3. Safety, Health and Environment	1. Included in business processes	*(List any formal requirement that could be legally binding)*
4. Social	1. Requires detail regarding inclusion of all local labour and stakeholders	*(List any items required with respect to social responsibilities)*

5.3.3 Step 2 – Populating the Project Governance Cells

The above table provides a broad outline for respondent feedback that is directly linked to the framework of corporate governance. The variables to be addressed in corporate governance were listed and were to be viewed in the context of the projects. Apart from the variables listed any additional items and variables mentioned by the respondents were to be recorded and categorised in appropriate sections.

The CPGF was divided into four main sections, covering:

A – Structuring of the steering committee (aligned with the Board of Directors in corporate governance)

B – Cost Management (aligned with Financial Reporting and Internal Control in corporate governance)

C – Project Reviews and Audits (aligned with Accounting and Auditing in corporate governance)

D – Ethics, responsible conduct and conflict of interest (aligned with Organisational Ethics and Remuneration in corporate governance).

Each section discussed below was derived through deductive reasoning:

A. Board of Directors and Audit Committee versus Project Steering Committee

CA.1.1: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (1) Composition - (1) Core Competencies

The National Association for Company Directors (NACD, 2002) states that the core competencies of the board as a whole should include the following core competencies:

- Accounting and finance – Expertise in financial accounting and corporate finance, including trends in debt and equity markets
- Business judgement – A record of making good business decisions
- Management – An understanding of the need and the intention to keep abreast of general management 'best practices' and their application in complex, rapidly evolving business environments
- Crises response – The ability and time to perform during both short-term and prolonged crises
- Industry knowledge – One or more members with appropriate industry-specific knowledge and experience
- International markets – Business experience in international markets
- Leadership – A knowledge and understanding of empowerment skills, and a history of motivating high-performing talent
- Strategy / vision – Ability to provide strategic insight and direction by encouraging innovation, conceptualising key trends, evaluating strategic decisions and continually challenging the company to sharpen its vision

Translating the above into the PA 1.1 cell, the following core competencies are proposed in-line with the corporate governance context:

PA.1.1: (P) Project Governance – (A) Project Steering Committee – (1) Composition - (1) Core Competencies

- Project finance and cost management (align with 'accounting and finance') – Expertise in project finance structuring, estimating and cash flow projections (Esty, 2004: 56). LCPs are all about business and investment decisions and the project steering committee should have proven ability to interpret project business proposals and to ask the right questions.
- Business / project alignment (align with 'business judgement') – ability to clearly define the actual business and strategic benefit the project will have (reference to Delphi question 2 response). The ability to link projects with strategy and compile portfolios of project or programmes has become a project field in its own right in recent years (Morris, 2004).

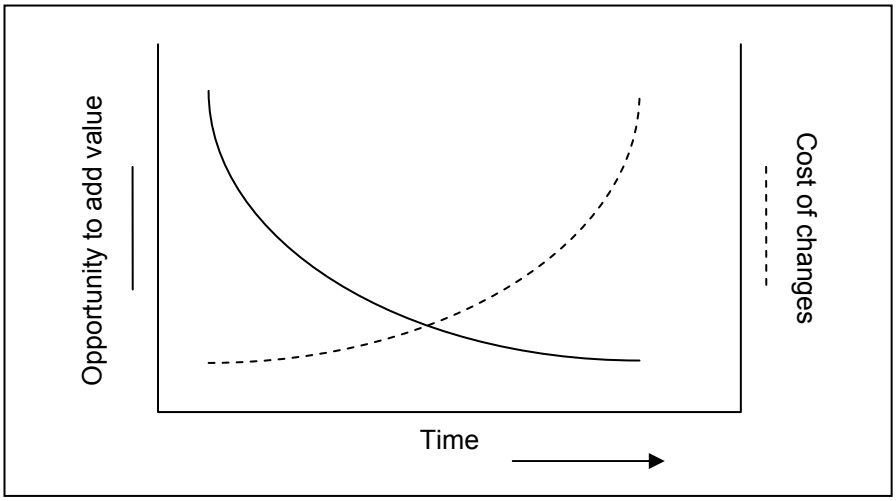

Figure 5.1: Project life–cycle behaviour

- Front-end-Loading (FEL) management (align with 'Management') – understand the importance of spending sufficient time during the upfront phases of the project to ensure proper definition, stakeholder alignment and value engineering (Legace, 2006). Since project governance is predominantly about setting up the project and preparing an environment

within which it has a chance to be successful, the importance of upfront work should be emphasised by the steering committee.

