



Front end Governance of Major Public Projects - Lessons with a Norwegian Quality Assurance Scheme

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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.

This paper discusses measures in terms of governance regimes that might improve success in public investment projects. Success is defined at two levels; 1) operational (efficiency and cost control), and 2) strategic (effectiveness and viability). As a special case, we present the Norwegian project governance regime applicable to major public projects, which has existed since year 2000. It comprises two quality assurance exercises in the front-end phase, aimed to ensure an adequate basis for the political go/no go decisions, but with no involvement during project implementation. The experience we have so far is positive and shows that the regime most likely leads to more successful projects at both levels.

Keywords: Project governance, cost management, quality assurance

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1 INTRODUCTION

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.

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 and Lessard (2000). The processes can also be deceptive and irresponsible, affected by hidden agendas rather than openness and social responsibility, as discussed by Miller and Hobbs (2005) and Flyvberg et al. (2003). In the field of Project Management, the focus has been on the complexity itself, the improvement of the processes and proce-

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dures 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, see for example Müller (2009).

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 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 have been handled both more efficiently and effectively by others.

2 PUBLIC PROJECT SUCCESS AT VARIOUS LEVELS

The starting point for the creation of a project governance regime should be to define what constitutes a successful project. This obviously depends on who you ask, as well as the level of ambition and the time frame that you have. When it comes to major public investment projects, a broad societal perspective should always be taken, in addition to the perspectives of the project manager, commissioner, beneficiaries, and other stakeholders. The commissioner in this case is the entire society and all its taxpayers.

We can, somewhat simplified, define two levels of project success, as shown in Figure 1.

The first level, is about operational success. The project must meet its immediate targets relating to time, cost and quality. If the project is to build a road, these targets may be defined by the scope (length, width) of the road, the agreed quality (road conditions, type of asphalt, etc.) and on whether the project is delivered within budget and on time. The budget and time frame should be such that the implementation is efficient compared to other, similar projects. The second level is about strategic success and relates to the choice of concept. For a private investor, the question is whether the project will generate higher profits for the company in the long run. When investing in

a public project on behalf of society, the question is whether the project will contribute to long-term benefits for users and society at large and remain viable over time. If for example the project is to build a road, important effects may be time savings for those who use the road, and in turn increased productivity and economic growth for the whole nation. One must however take into account that the project could have adverse effects on other overarching goals. If the same road is expected to have negative impacts on the environment, this cannot be ignored and one must try to find the right balance between various interests when the choice of concept is made. To summarize: project success is both about “doing the project right” and “doing the right project”.

There are many examples of projects that have been highly successful at an operational level, but failed strategically. This is the case for projects where the implementation is excellent and delivery is obtained with lower use of resources than expected - but the final product provides little benefit to users and society. An expensive but under-utilized road bridge from the mainland to an island with a decreasing population could be an example. Another much debated example was a huge coastal torpedo battery in the northern part of the country that was a fortress that was deemed obsolete by the Parliament and closed down only weeks after it was completed and taken over by the military.

Conversely, one can also find examples of projects that were operationally unsuccessful, for example because of the huge cost overruns, but still proving to be strategically successful, because in the long term, the excess investment cost is just a small share in comparison with operational costs and the long-term net benefit is positive. A well designed and highly needed hospital in a major city could serve as an example. We realize therefore that strategic success is the “most important” type of project success.

3 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 benefits (i.e. strategic success) 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 (i.e. operational success) are management issues that arise during the project’s implementation. Berg (1999) reviewed 11 major public investment projects and found that eight of these (i.e. 73 percent) had severe cost overruns compared to the budget that was set by

