INCENTIVES IN PUBLIC INVESTMENT PROJECTS

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ABSTRACT

The purpose of this paper is to describe incentives peculiar to Norwegian public investment projects with initial cost estimates above 65 million euro. Each year the Norwegian Parliament initiates such major public investment projects for a total of approximately 2,5 billion euro. This is a considerable amount, and it is important that these funds are channeled to the projects returning the most value. We have investigated the incentives of the project organisations, the agencies and companies carrying out an external quality assurance of time and cost estimates.

Our results are from a literature review combined with interviews of key personnel in the decision making hierarchy of public investments at the project, agency and ministry level. We also investigated how to make sure that participants in public investment projects do not have diverging interests. The work was finished in February 2004.

Even though the project organisation has sufficient project management competence, there are no guarantee that public investment projects will be successful. The project organisation and the agencies involved must have incentives to use their competence in ways that are of most benefit to the project. The agencies must have incentives to do the same. Likewise, the external quality assurance companies must be motivated to give the optimal advice to decision-makers at the various levels.

Agencies can motivate individuals at the project level by using incentive mechanisms related to the consumption of money and time. For example, each time a milestone is reached a bonus is granted. Incentives can also be given through a formal career system applied on individuals. Based on a thorough and continuously running evaluation of efforts, the agency can adjust offered wages and career opportunities for their employees.

The ministries that oversee the agencies have few opportunities to motivate their agencies with economic incentive mechanisms when compared with what opportunities the agencies have to motivate their project organisation. Ministries reward agencies by letting them maintain ownership of projects kept under control, and punish them by taking over projects when control is lost. We recommend that the agencies in conjunction with the Ministry of Finance develop procedures so that the quality assurance companies are made responsible for the quality of their work.

KEYWORDS

Incentives, motivation, project organisation, public projects

INTRODUCTION

As of June 2000 the Norwegian Ministry of Finance has demanded an external quality assurance of cost and time estimates for every public investment project with a cost estimate exceeding 65 million euro. The quality assurance has to be done by one of four pre-qualified quality assurance companies, that are hired by the Ministry of Finance. The Ministry of Finance has two main reasons for this demand. First, they want to ensure that they fund the most gainful projects first. Secondly, they want to avoid cost and time overruns.

The Ministry of Finance initiated the research programme Concept in 2002. It is designed to conduct trailing research on the quality assurance regime, focusing on uncertainty analysis, portfolio management and project concept development. Over the years from 2002 till 2008 the programme will receive a total of approximately 4 million euro. This paper summarises initial findings and results from the Concept work package; “Incentive Mechanisms and Contract Philosophy” (Dalen, Lædre and Riis, 2004).

Stakeholders with diverging interests increase possibilities for time and cost overruns in a project. Incentives to the stakeholders can be used to suppress negative effects of diverging interests. There are different types of incentives, which can manifest as rewards or punishments. We have studied incentives related to monetary bonuses, prestige, career opportunities or the possibilities for a new assignment.

Public projects differ from projects in the private sector (Williamson, 2000). We focused on the incentives peculiar to public projects, and studied the incentives of the project organisation, the agencies and the ministries that carry out the projects. We also studied the incentives of the external quality assurance companies when evaluating public projects.

Most of the major public building projects in Norway subject to the quality assurance regime are carried out by the Norwegian Directorate of Public Construction and Property, Statsbygg. Statsbygg is organised under the Ministry of Labour and Government Administration. Figure 1 shows that there are many relationships that involve various incentives.

