Front end Governance of Major Public Projects[1]

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Abstract

Governance regimes for major investment projects comprise the processes and systems that need to be in place on behalf of the financing party to ensure successful investments. This would typically include a regulatory framework to ensure adequate quality at entry, compliance with agreed objectives, management and resolution of issues that may arise during the project, etc., and standards for quality review of key governance documents. The challenges are abundant: How to ensure projects' viability and relevance up-front; how to avoid hidden agendas during planning, underestimation of costs and overestimation of utility, unrealistic and inconsistent assumptions; how to secure essential planning data, adequate contract regimes, etc.

Public investment projects do not always meet the expectations of different stakeholders. Many are delivered too late, at a higher cost, and do not meet agreed quality standards. These are common problems that might have considerable adverse effect on operational costs and even the economic viability. In most cases, however, the long term effects of such problems are minor. For instance, the Norwegian national university hospital was completed with considerable cost overrun. This, however, was equivalent to only some months of operational costs. The more serious type of problems associated with projects are when they are not able to produce the anticipated effect. Public resources are wasted. Clearly, a key to successful projects lies in the choice of concept and the fundamental design.

This paper discusses measures in terms of governance regimes that might improve success in public investment projects. There are numerous questions to be answered, such as: Which are the current procedures applied in different countries and agencies - and what are their effects? What would it take to develop more effective governance regimes at international, government or corporate level to ensure maximum utility and return on investment for society and investors? What would be the optimal mix of regulations, economic means and information in improved governance regimes for major investment projects?

Introduction

Major public projects are typically conceived as the result of politically expressed needs in dialogue between various stakeholders. This is followed by some lengthy process to develop the project and make necessary decisions. This typically involves government at various administrative levels, local government, political institutions, the public, media, and consultants and contractors in the private sector. Such processes are often complex, disclosed and unpredictable, as described and analysed in the in-depth IMEC study of 60 major projects where the focus was on the reconciliation of uncertainty and feasibility in the front-end phase, *Miller & Lessard (2000).* The processes can also be deceptive and irresponsible, affected by hidden agendas rather than openness and social responsibility, as discussed by *Miller & Hobbs (2005)* and *Flyvbjerg (2003).* In the field of Project Management, the focus has been on the complexity itself, the improvement of the processes and procedures involved, rather than the governance framework that could or should give direction and help improving the outcome of these processes. Projects Governance has only recently become an issue of importance in the project management community.

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Experience in the past clearly suggests that the government as the financing party in major public projects needs to improve existing governance regimes in order to secure cost efficiency and effects of investments, while avoiding direct involvement from the project is initiated until it is completed and enters its operational phase. The government, as represented by the responsible ministry, would normally have neither the necessary competence nor the need to interfere in the design and management of projects at tactical or operational levels. Ministries will usually have a strategic perspective, and a restricted role in facilitating structured, responsible and efficient preparation and implementation – in order to maximise the benefits from public investments as seen in a long term perspective. Direct involvement of central government at tactical or operational levels tend to fail as evidenced in a study of 250 international development projects, *Samset (1998)*, where the main problem seemed to be that the government was left with both the responsibility and the risk, which could otherwise been handled both more efficiently and effectively by others.

Policy to facilitate public management reforms

The political trend in many industrial and developing economies the last decades towards increased liberalization and privatization has resulted in various types of public management reforms. The aim is to build effective and accountable institutions in the public sector and facilitate investment and initiatives in the private sector. The objectives are to improve performance in public sector and promote economic development under what is termed good governance. Trends towards increased autonomy of public and private institutions have been followed by a corresponding trend to increase control measures and regulation. In the stricter sense this would imply that an increasing number of agencies are being established in order to enforce regulations. In a less rigid sense, regimes are introduced that are based on degrees of self-regulation exercised by the institutions involved with reference to publicly endorsed rules and standards. This is much in the same way as the private sector adopts standards for accounting and auditing prescribed by the public. While the regulatory features of such regimes may represent new restrictions and administrative challenges, they are introduced in different areas essentially to facilitate autonomy and increase efficiency.