The item of FEL fits into the project life-cycle definition and management and specifically addressed the initial stages. A proper understanding of the characteristics and behaviour of the project over its life-cycle is of critical importance. This will necessitate the steering committee having the ability to judge the level of accuracy of total project scope definition. Figure 5.1 (Project life-cycle behaviour) illustrates the fact that the opportunity to add value decreases as the project progresses along its life-cycle, whilst the cost of change increases. Thus, if insufficient time is spent upfront to properly define the project scope and establish all the contractual and statutory agreements, the project might progress into cost and time difficulties during the later stages.

- Crises response (align with 'crises response') – Due to the temporary nature and excessive time pressures usually associated with projects, crises and crises management have become synonymous with project management. In project management the ability to manage a crisis, or sometimes various crises almost simultaneous, is paramount and synonymous with the temporary nature of a project. With a strong emphasis on deadlines, many good project managers are distinguished by their ability to perform under pressure.
- Industry knowledge (aligned with 'industry knowledge') – With the establishment of the PMI in the 1960s, the intention was, and in some areas still is, to develop the project management science and to promote project management as a profession. This implies that a person can be certified professionally as a PMP (Project Management Professional) and should be able to apply the knowledge and skills in any industry or in terms of any application. The IPMA (International Project Management Association) has similar certifications (CPM – Certified Project Manager, at various levels). However, the project management fraternity soon realised that different languages are used in different industries, resulting in the formation of Specific Interest Groups (SIGs. Currently, the debate

is still alive as to whether a PMP should be generally applicable or whether the project manager should have some technical and / or operational experience in the field where project management will be applied. Given more than 15 years practical experience and an informal survey that included experienced students in more than 50 project management teaching classes over a period of six years, it is strongly believed that, given the high impact nature of projects on skills required … the project manager should be well versed with the area / industry of application. Project managers need by no means to be specialists in their industries, but they should have sufficient knowledge to prevent team members from pulling the wool over their eyes. The project manager should be able to ask relevant questions about issues and risks that could have a potential impact on project performance.

- International awareness (aligned with 'international markets') – Large capital projects by nature involve multiple nations. This multi-country and multi-culture involvement stems from the different capabilities and competitive advantageous developed by the multi-national construction and finance companies across the globe. The challenges that emerge from a self-developing global temporary organisation require sensitivity to different cultures from steering committee members.
- Leadership – Since the project steering committee operates at a strategic level, the question of leadership requirement should go un-debated. For project governance to be exercised efficiently, those elected onto the project steering committee should have proven leadership credentials, especially with LCPs and the political / business environment of the project itself.
- Strategic alignment capabilities – since the initiation of a LCP of any sort is usually the result of a macro strategic plan, the project steering committee must be fully aware of strategic intention and goals. The committee should also ensure that the strategic objective is adhered to during the complete project life-cycle and that all activities, contracts and stakeholder management be considered in the context of the total organisational strategy.

- Contract management – Due to the nature of large projects and extensive use of various contracting strategies and formats, it is believed that the steering committee should consist of members with extensive experience and knowledge of the technical, commercial and legal aspects of the respected contracting arrangements.

CA.1.2: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (1) Composition - (2) Sufficient Size

Prescription regarding the size of board is hardly ever found.

Translating the above into the PA 1.2 cell, the following core competencies are proposed in line with the corporate governance context:

PA.1.2: (P) Project Governance – (A) Project Steering Committee – (1) Composition - (2) Sufficient Size

The size of the steering committee will be determined by the type, complexity and magnitude of the project. The steering committee members should ensure that the committee is populated with the correct skills and authority mix.

