

# DEFINING 'PROJECT GOVERNANCE' FOR LARGE CAPITAL PROJECTS\*

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## ABSTRACT

Over the past decade corporate governance has received ample attention. Lately the principles of governance have been applied to other management disciplines, especially project management. The evolution of the concept of 'project governance' resulted in various interpretations and applications of the term, causing confusion among academics and practitioners in various industries. Especially for large capital projects, a formal definition of the term 'project governance', and agreement on the content of a project governance model, have largely been neglected. This paper reports on exploratory work to define the concept of governance for large capital projects. An international Delphi survey, involving credible practitioners and academics, was conducted to define the term 'project governance' better. The paper also introduces a framework for project governance.

## OPSOMMING

Oor die afgelope dekade het korporatiewe geheelbestuur ('governance') heelwat aandag geniet. Die beginsels van 'governance' is ook in ander bestuursdissiplines, veral projekbestuur, toegepas. Die ontwikkeling van die konsep van 'projekgeheelbestuur' het gelei tot verskeie interpretasies en toepassings van die term, en het tot verwarring by akademië en praktisyns in verskeie bedrywe gelei. Definiëring van die term projekgeheelbestuur, en 'n raamwerk vir groot kapitaalprojekte, is grotendeels nagelaat. Hierdie artikel rapporteer oor verkenningswerk om die konsep van geheelbestuur vir groot kapitaalprojekte te definieer. 'n Internasionale Delphi-onderzoek, waarby geloofwaardige praktisyns en akademië betrek is, is uitgevoer om die term te definieer. Die artikel stel ook 'n raamwerk vir projekgeheelbestuur voor.

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## 1. INTRODUCTION

The turn of the century was marked by a number of incidents that lacked corporate accountability, responsibility, fairness, or transparency, and that gave rise to negative developments in corporate governance such as corporate scandals at Enron, Parmalat, Worldcom, and others. This resulted in country-specific laws and guidelines for corporate governance, of which the most prominent are the Sarbanes Oxley Act [1] in the United States of America and the Cadbury Report [2] in the United Kingdom. Although mostly confined to the developed world, some developing countries also embarked on formulating corporate governance guidelines - for example, South Africa's King II Report [3]. In project management circles, the term *project governance* has become popular, but there is much confusion about the definition of the term. Some seem to see it as an all-embracing term that includes all aspects of project management; others associate it merely with contractual clauses. Some regard the term as comparable to project control, while others relate it to all functions of a project steering committee. It is suggested that, unlike corporate governance, which is primarily organisation-specific, a globally relevant definition and guideline, and even a globally applicable model of governance for large capital projects, is possible and indeed desirable. This paper reports on an initial attempt to solicit individual views on project governance from a number of countries, and to facilitate communication in an attempt to derive a definition of 'project governance'.

## 2. LITERATURE REVIEW

The evolution of corporate governance can be traced back to the origins of the corporate enterprise around 3000 BC [4]. Merchants, marauders, imperialists, and speculators dominated business and public life for many centuries and, although they did not form fully-fledged companies, they created powerful organisations that changed commercial life. Such organisations developed and implemented various concepts of control and risk-sharing, and are part of the evolutionary process of formulating various kinds of corporate accountability. However, it was only towards the end of the 20<sup>th</sup> century, when various corporate scandals emerged, that corporate governance guidelines were formulated in several countries and even drafted into legislation (i.e. the Sarbanes Oxley Act in the USA). The formalisation of corporate governance mostly took place in developed countries, and was primarily reflected in board compositions and accounting requirements. Where corporate governance principles were formulated in the developing world, much emphasis was also placed on social and environmental responsibilities [3].

It could be argued that corporate governance is a globally accepted concept that provides overall guidance for the responsible conduct of business. Gillibrand [5] states that corporate governance guidelines produced by the Organisation for Economic Co-operation and Development (OECD) increase rather than decrease pressure on countries to develop and implement corporate governance guidelines and standards. They strongly encourage the application of good corporate governance as a precondition for international loans to governments for financial sector and other structural reforms, as well as equity investment in, and bank loans to, larger companies. Although the pressure is currently on listed companies 'to comply or explain' their corporate governance principles, this requirement is likely to be extended not only to all listed companies, but also to other privately and publicly owned companies and organisations who use 'other people's money', including taxpayers' money, equity, loans, or bonds. The latter merges with public accountability and calls for better control and transparency over not only *shareholder* interests but also *stakeholder* interests.