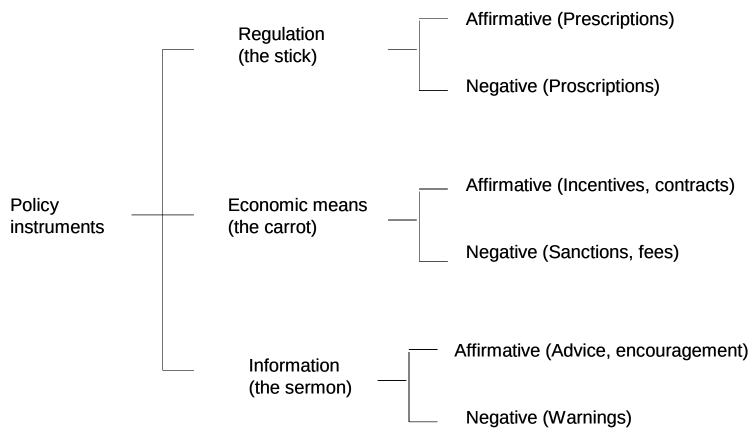

Figure 1 Policy instruments to improve governance in public sector.
Source: Bemelmans-Videc, Vedung and Rist (1998)

The policy instruments available to the public in order to bring about such changes are not restricted to the use of regulations, but would also comprise economic means and information, as discussed by *Bemelmans-Videc, Vedung and Rist (1998)*. The instruments can be either affirmative or negative. Regulations can be either prescriptive and provide rules to be followed, or proscriptive, specifying what is not allowed. Economic means can be either incentives, for instance in terms of benefits or refunding arrangements, or negative sanctions in terms of taxation or fees. Information can be either in terms of advice and encouragement giving guidance of what can be achieved and in which way, or in terms of warnings or description of pitfalls and possible adverse effects. The generic model in figure 1 is matched by the World Bank's model to enhance state capability, *the World Bank (2000)*, where the regulatory part is described in terms of rules and restraints, the economic part in terms of competitive pressure, and the information part in terms of public 'voice' and partnership. The Organisation for Economic Co-operation and Development, OECD, highlights what is termed the principles of good governance, which include: (1) *Accountability* - government is able and willing to show the extent to which its actions and decisions are consistent with clearly-defined and agreed-upon objectives. (2) Tr*ansparency* - government actions, decisions and decision-making processes are open to an appropriate level of scrutiny by others parts of government, civil society and, in some instances, outside institutions and governments. (3) *Efficiency and effectiveness* - government strives to produce quality public outputs, including services delivered to citizens, at the best cost, and ensures that outputs meet the original intentions of policymakers. (4) *Responsiveness* - government has the capacity and flexibility to respond rapidly to societal changes, takes into account the expectations of civil society in identifying the general public interest, and is willing to critically re-examine the role of government (5) F*orward vision*- government is able to anticipate future problems and issues based on current data and trends and develop policies that take into account future costs and anticipated changes (e.g. demographic, economic, environmental, etc.), and (6) *Rule of law* - government enforces equally transparent laws, regulations and codes.

Again, the aim is to increase autonomy and efficiency in society. Such policy instruments as the ones mentioned can be used as a reference when discussing systems for improved governance of public investment projects.

