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Gro Holst Volden and Knut Samset

A Close-up on Public Investment Cases. Lessons from Ex-post Evaluations of 20 Major Norwegian Projects

Concept report no. 52





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English summary

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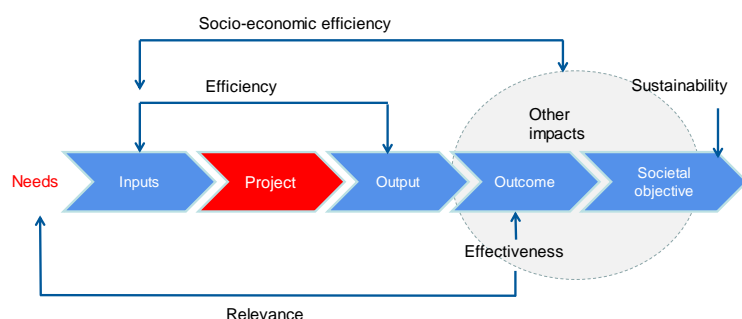
English Summary

The Norwegian scheme for external quality assurance of the decision basis in major public investment projects– the QA scheme – was introduced year 2000. Since then, more than 200 projects have been processed under the scheme. In the years to come, more and more of these will be completed and put into operation. In order to learn from them, they will be evaluated, with a focus on both implementation and their effects on users and on society as a whole. For this reason, the Concept programme has tested a model for post-evaluation on 20 so-called QA projects. In this meta-evaluation, we present an initial overview of the aggregated findings, as well as an assessment of the evaluations, the evaluation model, and the reasons behind the need for better guidelines.

The Concept evaluation model

The evaluations should cover all relevant aspects of the investment cases, while at the same time being simple to implement. The decision fell on a broad, goal-oriented evaluation model recommended by international organizations, including the OECD, in combination with economic analysis. Our model thus covers six general evaluation criteria:

1. *Efficiency*. This is a measure of the project's implementation: how effectively the project organization has converted resources to deliveries. This includes an assessment of the project's *outputs* in terms of cost, time and quality.
2. *Effectiveness*. This concerns whether the agreed *outcomes* (or first-order effects) were reached and to what extent the project contributed to this outcome.
3. *Other impacts*. This includes all effects beyond the intended effects (the outcome) that can be attributed as the result of the project, positive and negative, short-term and long-term, and for different stakeholders and affected parties.
4. *Relevance*. A project is relevant if there is a *need* for it. Project relevance is measured in relation to needs and priorities as expressed politically and by stakeholders and affected parties.
5. *Sustainability*. A project is sustainable if its positive effects are likely to persist throughout its lifetime.
6. *Socio-economic efficiency*. This can be measured in terms of either the users' willingness to pay in relation to cost (profitability) or the outcome in relation to cost (often denoted as cost-effectiveness).



The evaluation team starts by checking and, if necessary, calibrating the results chain (see figure) and goals on each level. There must be logical consistency, and the goals at each level must be realistic in terms of their level of ambition. Thereafter, the six evaluation criteria are operationalized in terms of the specific issues to be investigated – the ‘evaluation questions’ or ‘indicators’. After the relevant data have been collected and analysed, the evaluator will provide an overall assessment of the success on each of the six evaluation criteria. The score scale ranges from 1 to 6, where 1 is the lowest score (completely unsuccessful) and 6 is highest (very successful).

The evaluated projects

The evaluated projects are some of the country’s largest public investment projects in the transport, building construction, defense, and ICT sectors. The projects need to have been in operation for about five years. This study examines about half of the QA projects that have been finalized to date and therefore provides a reasonably representative picture. Details of the 20 evaluated projects, the time of their evaluation, and who conducted the evaluation are listed in the table below.

No.	Project	Sector	Start (Yr)	End (Yr)	Eval.	Evaluator*
1	Border control Svinesund	Building	2004	2005	2012	SINTEF
2	Asker–Sandvika double track	Railway	2001	2005	2012	VTI
3	E18 Momarken–Sekkelsten	Road	2005	2007	2012	Concept
4	Skjold class MTB	Defence	2003	2013	2012	Scanteam
5	E6 Riksgr.–Svingenskogen	Road	2002	2004	2014	COWI
6	Svalbard Research Park	Building	2003	2005	2014	Concept
7	Lofoten mainland connection	Road	2003	2007	2014	UiN
8	Eiksund mainland connection	Road	2003	2008	2014	Menon
9	NAV ICT Basis	ICT	2006	2010	2014	NIBR
10	University college campus	Building	2003	2006	2015	SINTEF
11	E16 Klofta–Nybakk	Road	2005	2007	2015	Urbanet
12	Rv 519 Finnfast	Road	2005	2007	2015	Menon
13	Sandnes–Stavanger railway	Railway	2005	2009	2015	Oslo Economics
14	Regional exercise field East	Defence	2002	2012	2015	Prokonsult
15	Perform ICT procurement	ICT	2008	2012	2015	Menon
16	Halden Prison	Building	2006	2010	2016	Oslo Ec.
17	New Opera House, Oslo	Building	2005	2008	2016	HRCconsult
18	E6 Svingenskogen–Åsgård	Road	2005	2008	2016	Menon
19	E6 Åsgård–Halmstad	Road	2004	2005	2016	Menon
20	Gevingsåsen railway tunnel	Railway	2009	2011	2017	Concept