The opportunity to investigate the expansion of corporate governance principles into the public and stakeholder sectors coincides with renewed questioning of the performance - or rather, the lack of performance - of large capital projects.

### 3. THE PERFORMANCE OF LARGE CAPITAL PROJECTS

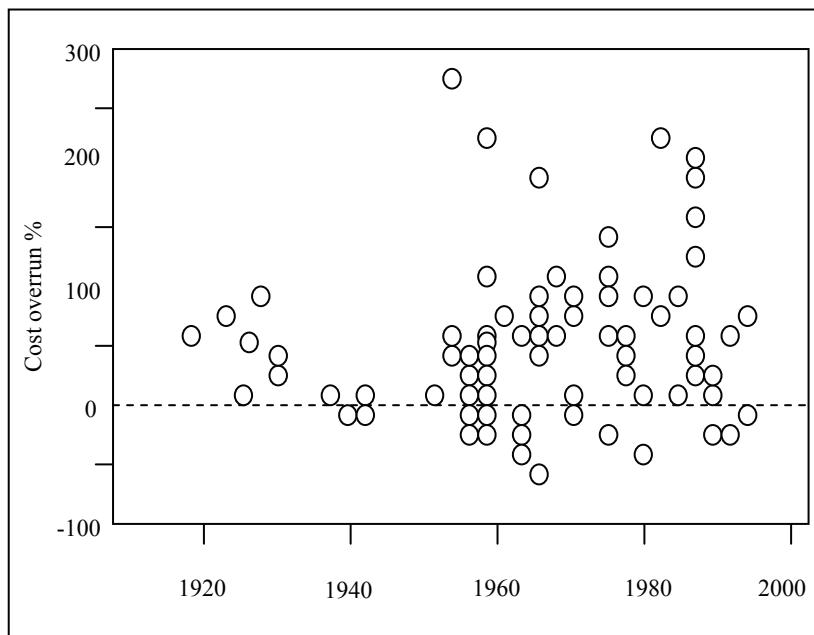
A study completed by the International Program in the Management of Engineering and Construction (IMEC) in 2000 [6] revealed that, of 60 large capital projects (LCPs) with an average capital value of US\$1 billion undertaken between 1980 and 2000, 18% incurred extensive cost overruns. It also found that almost 40% of the projects performed so badly that they were either totally abandoned or restructured after experiencing financial crises.

Merrow et al. [7] studied 47 'mega projects' and found that only four finished on budget, and that the average cost overrun was 88%. Of the 36 projects that had sufficient data, 26 (72%) failed to achieve their profit objectives. Based on their analysis, they concluded that projects with a greater proportion of public ownership, as well as larger, first-of-a-kind, and one-of-a-kind projects, perform more poorly. Supporting their observation, Morris & Hough [8] also provide a comprehensive list of cost overruns on LCPs.

Flyvbjerg et al. [9] completed a study in 2003 on the performance of large infrastructure projects. Their research was done on LCPs such as the Channel tunnel, the Øresund Bridge that connects Denmark and Sweden via road transport, the Great Belt Bridge that serves the same purpose with rail, Denver Airport, the Calcutta Metro in India, and various others discussed in greater detail in their study. It assessed two main performance measures:

- Cost overrun, and
- Benefit overestimation

According to the research, the general performance of the above variables in large infrastructure projects was appalling. As illustrated in Figure 1, cost overruns of more than 100% of the original approved budgets have not been uncommon on various large capital projects since the early 1900s.



**Figure 1. A century of cost overrun [9]**  
Source: Flyvbjerg, Bruzelius and Rothengatter

The data and graph show no visible trend toward improvement, despite the development and availability of advanced cost estimation and control techniques towards the end of the 20<sup>th</sup> century.