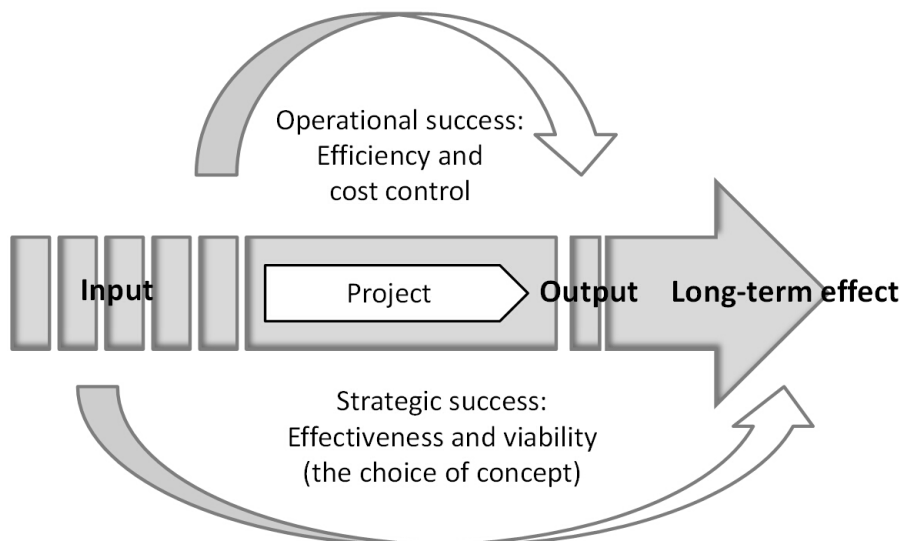


Figure 1. Two levels of project success

Parliament. This was considered a serious problem, and it indicated poor cost management as well as poor estimation procedures as a basis for recommending a budget frame. These problems are widely discussed in academic literature on projects. A study of more than 4000 large government funded projects (Morris and Hough 1987), found that very few projects were completed ahead of schedule and with lower costs than budgeted. Overruns were typically between 40 and 200%. Flyvberg et al. (2003) analysed 258 infrastructure projects in 20 countries over a period of 70 years and conclude that nine out of ten projects had cost overruns. The average was 28% and the problem had not improved or worsened during the period. Berechman and Wu (2006) studied 128 road projects in Vancouver, Canada that opened in the years 1993 to 2003 and found that as many as 104 of these had considerable cost overrun. One author maintains that cost overruns have become so common in the United States that it is no longer a question of systematic underestimation, but that cost deviations have become the norm (Pinto and Slevin 2006). He claims that a culture has developed where decision makers no longer see any reason to give credence to figures presented in the early phase, but acknowledge already at that stage that cost overruns will occur. The more fundamental challenges would typically be to deal with problems such as tactical budgeting in responsible agencies at various levels, which 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.

4 PRINCIPLES FOR FRONT-END GOVERNANCE OF PROJECTS

In this context the term “project governance” refers to the processes, systems and regulations that society (the financing party) must have in place to ensure that projects are successful. 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 appraisal documents.

Miller and Hobbs (2005) 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. 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.

Flyvberg et al. (2003) discusses ambitions, risk and effects in megaprojects based on large samples of projects. 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, economic 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 an 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.

5 NORWEGIAN FRONT-END GOVERNANCE OF INVESTMENT PROJECTS

Year 2000 the Norwegian Ministry of Finance introduced a mandatory quality-at-entry regime to meet the challenges described above. The focus in the early stage of the Quality-at-entry regime was to ensure efficiency and cost control (operational success). From 2005 onwards, the regime was expanded to include quality assurance of the early choice of concept (strategic success). 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.

The Norwegian QA-scheme is an example of a project governance regime. It 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. 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 2. 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.

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 in the public agencies, 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 reviewers are assigned to perform quality assurance of the decision basis in all public investment projects with a total budget exceeding 100 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, which 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).

The Ministry of Finance is responsible for organizing the QA process. In 2000, the Ministry called out a tender and entered into framework agreements with five consulting agencies, all with expertise within project management and cost engineering, to perform QA2. In the second and third tender, in 2005 and 2010, the regime included both QA1 and QA2, and a broader competence including social science and economics was required. Currently there are five consortia performing QAs, some of them have been reviewers from the start. It is compulsory to use one of these consortia to perform QA1 and QA2. It is the sectorial ministry (e.g. the Ministry of Transport and Communication in the case of road projects), in cooperation with the Ministry of Finance, that makes the purchases (call-offs according to the framework agreement).

The reviewing process is fairly similar in QA1 and QA2. It starts by the reviewer receiving documentation from the ministry and its subordinate agency. Then, the reviewer goes through the documentation and checks that it is sufficient as basis for decision making. If not, additional information may be requested. The reviewer shall also conduct its own inde-