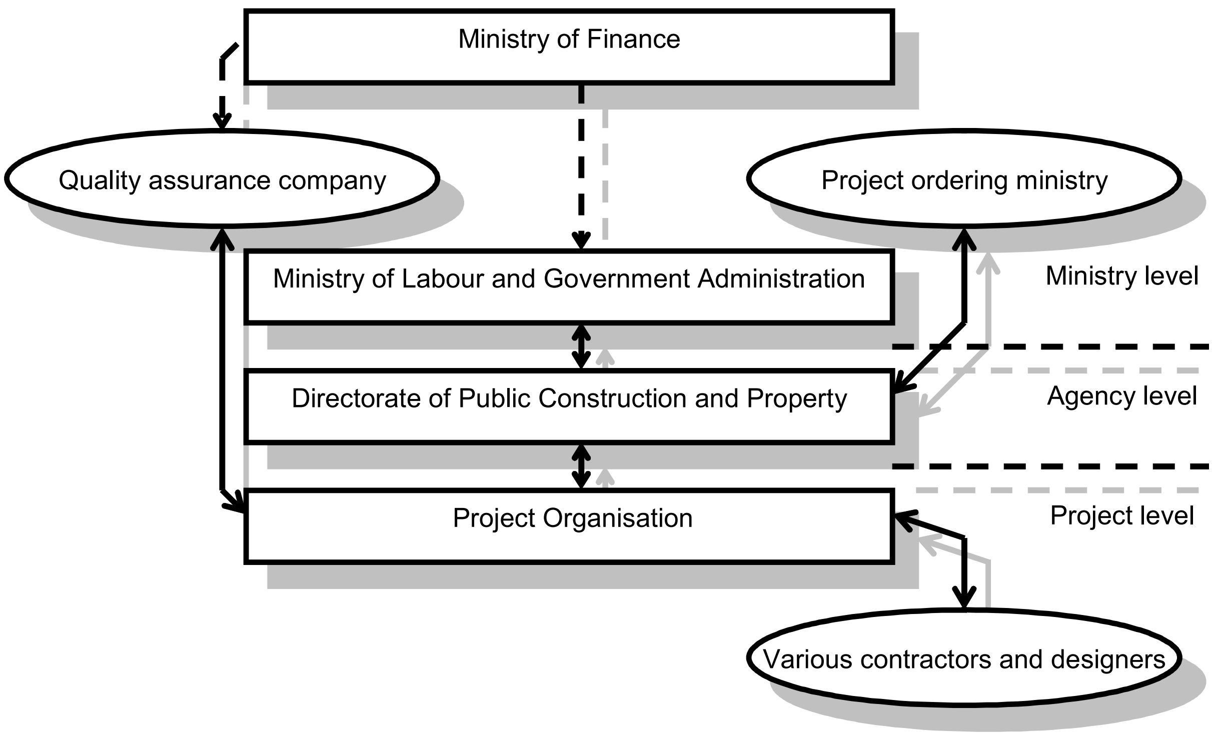

Figure 1 There are many relationships with various incentives in Norwegian public construction projects. The ordering ministry and the contractors are considered to be external.

Most of the major public road projects in Norway are carried out by the Norwegian Public Roads Administration, Statens vegvesen. Statens vegvesen is placed under the Ministry of Transport and Communications. There are three relationships from ministry level to project level for road projects. Statens vegvesen is divided in five regions, with an administration coordinating activities in each region. We have chosen to pay little attention to the role of the region administrations, because they work mostly as coordinators.

METHOD

The approaches examined in this work package manifested from a research symposium held by the Concept programme in September 2003. The aim of this symposium was to facilitate an arena where researchers and representatives of owners of large public investment projects could exchange experiences and focus on solutions to improve quality-at-entry of major public projects. Five of a total of 25 professional exchange sessions at this symposium regarded incentives and contract philosophy.

The sessions documented the current as well as the future research needs regarding front-end management of public projects.

We started this study with a literature review to systemise and impart relevant knowledge, and to point out what is relevant for managing major public investment projects. To complement the results from the literature review, we carried out interviews.

We interviewed 12 professionals from the decision making hierarchy of public investment projects at the ministry, agency and project level. The respondents were proposed respectively by Statens vegvesen and Statsbygg.

All interviews followed the structure of an interview guide, that focused on the relationship between ministries, agencies and projects. Special attention was given to incentives and success factors.

The interviews took place at the premises of the respondents, and lasted between 1,5 and 2,5 hours. Every interview but one were taped, and a transcript of each tape was sent to the respondents for their approval.