Project	Actual traffic as percentage of forecast traffic during the opening year
Calcutta Metro, India	5%
Channel Tunnel, UK and France	15%
Miami Metro, USA	18%
Paris Nord TGV line, France	25%
Humber Bridge, UK	25%
M65 Huncoat Junction to Burnley Section, UK	35%
Tyne and Wear Metro, UK	50%
Mexico City Metro	50%
Denver International Airport	55%

**Table 1: Benefit overestimation**  
 Source: Skamris [10]

Even more concerning than the cost performance was the underperformance of the expected / promised benefits of the projects to shareholders, the public, and other stakeholders. Large capital projects are usually justified by the potential improvement they will bring to logistics, transport, and general economic / societal support services. For example, the potential benefit of transportation projects is usually expressed in terms of the average hourly traffic and the overall distribution between peak and off-peak periods. Such figures are then summarised in terms of the throughput number of cars, passengers, or tons of cargo during an operational year. Table 1 provides quantitative information on the benefit performance on some of the most recent large transport projects.

In reviewing the above cost and benefit performance figures, Flyvbjerg et al. [9] conclude

*that cost overrun has not decreased in the past ten, thirty or seventy years. If techniques and skills for estimating cost overrun in transport infrastructure projects have improved over time, this does not show in the data graphically illustrated in figure 1. No learning seems to take place in this important and highly costly sector of public and private decision-making. This seems strange and invites speculation that the persistent existence over time and space and project type of significant and widespread cost overrun is a sign that equilibrium has been reached: strong incentives and weak disincentives for cost underestimation and thus for cost overrun may have taught project promoters what there is to learn, namely that cost underestimation and overrun pays off. If this is the case overrun must be expected and it must be expected to be intentional.*

Although these words may reflect some subjectivity, the results merit in-depth questioning of decision-makers’ bona fides, and support the general public belief that ‘all is not well’ when decisions about major contracts are made. Evidently, mismanagement appears in some form of cost-incurrence and over-expenditure to cover legal costs or under-estimation of the scope.

The main reasons why corporate governance fails to address shortcomings in public

accountability on projects are thought, first, to be the focus on shareholder protection, and second, the fact that large capital projects involve multiple countries and companies, resulting in multiple forms of corporate governance adherence. The uncertainty arising from this 'confusion' provides ample scope for opportunism.

Evidently, some form of governing mechanism is required to help address the apparent lack of accountability in large capital project performance. Thus the question of 'project governance' has emerged.

The term 'project governance' is not new, and has been used in various contexts in the project management fraternity. Liu & Yetton [11] refer to project governance with respect to risk allocation in construction and IT projects, while Turbit [12] views project governance as a subset of IT governance. Another view of governance in projects has been developed by the Association for Project Management (APM) in their *Guide to governance of project management* [13]. This approach, however, focuses more on the activities of the company directors in respect of project management, and does not view a project as a temporary organisation, with its own 'board' (the project steering committee) and complexities associated with multiple countries, governments, and companies engaging in the same project. The guide provides comparisons between the UK Listing Authority's Combined Code (2003) and the Sarbanes Oxley Act (2002). These codes have been drafted in a developed world context only.

#### **4. DEFINING PROJECT GOVERNANCE - A DELPHI STUDY**

Due to the lack of a formal definition of project governance, and the absence of consensus in the project management fraternity on what it entails, a study was launched to obtain the views of knowledgeable and experienced academics and practitioners on what the term should entail.

The established Delphi technique (Dalkey & Helmer [14], Lindeman [15], and Phillips [16]) is arguably one way of obtaining the most reliable consensus of opinion from relevant parties, as it is designed to determine the extent to which consensus exists (Xiao, Douglas, Lee & Vemuri [17]) and takes into account the independent and anonymous opinions of individuals responding in isolation. This frees them from pressure to conform, and results in valuable ideas. The technique lends itself to integrating responses from individuals who are geographically dispersed, and supports the objective of this study of obtaining a globally representative definition.