CA.1.3: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (1) Composition - (3) Member Mix

King II [2002] recommends that the board should comprise a balance between executive and non-executive members, with the majority being non-executive and a sufficient number of whom should be independent of management. The UK's Higgs Review, in KPMG [2003], notes that the UK's Combined Code stipulates "at least half of the members of the board, excluding the chairman, should be non-executive directors".

Translating the above into the PA 1.3 cell, the following approach to steering committee member mix is proposed:

PA.1.3: (P) Project Governance – (A) Project Steering Committee – (1) Composition - (3) Member Mix

In a project environment, the steering committee should not only oversee the economic viability of the project but also its sustainability and non-monetary implications. With LCPs environmental and socio-economic impact could be significant and the steering committee mix should include representatives who will oversee and address these factors on behalf of stakeholders and not only protect the economic and infrastructural benefits or maximise shareholder interests. Each member of the steering committee should provide individual input from varying perspectives.

CA.1.4: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (1) Composition - (4) Chairperson independent

Countries outside of North America are increasingly accepting the principle of a non-executive, independent chairperson for company boards. This separates the functions of the CEO and board chairperson. Many believe this is necessary to avoid giving too much power to the CEO. In general, the roles of the chairperson include:

- Providing overall leadership to the board without limiting the principles of collective responsibility for board decisions,
- Actively participating in the selection of board members,
- Addressing the development needs of the board as a whole and of individual directors,
- Monitoring and evaluating board and director performance appraisals,
- Developing a working plan for the board and compiling meeting agendas,
- Acting as the main information link between the board and management, and particularly between the board and the CEO,
- Ensuring the board has sufficient time to discuss issues,

- Maintaining relations with the company's shareholders and, perhaps some of its stakeholders, although the latter may be more in the nature of an operational issue to be conducted by the CEO and a senior management team,
- Ensure that all relevant information and facts are placed before the board objectively to enable directors to reach an informed decision.

Although preferably independent, the chairperson has specific roles and responsibilities regarding the strategic leadership of the company.

PA.1.4: (P) Project Governance – (A) Project Steering Committee – (1) Composition - (4) Chairperson independent

Due to the temporary nature of projects and the potentially wide economic, socio-economic and environmental impact during project execution and thereafter, the role of the steering committee chairperson might be more active and involved than the corporate board chairperson.

The steering committee chairperson should typically address:

- Establishment and confirmation of project governance criteria and guidelines,
- Upholding the highest standards of integrity and probity,
- Setting the agenda and adopting a progressive and proactive tone in steering discussions to promote effective and prompt decision-making,
- Promoting effective relationships and open communication, both within and external to the steering committee, as well as with the project manager and the project team,
- Promoting the highest standards of project governance and compliance,
- Ensuring effective consideration and implementation of steering committee decisions,
- Providing coherent leadership representing the broader community and effective liaison among financiers, stakeholders, tax payers and the project team through the project manager.

The steering committee chairperson is the custodian of project governance.

CA.2.1: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (2) Responsibility - (1) Board Accountability

The board is ultimately responsible for ensuring that the business remains a going concern and that it thrives. The board retains full and effective control over the company and it must therefore ensure that it effectively controls the company, directs and controls the management of the company and is involved in all material decisions affecting the project [KPMG, 2003].

PA.2.1: (P) Project Governance – (A) Project Steering Committee – (2) Responsibility - (1) Committee Accountability

It is believed that the project steering committee should fulfil a similar role as the board in a corporate environment, but in a project context. The project steering committee is ultimately accountable for effective and all-inclusive development and implementation of the project, taking into consideration stakeholder interests and external environment management (external to the immediate project management activities). The committee should bridge the void between project manager and immediate public, and statutory environment within which the project will function. Items such as conflict of interest, environmental and socio-economic impact, as well as contracting strategies, should be pertinently addressed.

CA.2.2: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (2) Responsibility - (2) Charter

Board should adopt a formal charter describing its responsibility, which should be disclosed annually.

PA.2.2: (P) Project Governance – (A) Project Steering Committee – (2) Responsibility - (2) Charter

For an LCP a formal project governance charter should be developed and agreed upon during the project initiation stages. The charter should be available to any role players or wider stakeholder community. The charter should address all the items listed in the project governance framework.