INCENTIVES AT PROJECT LEVEL

It is advantageous for the project organisation, that communicates with the contractors, to have time and cost estimates as high as possible (Finansdepartementet, 1999). Maximising frames for time and cost available to the project can cause even average performance to be rewarded.

Certainly, use of individual incentives as reward or punishment can have unwanted effects (Fehr and Falk, 2002). For example, individual incentives can move focus towards time and cost, and away from all other aspects. Another unwanted effect is that immediate punishment of individuals can legitimate poor efforts during project execution (Torsvik, 2003).

According to the respondents, agencies can use incentives to reward or punish individuals in the project organisation. All of the project managers we interviewed expressed that they can earn a lot more money if they chose private sector, but the responsibility and challenges they faced in public investment projects made them want to stay.

The existing incentive at the project level in Statsbygg and Statens vegvesen is the opportunity to build a career for oneself. The selection of members to project organisations tends to depend on who is available at that moment and personal relations, and not only on who performs best. In the current situation, these agencies do not have the possibility to offer incentives to individuals.

Incentives can be used to punish individuals that has not performed properly, and degradation can be an effective punishment. Individuals can also be transferred from the project organisation working with project management to the technical staff of the agencies.

Most of our respondents claimed that incentives to the project organisation as a whole are not suited in public projects, because it can lead to sub-optimising. For instance, the project organisation participates in the front-end phase when the different project alternatives are evaluated. The organisation is not necessarily rewarded for recommending the alternative most gainful to the public. Some of the alternatives may offer better possibilities for rewards to them.

Individual incentives directly related to time and cost can attract project managers that are clever to complete projects within preset time and cost estimates. Incentives to individuals can at the same time drive off project managers with other motives than guaranteed compensation. Sometimes the project manager must be able to see the project in its entirety, and not focus only on time and cost estimates. If a change in scope increases the benefit of the project, it can make sense to implement the change even if it makes the total cost exceed the original cost estimate and cause a cost overrun. The use of individual incentives is most appropriate for projects with straightforward goals and objectives.

An alternative to individual incentives related to time and cost is a formal career system based on individual records. The use of a formal career system implies that pay and tasks of individuals are determined by past achievements. The evaluation of former individual achievements can for example be combined with ex post project evaluations. Such a system will demand an evaluation system that evaluates achievements that can be hard to measure. In order to make the evaluations of the individuals trustworthy and reliable, the ex post evaluation should be carried out by people independent of the project organisation.

Job opportunities and career possibilities based on a wide evaluation of former individual achievements can attract competent personnel and motivate them to stay with the project organisation. A formal career system should also reward individuals whose behaviour benefits the agencies in the long run. Such a system can attract personnel who focus not only on individual incentives.

INCENTIVES AT AGENCY LEVEL

The current situation at the agency level is that if they fail in delivering a project, the media will provide negative publicity. The negative publicity can be followed up by questions about whether to keep or shut down the agencies. The only reward they can get is that they keep control of their projects.

The ministries have limited possibilities to reward or punish the respective agencies under their control. Agencies have more possibilities to provide incentives to individuals in the project organisations. The incentives for an agency are related to the delegation of responsibility and assignments from the ministry to an agency. A ministry can delegate responsibility and assignments to the respective agency, but the constitutional responsibility cannot be delegated.

New routines for which ministry that decide how to finish a project, can give incentives to put efforts in the front-end. If costs in the first phases are low and no information about future and unexpected costs is revealed, the ministry and the respective agency can stay in control of the project. If not, our suggestion is that the project control is transferred to the Ministry of Finance.

The ministry that ordered the project and the Ministry of Finance often have different views on what is required to finish the project. The ordering ministry is assumed to be willing to go further than the Ministry of Finance before terminating the project, because it may have developed a feeling of project ownership. The Ministry of Finance is assumed to be neutral when evaluating the benefit of the project. The evaluations of how beneficial the finished project will be will also differ by ministry (Tirole, 1994).