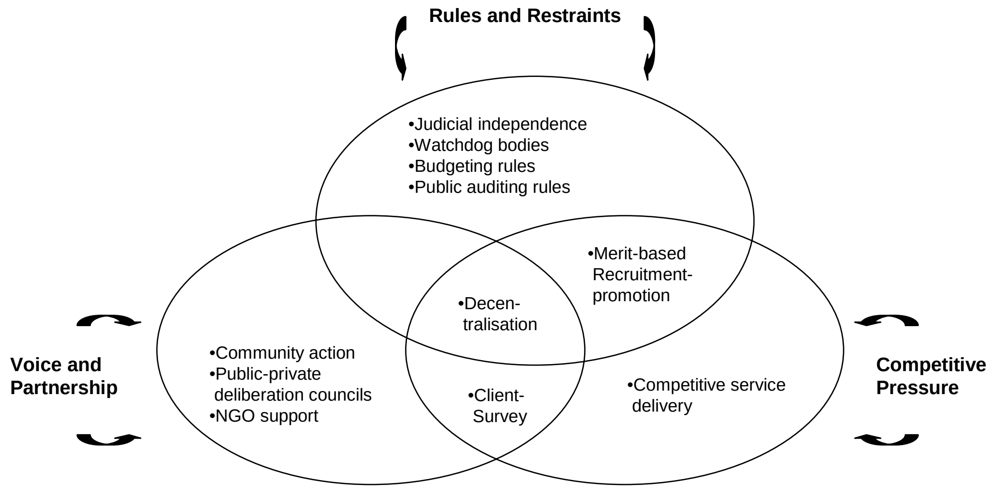

Figure 2 Mechanisms to Enhance State Capability: Three Drivers of Public Sector Reform
Source: the World Bank (2000)

Problems encountered up-front in public projects

Many of the problems facing major public investment projects can be interpreted in terms of deficiencies in the analytic or the political processes preceding the final decision to go ahead, and the interaction between analysts and decision makers in this process.

The more fundamental problems that have to do with the project's long-term utility and effect could typically be traced back to the earliest preparatory phases of the project, while the more marginal problems of cost efficiency, delays and cost overrun are management issues that arise during the project's implementation.

The more fundamental challenges would typically be to deal with problems such as tactical budgeting in responsible agencies at various levels, that is done in order to increase the chance to obtain government funding for a project. Another challenge is to increase the chance that the most relevant project concept is chosen. Yet another challenge is to ensure a transparent and democratic process and avoid adverse effects of stakeholder's involvement and political bargaining. But also to make the process predictable is a major challenge since the front-end phase in large public projects commonly would extend over at least one parliamentary election period.

Principles for front-end governance of projects

Governance regimes for major investment projects comprise the processes and systems that need to be in place on behalf of the financing party to ensure successful investments. This would typically include a regulatory framework to ensure adequate quality at entry, compliance with agreed objectives, management and resolution of issues that may arise during the project, etc., and standards for quality review of key governance documents.

Miller and Hobbs have discussed the need for design criteria that should be brought to bear when developing a governance regime for a megaproject, in light of the complexity of such projects, *Miller and Hobbs (2005).* Their assumption is that these would contrast with the traditional conception of governance as a static, binary, hierarchical process. Governance regimes for megaprojects are time-dependent and self-organising. Because the process is spread out over a long period of time, there is an opportunity to transform the governance structure as the project unfolds. Rather than thinking of the design of megaproject governance structures as a search for the one best structure, the design of such regimes can be thought of as a flexible strategic process that will draw on a variety of governance regimes to deal with different issues in different phases of the project life cycle. Some of these issues are predictable while others will be emergent. This opportunity is unique to large complex projects.

Flyvbjerg discusses ambitions, risk and effects in megaprojects based on large samples of projects, *Flyvberg, Bruzelius, & Rothengatter, (2003).* The authors conclude that the problem with such projects is mainly one of risk-negligence and lack of accountability on behalf of project promoters whose main ambition is to build projects for private gain, economical or political, not to operate projects for public benefit. Their suggested cure for what is termed the megaproject paradox is (1) that risk and accountability should be much more centrally placed in megaproject decision making than is currently the case, (2) that regulations should be in place to ensure that risk analysis and risk management is carried out, (3) that the role of government should be shifted from involvement in project promotion to keeping and arm's-length distance and restricting its involvement in the formulation and auditing of public interest objectives to be met by the megaproject, and (4) that four basic instruments be employed to ensure accountability in decision making: by (a) ensuring transparency, (b) specifying performance requirements, (c) making explicit rules regulating the construction and operations of the project, and finally (d) involving risk capital from private investors, the assumption being that their willingness to invest would be a sound test on the viability of the project up-front.

Norwegian front-end governance of investment projects

Year 2000 the Norwegian Ministry of Finance introduced a mandatory quality-at-entry regime and a research program to meet the challenges described above. The focus in the early stage of the Quality-at-entry regime was to reduce implementation cost. From 2005 onwards, the regime was expanded to include quality assurance of the early choice of concept. This is a vital step to make sure the right projects get started, and to dismiss unviable projects. Thus, it is vital to enforce changes in existing processes early enough when there are still real options available. In parallel, the ministry initiated a research program designed to study the effects of the regime and focus on front-end management of major public projects. The research aims to improve the Quality-at-entry regime continuously.