CA.3.1: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (3) Audit Committee - (1) Levels of Independency

King II (2002) recommends an audit committee with non-executive members, the majority being independent and having sufficient financial literacy. The UK's Audit Committees Combined Code Guidance requires at least three members, all of whom should be independent non-executive directors. Furthermore, the chairman should not be an audit committee member.

PA.3.1: (P) Project Governance – (A) Project Steering Committee – (3) Audit Committee - (1) Levels of Independency

The project audit committee should be independent, with the steering committee excluded from the audit committee.

CA.3.2: (C) Corporate Governance – (A) Board of Directors and Audit Committee – (3) Audit Committee - (2) Financial Literacy

In general, corporate governance guidelines are very clear regarding the minimum financial literacy required for the audit committee.

PA.3.2: (P) Project Governance – (A) Project Steering Committee – (3) Audit Committee - (2) Project Literacy

Whereas corporate governance focuses on financial literacy, the project environment calls for a wider view that will not look at cost performance and compliance with procedures, but at all aspects of the nine knowledge areas of the PMBoK (PMI, 2005). Auditors should be experienced project managers who will view actions in the context of the immense time pressures associated

with projects and the search for faster and less bureaucratic methods of addressing the project objectives in a responsible manner.

B. Financial Reporting and Internal Control versus Cost Estimating and Benefit Management

CB.1.1: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (1) Responsibility - (1) Board

In terms of corporate governance the board must report certain items annually regarding the preparation of financial statements and the use of effective internal controls.

PB.1.1: (P) Project Governance – (B) Cost and Benefit Management – (3) Responsibility - (2) Steering Committee

As opposed to a corporation, a project will not be driven by financial years but rather shorter intervals (i.e. six monthly). Instead of financial compliance, reporting should include expenditure control against baseline budget and continuous updating against the initial business plan or project justification parameters and benefits. The viability of the project against given and assumed parameters should monitored and reported on at specific intervals.

CB.1.2: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (1) Responsibility - (2) Exchange Act

Quarterly certification by the CEO and CFO regarding compliance with the Exchange Act

PB.1.2: (P) Project Governance – (B) Cost and Benefit Management – (3) Responsibility - (2) Project Governance Charter

Quarterly certification by the chairman of the steering committee that the project complies with the agreed upon project governance charter.

CB.2.1: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (2) Financial Disclosures - (2) Non-GAAP

Various corporate governance frameworks mention the disclosure of certain non-GAAP information.

PB.2.1: (P) Project Governance – (B) Cost and Benefit Management – (2) Financial Disclosures - (1) Project Finances

For any financial activities outside the GAAP requirements, full disclosure will be required.

CB.2.2: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (2) Financial Disclosures - (2) Reports

Required disclosures in quarterly and annual reports of all material off-balance sheet transactions and other defined relationships

PB.2.2: (P) Project Governance – (B) Cost and Benefit Management – (2) Financial Disclosures - (2) Reports

Project's financial status to be reported on a quarterly basis.

CB.2.3: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (2) Financial Disclosures - (2) Corrections and Adjustments

All material correcting adjustments to the financial statements must be made.

PB.2.3: (P) Project Governance – (B) Cost and Benefit Management – (2) Financial Disclosures - (3) Corrections and Adjustments

All changes, including stakeholder requirements and scope, with the resulting impact on the project's financial and time performance, must be reported within the immediate quarterly term.

CB.3.1: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (3) Internal Control - (1) Risk Management Processes

Internal control is considered part of the risk management process.

PB.3.1: (P) Project Governance – (B) Cost and Benefit Management – (3) Internal Control - (1) Risk Management Processes

At a strategic / steering committee level, the cost and benefit calculations and predictions, as well as the assumptions and basis for project justification needs to be monitored and updated on a continual basis. The updated project values and benefits should be used to identify and mitigate financial risks.

CB.3.2: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (3) Internal Control - (2) Risk Management

The board must implement and maintain generally recognized risk management and internal control frameworks.

PB.3.2: (P) Project Governance – (B) Cost and Benefit Management – (3) Internal Control - (2) Risk Management

The steering committee must ensure that proper risk identification, quantification and mitigation planning is done on the project, not only financially but covering at least the nine PMBoK Knowledge areas [PMI, 2004].