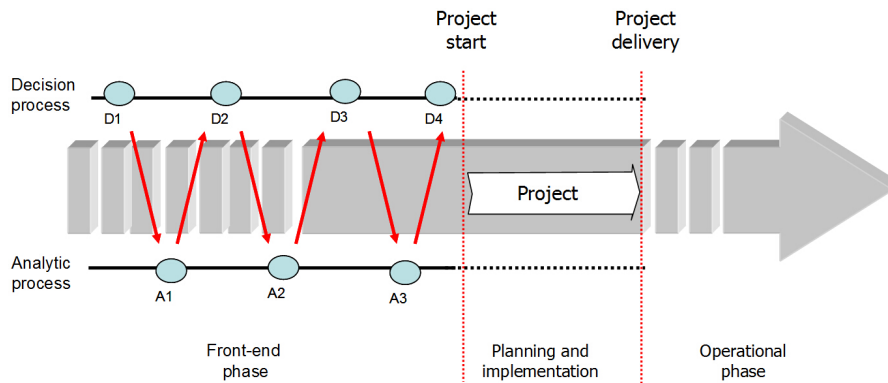


Figure 2. A model of up-front technocratic decision making in projects where experts and decision makers operate in perfect concert

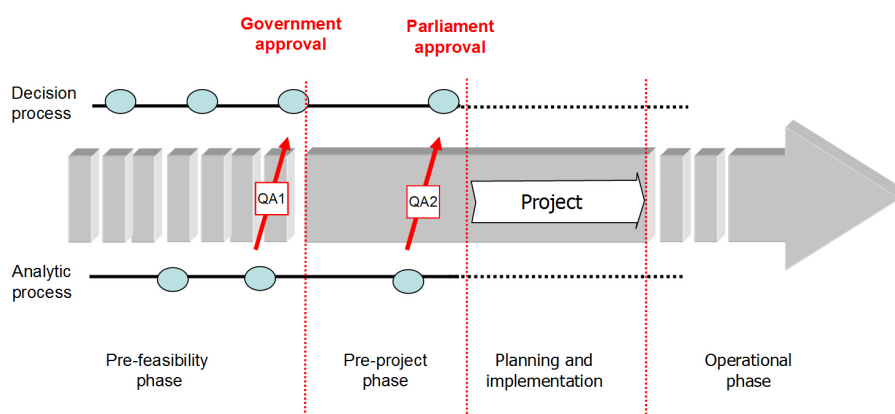


Figure 3. The Norwegian quality-at-entry regime for major public investment projects

pendent analyses and calculations (uncertainty analysis and cost-benefit analysis). Finally they write their report and present it to the sectorial ministry and Ministry of Finance. The report will then normally be made public. The final choice is made by policy makers who are obviously not bound by the reviewer's recommendations.

QA1 should help ensure that the choice of concept is subject to a political process of fair and rational choice. The decision is anchored in the Cabinet and the decision may be to initiate a pre-project for the chosen concept. As decision basis the responsible ministries should prepare the following documents:

1. Needs analysis that would map all stakeholders and affected parties and assess the societal relevance of the anticipated investment in relation to 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. Possibility study. Needs, goal, purpose and requirements will together constitute the 'frame of opportunities'. It is essential to ensure that the frame of opportunities is not too narrow.
5. 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 social cost-benefit analysis, including an uncertainty analysis for the investment cost.

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 steering document, and the reviewers will look at 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 oc-

curred afterwards, and the cost frame, including necessary contingency to make sure the budget is realistic.

6 TRAILING RESEARCH - FOR CONTINUOUS IMPROVEMENT OF THE QA SCHEME

The Norwegian QA scheme is in fact a unique laboratory for research on longitudinal data. Therefore, in parallel, the Ministry of Finance initiated a research program designed to study the effects of the QA regime and focus on front-end management of major public projects. This was then a largely neglected area in project management research. The Concept Research Program follows the QA scheme and provides feedback to the involved parties in order to improve the scheme continuously, based on research on the projects and processes involved.

The program also facilitates cooperation between key Norwegian and international institutions, universities, research institutes, and consulting companies. The prime users comprise ministries and government agencies, project organizations and professionals in industry. The program is based at the Norwegian University of Science and Technology. Since 2002 the program has been funded by the Norwegian Ministry of Finance. The research works in symbiosis with government in different ways during the 12 years that it has been in operation, for instance:

1. The researchers have been involved directly as team members in a number of the external quality reviews. This has been a two way process: For the researchers to learn from current practices, and for the consultants to get feedback from ongoing research and access to information about best practices from the researchers.
2. The ministry of Finance has over the years organized a number of consultative meetings for all parties involved in the QA scheme, which are the relevant ministries, agencies and reviewers. The aim has been to exchange views, discuss and harmonize practices, and resolve upcoming issues. The researchers have had a key role in these sessions and the research program has organized some of the larger sessions on behalf of the ministry.
3. The ministry of Finance has issues a number of guidelines for the parties involved in the scheme. The researchers have had a consultative role in the development of these guidelines.
4. The research program is maintaining a web site where all material, QA reports, guidelines, as well as scientific reports and papers can be accessed and downloaded by all. All results from the program are open to the public and available free of charge.