The Norwegian governance system was designed to improve analysis and decision making in the front-end phase, and particularly the interaction between the two. It was based on the notion that the necessary binding rules for decision making already was in place; however, there were no binding rules that could ensure quality and consistency of analysis and decisions.[5] In an ideal technocratic model for decision making this would not be necessary. Here decision and analysis follow in a logical and chronological sequence that would eventually lead to the selection and go-ahead of the preferred project without unforeseen interventions or conflicts, as illustrated in Figure 3. In reality, the process may to a larger degree resemble an anarchic process affected by various stakeholders, which is complex, less structured and unpredictable. Analysis may be biased or inadequate. Decisions may be affected more by political priorities than by rational analysis. Political priorities may change over time. Alliances and pressures from individuals or groups of stakeholders may change over time. The amount of information is overwhelming and may be interpreted and used differently by different parties. The possibility for disinformation is considerable, etc.

[5] A parallel here would be the private financial institutions where investment projects are handled almost exclusively based on a review of the investors credibility and collateral available, and with little regards to substantial issues or characteristics of the investment project as such.

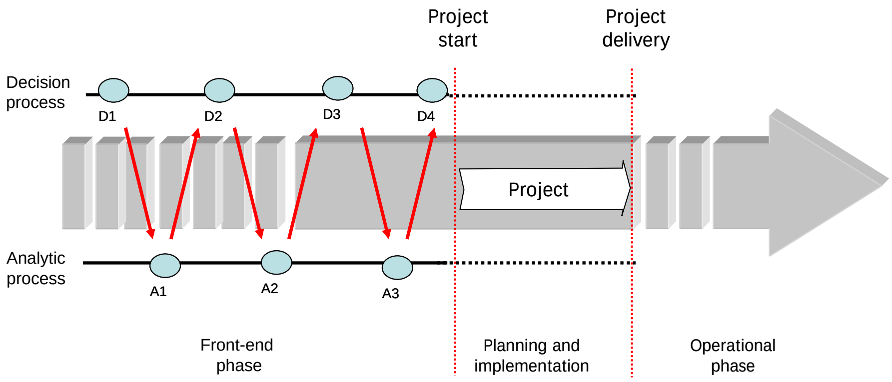

Figure 3 A model of technocratic decision making up-front in projects

A response to these challenges would obviously not be a strict and comprehensive regulatory regime. It would rather seem to be (1) to establish a distinct set of milestones and decision gates that would apply to investment projects in all sectors regardless of existing practices and procedures in the different ministries or agencies involved. (2) To ensure political control with fundamental go/no go decisions. (3) To ensure an adequate basis for decisions, and (4) to focus decisions on essential matters not on the details. What seemed to be the answer was (1) to anchor the most essential decisions in the Cabinet itself. (2) To introduce a system for quality assurance of the basis for decisions that was independent of government and sufficiently competent to overrule the analysts, and (3) to make sure that the governance regime was compatible with procedures and practices of the affected ministries and agencies.

Under the Norwegian Quality-at-entry regime, pre-qualified external consultants are assigned to perform quality assurance of the decision basis in all public investment projects with a total budget exceeding 60 Million Euro. During the first four years, this applied to some 50 projects where cost estimates and decision documents were scrutinised prior to Parliamentary appropriation of funds. Based on the experience gained, the regime was expanded in 2005, to include two separate quality assurance exercises in sequence, that is to secure the decision basis for: (1) the choice of concept (QA1), and (2) the budget, management structure, contract strategy etc. for the chosen project alternative (QA2).