CB.3.3: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (3) Internal Control - (3) Risk Disclosure

Disclosures must be made about the risk management process.

PB.3.3: (P) Project Governance – (B) Cost and Benefit Management – (3) Internal Control - (2) Risk Disclosure

Disclosures must be made about all the risks on the project during the total project life-cycle.

CB.3.4: (C) Corporate Governance – (B) Financial Reporting and Internal Control – (3) Internal Control - (3) Risk Certification

Requirement for quarterly certification by the CEO and CFO regarding their responsibility over disclosure controls and procedures.

PB.3.4: (P) Project Governance – (B) Cost and Benefit Management – (3) Internal Control - (2) Risk Certification

Requirement for monthly certification by the chairperson of the steering committee of disclosure controls and procedures.

C. Accounting and Auditing versus Project Reviews and Audits

CC.1.1: (C) Corporate Governance – (C) Accounting and Auditing – (1) Independence - (1) Objectivity

External auditors should observe the highest level of business and professional ethics and should be objective and aware of their accountability to shareholders.

PC.1.1: (P) Project Governance – (C) Project Reviews and Audits – (1) Independence - (1) Objectivity

As with corporate governance, the external auditors on the project should observe the highest levels of business and professional ethics and should be

objective and aware of their accountability, not only to shareholders, but to stakeholders in general.

As opposed to corporate auditing, project auditors should look beyond financial and procurement compliance to the regulatory, statutory, ethical and managerial environment created for the project to be successful. The external auditors should therefore be qualified and experienced in LCP management.

CC.1.2: (C) Corporate Governance – (C) Accounting and Auditing – (1) Independence - (1) Scope

Prohibits defined activities by the external auditor.

PC.1.2: (P) Project Governance – (C) Project Reviews and Audits – (1) Independence - (1) 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 deems necessary to protect stakeholder interests.

CC.1.3: (C) Corporate Governance – (C) Accounting and Auditing – (1) Independence - (1) Rotation

Stricter partner rotation rules, limits on employment of former external auditors and prohibition of fees earned by the audit partner for certain non-audit services.

PC.1.3: (P) Project Governance – (C) Project Reviews and Audits – (1) Independence - (3) Rotation

Auditors should have no direct or indirect interest in the project or in the contractors / suppliers involved with the project.

CC.2.1: (C) Corporate Governance – (C) Accounting and Auditing – (2) Interaction - (1) Internal Charter

Requires an effective internal audit function with a formal internal charter.

PC.2.1: (P) Project Governance – (C) Project Reviews and Audits – (2) Interaction - (1) Internal Charter

Requires an effective internal audit function with a formal internal charter. The internal audit function should also include the auditing of project management, adherence to project methodologies, process and agreed practices and the project team's functioning.

CC.2.2: (C) Corporate Governance – (C) Accounting and Auditing – (2) Interaction - (1) Communication

Requires mandatory communication between the external auditor and the audit committee.

PC.2.2: (P) Project Governance – (C) Project Reviews and Audits – (2) Interaction - (2) Communication

As with corporate governance, it requires mandatory communication between the external auditor and the audit committee.

CC.3.1: (C) Corporate Governance – (C) Accounting and Auditing – (3) Attestation - (1) Report

External auditor must issue an attestation report on management's internal control report.

PC.3.1: (P) Project Governance – (C) Project Reviews and Audits – (3) Attestation - (1) Report

External auditor must issue an attestation report on the project's internal control report.

CC.4.1: (C) Corporate Governance – (C) Accounting and Auditing – (4) Disclosure - (1) Non-audit services

Requires separate disclosure of the amounts paid to the external auditor for non-audit services with a detailed description of the nature of services.

PC.4.1: (P) Project Governance – (C) Project Reviews and Audits – (4) 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, with a detailed description of the nature of services, is made.

CC.4.2: (C) Corporate Governance – (C) Accounting and Auditing – (4) Disclosure - (2) Fees

Requires disclosure of fees paid to a company's principal external auditor for the two most recent years, with a description of the nature of services.