The largest impact however, has probably been helping the Ministry of Finance to set up and continuously improve the methodological framework for the QA scheme. With inputs from the researchers, QA1 has been devised with a systems engineering type of approach in order to ensure a broad and well documented process that starts with a needs analysis and ends with the identification and analysis of several alternative solutions. This has broadened and deepened the analysis up front, and allowed for a wider and more innovative range of alternatives to be considered. The researchers also contribute to the alternatives analysis being performed within the framework of best practices for social cost-benefit analysis.

As regards the QA2, the researchers have been instrumental from the very start in introducing top-down stochastic cost estimation techniques, as a cost effective alternative to traditional bottom-up cost calculation. This has been implemented across the board, and has greatly increased the use of systematic cost estimation, and in particular the use of probabilistic cost estimates in budgeting and cost control in agencies and ministries in general.

Under the program about 40 separate studies have been completed in such areas as public management, economic analysis, project management, planning, decision making, analytical methods, risk analysis, portfolio management, contract management, the use of incentives, applied logic and probabilistic assessment. Six text books and several anthologies have been produced, as well as a number of working papers, and refereed scientific papers. The spin-off in terms of education has been considerable, and resulted in about 20 courses with a large amount of students. About 50 MSc level and 10 PhD theses have been produced. The results of the QA scheme can therefore to some degree be attributed to the research being done at the Norwegian university of science and technology.

7 EVIDENCES OF CHANGE AFTER 13 YEARS WITH THE QA SCHEME IN NORWAY

Clearly, major investment projects take time to mature. The time span from the idea is presented, a budget approved, the project planned and implemented and finally has been in operation long enough so that its effects can be evaluated is typically 10 - 20 years, in some cases even more. Therefore, the first indications of the effects of the scheme are only becoming visible now.

7.1 Effects of QA2 - increased efficiency and cost control (operational success)

A study made by the Concept researchers and being published in 2013 based on the first 40 completed projects can tell us something about the effects of QA2

(Samset and Volden 2013). Of the 40 projects about half are roads (21) and the others are buildings (7), railways (6) and defense projects (6). A common feature is that all projects have been fully or partially funded by the State, and they have all been through external quality assurance of the budget, management structure, contract strategy etc. (QA2). This is fairly representative of the sectorial distribution of investment projects under the QA scheme to date. The average budget for the projects was about 1.5 Billion NOK. The most expensive projects were in the railway sector (average 2.5 Billion). The most expensive project in the defense sector was the acquisition of six missile torpedo vessels, (5.6 Billion), and in the building sector the Oslo Opera House (4.6 Billion) The projects were implemented in the period 2000 to 2012, but some were planned, and also started, in the days before QA2 was introduced.

Figure 4 below shows the final investment cost relative to the budget appropriated by the Parliament. The budget includes necessary contingency reserves for uncertainty. It is typically based on the reviewers' stochastic cost estimation, and the general rule has been to use the P85 value, i.e. the final cost is expected to fall within budget with 85 percent probability. Our data shows that 32 projects or 80 percent remained within or below budget, which at portfolio level is very close to what was estimated. Eight projects had cost overruns totaling 1.7 billion NOK. About half of this was due to one single railway project and most of the others are small projects. The largest projects had considerable savings, and total savings were about three times higher than total overruns. This is a sensational result compared to what could be expected earlier

Figure 5 shows the final cost compared to the expected value (P50), i.e. without the contingency reserve. Although it is accepted that it is necessary to

draw on the contingency reserve for individual projects, agencies with many projects are expected to deliver within P50 for the portfolio as a whole. The figure shows that exactly half of the projects remained below and half above the expected value, that is, the distribution is symmetric. This result too is remarkable as it indicates that stochastic cost estimation provides robust results for a sufficiently large portfolio of projects. It also indicates that the contingency reserve is not used to make the projects larger or greater than necessary, in cases where there are no negative effects of uncertainty.

The overall net cost savings can be estimated at about six percent of the total investment, or four billion NOK. Compared with the total expenditure for the external reviewers in these 40 projects, estimated at 120 million NOK, this gives an indication that the return of "investing" in QA2 is significant.