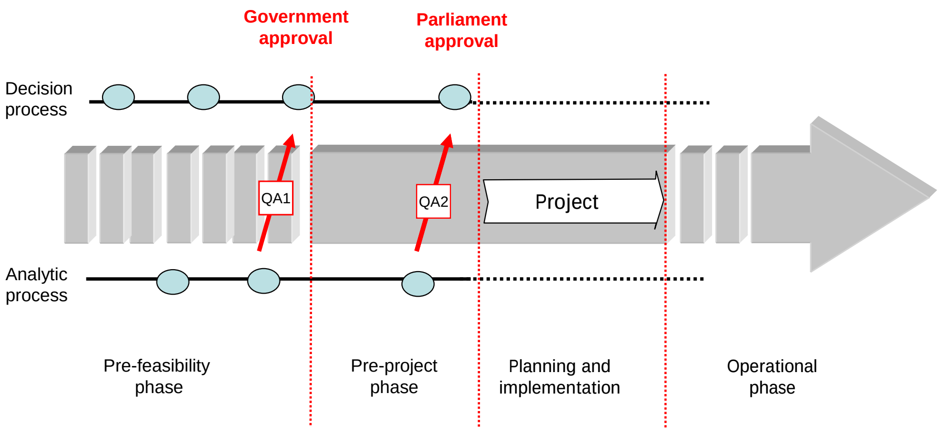

Figure 4 The Norwegian quality-at-entry regime for major public investment projects

QA1 should help ensure that the choice of concept is subject to a political process of fair and rational choice. Since the choice of concept is a political one, the consultants' role is restricted to reviewing the professional quality of underlying documents constituting the basis for decision. The decision is anchored in the Prime Minister's Office and will initiate a pre-project to analyse the feasibility of the chosen project. As decision basis the responsible ministries are now required to explore at least two alternative concepts in addition to the zero-alternative (doing nothing). They should prepare the following documents:

1. **Needs analysis** that would map all stakeholders and affected parties and asses the relevance of the anticipated investment in relation their needs and priorities
2. **Overall strategy** that should specify on this basis consistent, realistic and verifiable immediate and long term objectives
3. **Overall requirements** that need to be fulfilled, for instance functional, aesthetic, physical, operational and economic requirements
4. **Alternatives analysis** that defines the zero-option and at least two alternative concepts, specifying their operational objectives, essential uncertainties, and cost estimates. The alternatives should be subjected to a full socio-economic analysis.

QA2 is performed at the end of the pre-project phase, aimed to provide the responsible ministry with an independent review of decision documents before Parliamentary appropriation of funds. This is partly a final control to make sure that the budget is realistic and reasonable, and partly a forward-looking exercise to identify managerial challenges ahead. The analysis should help substantiate the final decision regarding the funding of the project, and be useful during implementation as a reference for control. Focus is on the strategic management document, and the consultant will review its consistency with previous decisions when the concept was decided (QA1) as well as the implications for the project of possible changes that might have occurred afterwards, and the cost frame, including necessary contingency to make sure the budget is realistic.

Discussion

The quality-at-entry regime is essentially a top-down regulatory scheme that was introduced to enforce a qualitative change in government practice and improve quality at entry of major investments. During its first four years it did not interfere with current procedures, but merely aimed to improve on existing documents that are an essential basis in the political decision process. Experience is that although the regime has been controversial, it has also been met with essentially constructive responses from the ministries and agencies involved, which have adapted their practices to meet the new quality requirements, and in some cases also adopted the scheme as a self-regulatory procedure.

This is possibly due to three factors: (1) the regime does not interfere with existing procedures for analysis or political decision making, but merely aims to lift the standard for underlying documents. (2) It does not require altered procedures in the involved institutions. (3) The introduction of the scheme has been supported by establishing an arena for exchange of experience. This is in the sense of meetings at regular intervals headed by the Ministry of Finance, with representatives of ministries, agencies, consultants and researchers. This has facilitated openness and cooperation among the parties to discuss standards and practices and develop the scheme further.

The resistance against the scheme is first and foremost rooted in the fact that it challenges the conclusions and professional judgement of the involved agencies, but also that it has caused increased attention and media debate about cost estimates and budgetary compliance in public investment projects.

The extended quality-at-entry regime, however, that was introduced 2005, adds another dimension to the regulatory feature of the scheme, in that it anchors the decision regarding the choice of concept in the Prime Minister's Office. The reason for this is that the choice of concept is considered the single most important decision that will determine viability and utility of a project, and hence the extent to which public funds are being used effectively. Lifting the decision from the administrative to the political level provides a distance from narrow perspectives and professional biases. It also introduces authority that is expected to have a trickle-down effect on professional conduct at agency level. For these reasons, it is expected to be controversial. The response, however, seems to be rather coloured by an understanding that this is a sensible and logic step in the right direction, and in agreement with fundamental democratic principles.