PC.4.2: (P) Project Governance – (C) Project Reviews and Audits – (4) Disclosure - (2) Fees

Requires disclosure of fees paid to a company's principal external auditor since project commencement.

D. Organisational Ethics and Remuneration versus Ethical, Responsible Conduct and Conflict of Interest

CD.1.1: (C) Corporate Governance – (D) Ethics – (1) Code - (1) Standards

Standards of ethical behaviour should be codified in a code of ethics.

PD.1.1: (C) Project Governance – (D) Ethics – (1) Code - (1) Standards

Due to a relatively high amount of cash flowing over a fairly short period of time on a project, the opportunity for misconduct, corruption and other greedy practices was in fertile territory. The standards for ethical behaviour should be clear and based on established and statutorily accepted laws, guidelines and practices as well as global guidelines and directives (e.g. World Bank, United Nations, etc.).

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

CD.1.2: (C) Corporate Governance – (D) Ethics – (1) Code - (2) Adherence

Adherence to the Code of Ethics should be disclosed.

PD.1.2: (C) Project Governance – (D) Ethics – (1) Code - (2) Adherence

Adherence to the Code of Ethics should be disclosed and reported on a monthly basis.

The logical deduction approach to formulating the CPGF proved to be a comprehensive exercise. With no similar framework available for comparison purposes, validation and justification of each component was necessary. For practicality and comparative purposes, the CPGF is summarised in the next paragraph.

5.4 The CPGF

The summarised CPGF, derived from the Delphi results and various other inputs, is given below in Table 5.12.

Table 5.12: Concept project governance framework

	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* *2. Steering Committee Size* *Determined by project type, complexity and magnitude* *3. Member Mix* *Comprise members with direct interest as well indirect stakeholder representatives i.e. socio-economic and environmental* *4. Chairperson Independent* *The chairperson should be independent from any project stakeholders*
2. Responsibility	*1. Committee Accountability* *Overall accountability* *Bridging the gap between the project and the immediate external and statutory environment* *2. Charter* *Development and adherence to project charter*

3. Audit Committee to Board of Directors	*1. Levels of Independence* *The project audit committee should be independent with the steering committee excluded from the audit committee* *2. Project Literacy* *The Audit Committee should have extensive project experience on all aspects of LCPs*
	B. Cost and Benefit Management
1. Financial Reporting Responsibility	*1. Steering Committee* *Report against approved budget* *2. Project Governance Charter* *Report on adherence to the charter*
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*
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 the financials 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 regarding disclosure controls and procedures*
	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 deems 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. Interaction with Companies	*1. Internal Charter* *The internal charter should include the approach towards the auditing of project management, the adherence to project methodologies, processes and agreed practices and the project team's functioning* *2. Communication* *As with corporate governance, mandatory communication between the external auditor and the audit committee is required*
3. New Attestation Report	*1. Report* *External auditor must issue an attestation report on the project's internal control report*
4. Disclosure	*1. Non-audit services* *As with corporate governance, it is required that separate disclosure is made of the amounts paid to the external auditor for non-audit services together with a detailed description of the nature of services* *2. Fees* *Requires disclosures 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. Safety, Health &	*1. Adherence*

Environment (SHE)	*SHE requirements should be to international standards as a minimum and supplemented by host country requirements*
4. Social	*1. Adherence* *Social and socio-economic considerations should be to international standards as a minimum and supplemented by host country requirements*

This CPGF is in a format to be evaluated, tested and updated against actual project case studies.

5.5 Summary

This chapter aimed at producing validated information in terms of the overall research objective of producing a project governance model or framework. A comprehensive Delphi study was done with answers to the open-ended questions converging after two rounds. The average profile of the respondent was that of well experienced and knowledgeable project practitioners and academics.

The most significant observations emanating from the Delphi study were the statement that a gap in project management theory exists with respect to project governance and that an eventual project governance framework should compliment and be aligned with corporate governance guidelines.

A CPGF was derived for evaluation against project case studies.

The next chapter will review the use of case study research and the methods to be used in this dissertation. Two sources of case studies will be used to assess the CPGF, namely case studies available in literature and selected case studies to be investigated in depth.