We suggest that the Ministry of Finance can come into control of project reserves and potential cuts in scope or quality if consumption of time and money becomes rampant. The Ministry of Finance is assumed to cut in scope or quality before using the project reserves. If the project is not brought back on track by this, total project control can be transferred to the Ministry of Finance.

THE INCENTIVES OF THE QUALITY ASSURANCE COMPANIES

Decision-makers do not always have the time and skills to gather and process information on complex issues. Instead, this task is often delegated to various experts (Gromb and Martimort, 2003). The decision-makers often rely on the quality assurance companies to acquire the necessary information, and that they give the adequate advice based on this information.

The quality assurance companies are driven by the incentive to get new assignments, and in order to generate work they have to perform to a level that meets expectations. There are often no other incentives related to their efforts. For example, there is no connection between the compensation to the external quality assurance company and how the cost estimate conforms to the total amount actually spent in a project.

Quality assurance companies are not rewarded for being creative or trying to develop the plans of the project organisations. If the quality assurance company are creative and such efforts fail, they can be punished by not receiving future work. If the company sticks to conservative and well known solutions used in other projects, they are not to be blamed if anything fails with regards to the incentives they face. Quality assurance companies are better off by sticking to past practices.

According to some of the interview respondents, a possible effect of the quality assurance regime is that project budgets can be increased. The quality assurance companies have incentives to increase the time and cost estimates, rather than to decrease them. If the estimates turn out to be too large, this is less problematic than if the estimates are too low and the final costs exceed the budget. It is acceptable that a project goes at or below budget. If costs exceed the budget, the quality assurance company can be put in a position where they have to justify and explain the reason why.

Additionally it can be said that if the quality assurance company overestimates the costs of a project, it hardly has any fatal consequences. Profitable projects may not be funded immediately, but they can still be funded later on. The consequence of overestimations of cost is more money spent on the actual project. With the current routines, projects are not rewarded for coming in under budget. Underestimating of costs can contribute to public funding of not profitable projects, and that these projects displace profitable ones.

If the quality assurance company knows that the project will be managed by a highly motivated and competent organisation, it can be tempted to give recommendations without gathering enough information. Instead, they can trust the project organisation to make it a successful project.

The companies carrying out the external quality assurance of major public investment projects reveal relevant information and reduce the possibilities for so-called strategic budgeting. They give an external evaluation of the decision basis. The advantages related to the quality assurance regime are definitely larger than the disadvantages.

It can be difficult to make the quality assurance companies stay responsible for their advices throughout the project. They have to trace and at the same time use all relevant information available. An ex-post evaluation carried out by external parties can contribute to evaluating the deliverance from these companies.

SUMMING UP

Every year 2,5 billion euro is spent on major public projects in Norway, and it is important that these projects are carried out in an efficient and productive way. The personnel in the decision making hierarchy often have differing success criteria and incentives, and that causes conflicts of interests. Diverging interests create a management problem.

For major public projects, incentives to the project organisation as a whole are problematic. Individual incentives are better suited. As a result, we recommend a formal career system, that rewards individuals with a focus on all project factors, and not just time and costs. The reward will be higher compensation and challenging job assignments.

The ministries can reward the agencies by letting them keep control of their projects. The corresponding punishment implies that the Ministry of Finance gradually takes over the project if the ministry and the respective agency are loosing control. It is assumed that the Ministry of Finance prefers to make cuts in scope or quality before using project reserves. Bonus payments to an agency related to time and cost is not a suitable reward.

It is more convenient for the external quality assurance companies to overestimate than to underestimate project costs. It is easier for the personnel involved if the project is completed at or below budget, than if the costs exceed the budget. In worst case situations overestimating costs can prevent or postpone funding of profitable projects. Underestimating of costs can cause not profitable projects to displace profitable ones. We recommend that the agencies in conjunction with the Ministry of Finance develop procedures so that the quality assurance companies are made responsible for the quality of their work. Their final salary can for example be determined by an ex-post evaluation.

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