One fundamental aspect of the governance regime is that at least three alternative concepts should be considered, and it should be done at an early stage when options are still open. The alternatives should have the same degree of specification, to help making fair assessments of alternatives. This has triggered a debate regarding what should be considered a concept. Should it be restricted to a distinction between different technical solutions to the same problem, for instance bridge versus tunnel in an infrastructure project for crossing a fjord, or should it be related to the differences in the combined effects of different projects in the broadest sense. Whatever the answer, since the regime has put this on the public agenda it is expected to have a considerable effect on analysts, politicians and the public in the time to come. This, and the emphasis on socio-economic analysis, might prove significant in the aim to identify relevant alternative concepts and select the most viable project alternative.

In terms of tactical cost under-estimation up-front, the government agency is now required to come up with a realistic preliminary cost estimate at an early stage where alternative concepts are being considered. The fact that this estimate will be subjected to a second external review once the pre-study is completed is expected to have a disciplining effect on analysts and reduce large cost overrun as we have seen in the past.

Conclusion

In this paper we have discussed the necessity of governance regimes in securing the interests of the financing party in public investment projects – to improve overall decisions and the effect of public investments on the one hand – and increase autonomy and the performance of those responsible for planning and implementation on the other hand. This seems to require some regulatory measures. We have discussed by example one way to proceed, by introducing top-down regulatory measures, and anchor major decisions at the political, rather than the administrative level of government. By limiting interference in existing practices and procedures, this may be effective, and might even be adopted in terms of self-regulatory schemes, that could ultimately make central top-down interventions unnecessary. Openness and transparency seems to be essential in improving governance of public investments.

However, project governance has only recently become an issue in the project management community. In order to move forwards in this field there are numerous questions to be answered: Which are the current procedures applied in different countries and agencies - and what are their effects? What would it take to develop more effective governance regimes at international, government or corporate level to ensure maximum utility and return on investment for society and investors? What would be the optimal mix of regulations, economic means and information in improved governance regimes for major investment projects? Etc. What seems to be an issue for the project management community is to lift their perspective beyond the delivery of the project itself and onto the broader issues of the project's utility and effects. An increased understanding and sensitivity in this area could be of mutual benefit to both the financing and the implementing parties.

References

Association for Project Management Governance SIG, (2004) Directing Change: A Guide to governance of project management, APM. www.mylara.com/gopm/default.asp

Bemelmans-Videc M., Rist R., Vedung E., (eds.): *Carrots, Sticks, and Sermons: Policy Instruments and Their Evaluation*, Transaction Publishers, New Brunswick, New Jersey. 1998

Berg et al, 1999. *Styring av statlige investeringer*. Sluttrapport fra styringsgruppen for prosjektet for styring av statlige investeringer. Finansdepartementet.

Concept 2003. *Front-End Management of Large Public Projects.* CD containing results of a research conference held in Oslo September 23. -24. 2003. Also available from the Concept website.

Concept 2005 website: The Concept research program: www.concept.ntnu.no

Finansdepartementet 2004. Ref.jnr. 04/1267C Anbudsinnbydelse – Rammeavtale om konsulenttjeneste vedrørende kvalitetssikring av konseptvalg, samt styringsunderlag og kostnadsoverslag for valgt prosjektalternativ. (Ministry of Finance. Invitation to tender.)

Flyvberg, B., Bruzelius, N. & Rothengatter, W., (2003) Megaprojects and Risk: An Anatomy of ambition, Cambridge University Press, Cambridge

Flyvbjerg, Bent, Holm, Mette S. and Buhl, Søren. 2002. Underestimating Cost in Public Works Projects. Error or lie? *Journal of the American Planning Association*, 68 (3), 279-295.

Flyvbjerg, Bent, Holm, Mette S. and Buhl, Søren. 2004. What causes cost overrun in Transport infrastructure projects? *Transport reviews*, 24(1), 3-18.