The Delphi method is often criticised for not providing empirical evidence; but it was felt that such evidence was not required for this exploratory work.

##### **The Delphi panel**

For this study, the objective was to involve a sample of knowledgeable individuals, including practitioners and academics from different countries. A total of 23 practitioners and nine academics from eight countries were contacted. Of these, 13 practitioners and only two academics responded. Attrition occurred between the first and second rounds of responses solicited, and this resulted in a final panel of eight respondents.

In the light of the opinions referred to earlier, this sample of 15 was considered sufficient. The 15 participants had an average of 24.8 and a total of 372 years' experience, had managed projects with a combined value of US\$43.95 billion, and had authored a total of 12 books and 30 other international publications. The two academics and one of the practitioners held PhD degrees, while eight of the practitioners had Masters degrees and the other four Bachelor degrees. Industries typical of large capital projects - mining, petrochemical, and infrastructure/ transport - were represented by four respondents each, while one respondent was from the telecommunications industry and two from academic institutions.

## Questionnaire design

Deciding on the range of questions required a review of the most fundamental questions. The key objective was to deal with the essence of project governance and to formulate a definition for practical use. Therefore the questionnaire had to start with open-ended questions, and progress to questions that would help to refine the definition and eliminate potential conflict and confusion with established concepts such as corporate governance, project management, and project control.

A first round of questions was sent to the panel of respondents to explore their opinions and to move towards a preliminary definition of, and guidelines for, the concept of 'project governance'. A summary of the first round responses was sent to all respondents to enable them to review and refine them. Eight responses were received during the second round, and the high level of agreement at that stage obviated the need for a third round of questions.

### *The questions for Round One*

While questions with a positive or negative answer are suitable to find a correct answer, 'open ended' questions were preferred to allow for independent original notions that could be integrated into a definition, guidelines, and a framework. The following questions were posed:

- 1) How would you define/describe the concept 'project governance'?
- 2) Do current project management frameworks and practices fail to address project governance? Please explain.
- 3) What are the similarities between corporate governance and project governance?
- 4) What are the differences between corporate governance and project governance?
- 5) What are the differences between project control and project governance?
- 6) To what extent should a project governance model for large capital projects be project-specific, company-specific, or generic?
- 7) Much effort currently goes into the establishment of global corporate governance principles. Which challenges need to be considered and overcome in the development and establishment of a formal, global project governance model for large capital projects that involve multiple countries and companies?
- 8) How should role player liability towards eventual project performance be incorporated into a global project governance model?
- 9) Please provide any other comments that you might have regarding the development and implementation of a project governance model.

Analysing the feedback from respondents posed a challenge. In many cases the feedback was elaborate, requiring a careful selection of analysis technique and the obvious requirement to test the consolidated results during a second round. The most suitable technique to be used for this type of qualitative research proved to be *informal content analysis* (Page and Meyer [18]). The technique consists of scanning the content for recurring and repeated themes/concepts/words, and constructing a summarised/consolidated description of the feedback. To verify this, the results were returned to the initial respondents for comments, confirmation, or criticism.

## 5. RESULTS

The overall feedback from respondents confirmed the belief that there is a need to define and formalise project governance. A strong view was that, whatever form of project governance model was to be developed, the focus should be on practicality, alignment with corporate governance, and general applicability. Summarised feedback from the nine questions is provided below:

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

The results confirmed that no generally accepted definition existed, and resulted in the following provisional definition: 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. Surprisingly, very little was mentioned about personal accountability at this stage.

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

The results overwhelmingly confirmed a lack of frameworks for project governance. Specific issues that were raised included concerns about the definition and management of risk, non-alignment of projects and lack of integration with strategic business parameters, the authority of project leaders, practical application of governance concepts in projects, and the discipline to refine and apply project governance principles.

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

There was general consensus that the principles of corporate governance apply to project governance; half of the respondents added that project governance should not only be aligned with corporate governance, but be a subset of corporate governance. Project governance should reflect the temporary nature and address the uniqueness of projects. For example, where corporate governance addresses the functioning of a corporate board, project governance should do the same for the project steering committee.