If this trend continues in the future, it will be truly sensational, and strongly suggest that the QA scheme has a positive effect on budgeting and cost management in large public investment projects. Also, the practice of establishing a lower steering frame for the executing agency (typically at the P50 level) has probably been an important step to provide incentives for cost efficiency.

7.2 Effects of QA1 - more viable concepts (strategic success)?

Regarding the effect of QA1, having been effective for only eight years, it is still too early to perform a systematic evaluation. About 60 investment projects have undergone QA1 until today. However, to determine whether the choice of concept was a successful one, one must normally wait until the investment has been in regular operation for some years. No projects that have undergone QA1 are completed and entered into

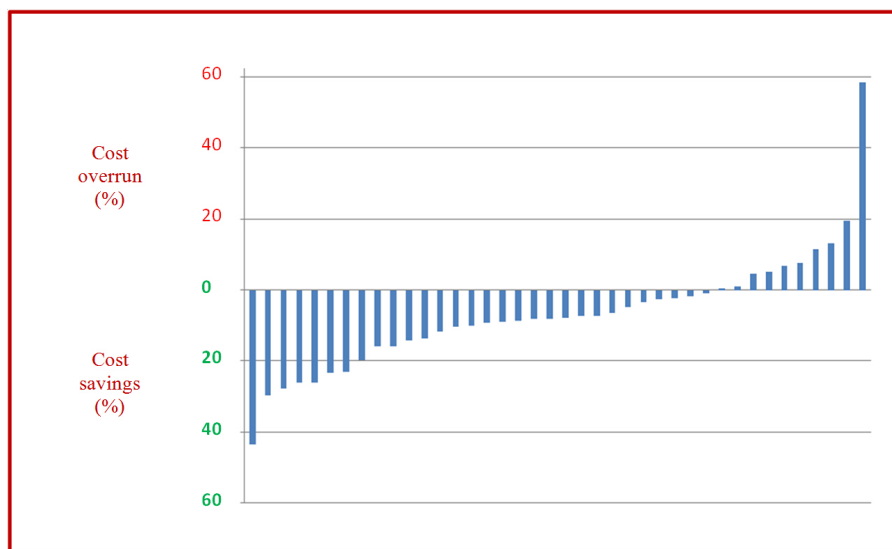


Figure 4. Final investment cost relative to budget

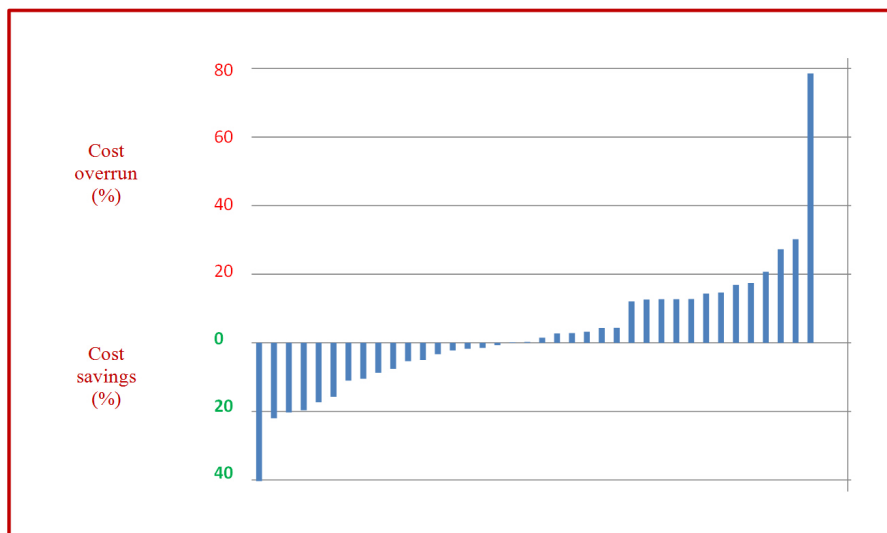


Figure 5. Final investment cost relative to P50 estimate

operation yet.