Klakegg, Ole Jonny. 2004. *Målformulering i store statlige investeringsprosjekt*. NTNU Concept-programmet.

Klakegg, O. J, Samset, K. and Magnussen, O. M. 2005. *Improving success in public investment projects; lessons from a government initiative in Norway*. Proceedings 19. IPMA World congress, New Delhi.

Magnussen, O. M. & Samset, K., (2005) Successful Megaprojects: Ensuring Quality at Entry, Proceedings EURAM 2005, Munich

Magnussen, Ole Morten and Samset, Knut. 2005. *Successful Megaprojects: Ensuring Quality at Entry*. NTNU/Concept. Paper for the EURAM 2005 conference.

Miller, Roger and Hobbs, Brian. 2005. *Governance regimes for Large Complex Projects*. University of Montreal. Paper for the EURAM 2005 conference.

Miller, Roger and Lessard, Donald R. 2000. *The strategic Management of Large Engineering Projects: Shaping institutions, Risk and Governance.* Cambridge Mass.: MIT Press.

Morris, P.W.G. and Hough, G.H. 1991. *The Anatomy of Major Projects. A Study of the Reality of Project Management.* Chichester, UK; John Wiley & sons.

Næss, Petter 2004a. *Bedre behovsanalyser. Erfaringer og anbefalinger om behovsanalyser i store offentlige investeringsprosjekt.* NIBR / NTNU Concept-programmet.

Næss, Petter. 2004b. with contributions from Kjell Arne Brekke, Nils Olsson and Ole Jonny Klakegg. *Tidlig fase i store offentlige investeringsprosjekter. Vurdering av behov, mål, fleksibilitet og effekt.* NIBR / NTNU Concept-programmet.

Nijkamp and Ubbels 1998. *How reliable are Estimates of Infrastructure Cost? A comparative Analysis.* Serie Research Memoranda. Research memorandum 1998-29 [online]. Amsterdam, Vrije Universiteit. Available from URL: <ftp//zappa.ubvu.vu.nl/19980029.pdf> (accessed 2004 october 20.)

North, D., (1990) Institutions, Institutional Change and Economic Performance, Cambridge University Press, Cambridge.

Office of Government Commerce (OGC) (2003) Managing Successful Programs, The Stationary Office, Norwich

PMI (Project Management Institute) 2000. *A guide to the Project Management Body of Knowledge* PMBOK® Guide 2000 edition. PMI

Samset, Knut 1998, *Project management in a high-uncertainty situation. Uncertainty, risk and project management in international development projects,* Ph.D dissertation, Norwegian University of Science and Technology, Trondheim, Noray, May 1998

Samset, Knut 2001. *Prosjektvurdering i tidligfasen. Fokus på konseptet* (Front-end Assessment of Projects. Focus on the concept", University textbook, Tapir Academic Press, ISBN 82-519-1679-8, Trondheim 2001

Samset, Knut 2003. *Project Evaluation. Making Investments Succeed*, Textbook, Tapir Academic Press, ISBN 82-519-1840-5, Trondheim, Norway 2003

Santos, Sergio, Belton, Valerie and Howick, Susan. 2002. Adding value to performance measurement by using systems dynamics and multicriteria analysis. *International journal of operations and production management*. Vol. 22, No. 11. pp 1246-1272.

Torp, Olav, Austeng, Kjell and Mengesha, Wubishet Jekale 2004. *Critical success factors for project performance; a study from front-end assessments of large public projects in Norway*. Concept program/NTNU. Paper for the Nordnet 2004 conference in Helsinki, Finland.

UK Office of Government Commerce (OGC) 2001. *Measuring the performance of Government Departments*. HC 301.

UK Office of Government Commerce (OGC) 2005. http://www.ogc.gov.uk/

Williamson, O.E. (1996). "The mechanisms of Governance". Oxford University Press, Oxford.

World Bank. 1996. *Evaluation results 1994*. The International Bank of Reconstruction and Development. Washington DC.

World Bank. 2000. Reforming Public Institutions and Strengthening Governance, A World Bank Strategy, Washington DC, November 2000