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

Corporate governance is clear regarding the level of detail of financial and legal disclosures, while the details of disclosure in projects are unclear. The difference also lies in timeframes: the project life-cycle has a much shorter life-span than a corporate entity, and requires a different approach to the process and speed of decision-making.

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

Project control is a subset of project governance. Project governance should be a proactive measure that sets the scene for, and the framework within which, project management - and subsequently project control - should function.

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

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

*Question 7: Much effort currently goes toward the establishment of global corporate governance principles. Which challenges need to be considered and overcome towards the development and establishment of a formal, global project governance model for large capital projects that involve multiple countries and companies?*

International projects pose a number of challenges, including (a) accommodating a financier's requirements and risks, (b) application in countries with weak corporate governance, (c) application in countries where senior or influential individuals 'do not want better control' for selfish reasons, (d) complexities associated with globalisation and virtual

work, (e) making project governance simple and practical to apply, and (f) overcoming stakeholder resistance to ‘another’ set of statutory requirements.

*Question 8: How should role player liability towards eventual project performance be incorporated into a global project governance model?*

The panel was divided over the incorporation of role player liability towards performance: half of the panel members proposed that stakeholder liabilities should be clearly defined in detail, while the other half argued that any items or actions that could create potentially adversarial situations should be avoided and handled outside the project context.

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

Additional comments confirmed some of the previously-mentioned notions, that project governance should be a framework for decision-making and should contain an element that promotes self-governance. Project governance should also aim at preventing runaway project spending in the same way that corporate governance aims to reduce uncontrolled losses and financial mismanagement.

## **Round Two of the survey**

A summary of the above results was sent to the respondents for comment. They could accept the results, reject them, or agree in principle and indicate specific conditions or constraints. Eight of them replied and were, in general, in agreement with the direction followed. One respondent indicated that project governance should be project-specific, while the other seven agreed on a generic model with flexibility to accommodate project-specific aspects. This round set the scene for the development of a draft framework for project governance.

## **6. A DRAFT FRAMEWORK FOR PROJECT GOVERNANCE**

With a key requirement from the respondents that the project governance framework should be aligned with corporate governance requirements, the results of the Delphi study were compared with the overall structure of the Sarbanes Oxley Act [1] and the guidelines of the South African King II Commission [3]. The reason for referring to these two corporate governance frameworks is that the former originates from the developed world, while the latter is probably the most advanced to be found in the developing world. Since large capital projects are developed and implemented on a global scale where the developed and developing worlds have to work together, the governance needs of both should be addressed. Other models and guidelines were also considered, with some input obtained from the British Cadbury Report [3], the Organisation for Economic Co-operation and Development (OECD) [19], and the United Nation guidelines on Governance in Public-Private Partnerships [20].

The following general categories for corporate governance were derived from the various guidelines:

- Composition and functioning of the Board of Directors
- Financial reporting and internal control
- Corporate accounting and control, and
- Organisational ethics and remuneration

To develop a project governance model, these four categories should be read in the context of a project, especially in terms of setting up the top management structures of the overall project during the initial phases. Table 2 below illustrates typical comparisons between corporate governance requirements for each category and the alignment towards the project environment. The descriptions in the ‘project governance’ column were made using



logical deduction from a project management point of view. The requirements in the 'project governance' column provide the foundation for the concept project governance framework.