There are however some studies that can give us an indication of the effects of QA1. Three evaluations focus on projects that have undergone QA1 in the transport sector (Rasmussen et al. 2010; Norwegian Public Roads Authority 2012; Bjertnaes 2012). About half of all quality assured projects are transportation projects. These studies conclude that QA1 has provided a more systematic treatment of project ideas in the front-end which did not exist before. Planners are now forced to broaden their perspective and discuss the societal justifications for a new road or railway, rather than go straight to the detailed questions of location and technical solutions. This is perceived as stimulating for those involved, and they see that it increases the likelihood that the most viable option will be included in the analysis. There is still room for improvement. Needs and goals are not analyzed to sufficient depth, and the frame of opportunities is still not always exploited fully, according to these evaluations. The latter is especially the case when the project idea comes “from below” (local planners and stakeholders) which is often the case with Norwegian road projects. Also, Norwegian Public Roads Authority (2012) believes that there is too much emphasis on the cost-benefit analysis and other technical analyses in the QA1 at the expense of the strategic perspective.

However, the evaluations find that with the QA1 scheme, the Ministries and central government have increased their influence on the choice of concept, as compared with regional transport authorities and local stakeholders. The Ministry of Transport is now involved in the planning process at an earlier stage than before, and specifies the needs and societal objectives, before detailed solutions are discussed, typically in consultation with local stakeholders. Municipalities on the other hand might look with some skepticism at QA1 as a technocratic system that can override local wishes

and ideas.

Experience also shows that QA1 as a basis for the choice of concept is being taken seriously by policy makers and the recommendations are followed more often than before. An important reason is that policy makers are now involved before the political pressure to choose specific projects has yet occurred. The Ministry of Finance believes that a likely effect of the scheme has been that the government - by referring to the external reviewers’ recommendation - has “managed to say no” to investments that are “obviously not viable”. A simple counting shows that the government follows the reviewers’ recommendation in two thirds of the cases (Concept newsletter 2011). Furthermore, we see that the scope of the projects is often extended during or after the QA1 process. There is also reason to believe - but of course difficult to prove - that many of the “worst” (poorly justified) project ideas are now screened out before they reach the QA1 process.

Another study performed by the Concept program researchers, Whist and Christensen (2011), looked at 23 projects in terms of the decision making processes that took place in the front end. A striking result was that the projects that had undergone a thorough problem analysis in the front-end (not necessarily QA1 but could be a similar analysis) stood out as more relevant and sustainable than other projects. The problem analysis is a fundamental part of QA1.

This suggests that also the QA1 review has had a tremendous positive effect. In the coming years a thorough evaluation of the effects of QA1 projects will be conducted.

7.3 Spill- over effects

Another and probably even more significant feature of the QA scheme is the spin-off effects it seems to have had in both government and the private sector. Since

it was introduced we have seen a growing awareness of the need for improved practices in the field of cost estimation and budgeting, risk assessment and strategic planning. There is a growing awareness regarding improving the quality of decision documents, broadening the scope of analysis to include alternative concepts, and avoiding too detailed analysis at an early stage. This has also proliferated into the consulting and construction industry, who in their role as suppliers to the public clearly respond positively to new procedure and requirements in these fields. We can also see that front-end management has become an issue within the community of professionals in project management. Training courses are now being offered by a number of institutions and consultants. Improved practices have also been adopted and institutionalized by different government agencies.

We also observe that sectors not subject to the QA scheme, such as the hospital sector and the energy sector, have voluntarily adopted a variant of the scheme in recent years. The same applies to Oslo municipality that has introduced a quality assurance scheme based on the Ministry of Finance scheme.

Over the years, it has also been considerable opposition in some parts against the regime, which has gradually leveled out. In some cases for instance the transport sector, it has persisted. It is claimed that the QA process delays the project and that improved competence in the agencies is making the QA unnecessary. The call now is for more selective use of the more rigorous types of analysis, and for more flexible practices. But at the same time we see that the type of procedures introduced by the regime is being adopted increasingly also for smaller project in different sectors.

8 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. 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 trailing research and by establishing an arena for ex-

change of experience. This is in the sense of meetings at regular intervals headed by the Ministry of Finance, with representatives of ministries, agencies, reviewers and researchers. This has facilitated openness and co-operation 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 (operational project success).

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 Cabinet. The reason 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 is being used effectively (strategic project success). Lifting the decision from the administrative to the political level provides a distance from narrow perspectives and professional biases. It also introduces authority that seems 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 social cost-benefit analysis, might prove significant in the aim to identify relevant alternative concepts and select the most viable project alternative.

In terms of deliberate 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 to reduce large cost overrun as we have seen in the past.

9 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.

The Norwegian QA scheme aims to improve both operational and strategic project success. As shown in this paper, there are clear indications that the scheme has had a positive effect on both levels. However, it is not possible to conclude that this project governance regime is suitable for all countries, types of project, institutional context, over time, etc. 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.

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