	<b>CORPORATE GOVERNANCE</b>	<b>PROJECT GOVERNANCE</b>
	<b>A. Board of Directors and Audit Committee</b>	<b>A. Project Steering Committee</b>
<b>1. Composition of governing body</b>	Core competencies Sufficient size Comprised of executive and non-executive members	Core competencies associated with the unique aspects and complexities of large capital projects Sufficient size to assist in quick response and decision-making
<b>2. Responsibility</b>	Board has ultimate accountability for the affairs of the company. Board should adopt a formal Charter describing its responsibility, which should be disclosed annually	Steering committee, not project manager only, has ultimate responsibility for project performance.
<b>3. Audit Committee to Board of Directors</b>	Levels of independence Financial literacy	Project audit committee to consist of experienced and reputable members
	<b>B. Financial reporting and internal control</b>	<b>B. Cost estimating and cost control</b>
<b>1. Financial reporting responsibility</b>	Board must report certain items annually regarding financial responsibility	Steering committee to report monthly on overall project progress and risks
<b>2. Financial disclosures</b>	Prohibition of certain non-GAAP info	For projects funded fully or partially by government, the project cost performance must be published at determined intervals (bi-monthly or quarterly)
<b>3. Internal controls</b>	Board must implement and maintain generally recognised risk management and internal control models. Disclosures must be made about the risk management process. Requirement for quarterly certifications by the CEO and CFO regarding their responsibility over the disclosure controls and procedures.	Internal control also considered part of risk. Steering committee must implement and maintain a formal, structured risk management process. Risks must be clearly defined, quantified, and allocated among stakeholders and direct role players.

	<b>CORPORATE GOVERNANCE</b>	<b>PROJECT GOVERNANCE</b>
	<b>C. Accounting and auditing</b>	<b>C. Project reviews and audits</b>
<b>1. Independence</b>	External auditors should observe the highest level of business and professional ethics, and should be objective and aware of their accountability to shareholders	For projects the external auditor should not be restricted merely to cost and financial auditing, but also incorporate and consider all activities that impact on stakeholder interest
<b>2. Interaction with companies</b>	Requires mandatory communications between the external auditor and the audit committee	Requires an effective assessment and audit function to investigate and declare vested interests, especially between client and contractors
<b>3. New attestation report</b>	External auditor must issue an attestation report on management's internal control report	Project auditor to issue an attestation report on the project management function
<b>4. Disclosure</b>	Requires disclosures of fees paid to a company's principal external auditor for the two most recent years, with a description of the nature of services	Complete disclosure on contractual agreements and stakeholder involvement
	<b>D. Organisational ethics and remuneration</b>	<b>D. Ethical, responsible conduct and conflict of interest</b>
<b>1. Code of ethics</b>	Standards of ethical behaviour should be codified in a code of ethics	Standards of ethical behaviour should be codified in a code of ethics, especially during contract award
<b>2. Compensation</b>	Performance-related elements of compensation should represent a substantial portion of the total compensation package	Performance-related elements of compensation should represent a substantial portion of the total compensation package for the Steering Committee
<b>3. Safety, health and environment</b>	Included in business processes	Specific performance measurements should be applied to ensure adherence to international good practices on safety, health, and environment
<b>4. Social</b>	Requires detail regarding inclusion of all local labour and stakeholders	Specific criteria and performance measure should apply to adherence and incorporation of sustainable social development

**Table 2: Corporate vs project governance**

Although far from complete in terms of detail development and practical application, the 'project governance' column provides guidelines for governance that address the specific, multinational, and temporary nature of large capital projects. The next step would be to populate the project governance components further, and test them against case studies.

## 7. CONCLUSIONS

Project governance of large capital projects is defined as *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.*

The Delphi study confirmed the lack of a framework for project governance, and highlighted that the principles of corporate governance should be used to develop a framework for project governance. Unlike frameworks for corporate governance, which are largely country-specific, a project governance model should be generic but with room for project specifics. In addition, a number of specific issues were uncovered. These include, for example, the level of detail of financial disclosures, the concept of self governance (analogous to self control - a well-established concept in quality management), concerns about the definition and management of risk, non-alignment of project, and lack of integration, with strategic business parameters, authority of project leaders, practical application of governance concepts in projects, and the discipline to refine and apply project governance principles.

Consensus was not reached regarding the incorporation of role player liability into a framework.

Existing frameworks of corporate governance were used to identify four components of project governance, which were expanded to propose a draft framework for project governance.

## 8. PROPOSED FURTHER RESEARCH

Further research on the topic of project governance will include:

- Further refinement of the framework
- The investigation of a number of cases to validate the framework for project governance
- The development of practical tools and mechanisms for measuring adherence to project governance

This research supports the quest to broaden the application of corporate governance principles to other management spheres, and to improve accountability for project performance at sponsor level.

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