* In some cases, the evaluation was carried out by a consortium.

These are the first projects that underwent external quality assurance of their cost estimates and management basis (QA2) when the scheme was introduced in the year 2000. None of them has undergone quality assurance of the choice of conceptual solution (QA1) which was introduced later, in 2006.

The meta-evaluation presented here is based mainly on the 20 evaluation reports. In addition, we organized a focus group meeting with 11 of the evaluators. We presented our preliminary findings and assessments, and they shared their experiences and assessments of the methodology, the evaluation scheme, and the need for guidance. In addition, the two authors have drawn on their own experiences of the process, from commissioning, follow-up and quality assurance of the evaluations, as well as participating in three of them.

Aggregated results

Our key finding is that the projects performed well in an operational perspective (*efficiency*), which means that they were finished within budget and on time, and were time- and cost-efficient. There is much to indicate that this can be attributed to the QA2 scheme. Perhaps more surprising is that the projects also scored well on the tactical and strategic criteria. In terms of averages for all projects, the scores were between 4 and 5. A clear majority of the projects scored 5 or 6 on *relevance*. This indicates that there was wide agreement among the evaluators that the investments were in line with the priorities and needs in society. Most projects also scored well on *effectiveness* and *sustainability*, which indicates that expectations had largely been fulfilled and that there is good reason to believe that the positive effects of the projects will last over time. The results regarding the projects' *Other impacts* were somewhat weaker. This was due to the negative external effects of some projects, and the lack of positive external effects in others. The projects scored lowest on *socio-economic efficiency*. At the same time, we noted that a number of projects considered unprofitable scored positively on relevance. This indicates that the market was not the determining factor in these publicly initiated projects, but rather other considerations, as expressed by political actors and processes.

Sector	Projects	Efficiency	Effective- ness	Other impacts	Relevance	Sustain- ability	Socioec. efficiency
Construction	5	5,4	4,2	4,6	4,6	4,8	3,8
Defense	2	4,5	4,5	4,5	4,5	3,5	3,5
ICT	2	5,0	5,5	4,5	4,0	5,5	4,0
Railway	3	4,3	3,3	4,0	4,7	4,7	2,7
Roads	8	4,4	5,3	4,3	4,6	4,5	5,3
Average		4,7	4,7	4,4	4,6	4,6	4,2

Although the number of projects is small, the table above shows some interesting sectoral differences. In terms of efficiency, the building construction sector performed well, while the transport sector (road and rail) performed somewhat weaker. Further, buildings and railway projects scored low on effectiveness and profitability, in contrast to road projects, which scored better on both criteria. It should be noted, however, that the road projects were more limited in scope and had less ambitious objectives, while the buildings and railway projects had goals that required larger and more integrated efforts, also beyond the projects themselves. This finding illustrates the importance of considering what is required when setting ambitious goals.

Experience from using the evaluation model

Experiences of using the model were generally positive. In combination, the six evaluation criteria provide a comprehensive coverage of the most essential aspects of success in projects. The process of disaggregating the criteria into specific indicators and then aggregating the findings to provide qualified answers to each of them provides a good balance between the need for standardization and the need for flexibility.

However, we have noted the potential for further improvements, with respect to, for example, the following:

- There must be a common practice for how to handle the situation when the budget agreed by Parliament is changed at a later date due to changes in project costs. The principle should be that the final cost is assessed against the original budget in all cases (fixed prices).
- Evaluations should provide more information about the justification and front-end development of the project, as well as the range of cost estimates before the budget is determined. This would be useful when evaluating the project's relevance and cost-effectiveness.
- The evaluator should make a thorough assessment of the project's goal hierarchy and not base their judgment on a flawed project logic. Any adjustments should be explained and presented as the evaluator's own interpretation.
- The quality of the evaluations depend on the validity and reliability of information. Triangulation between different information sources and methods may be necessary. Most evaluators do this, but some have potential for improvement.
- Another challenge is that evaluators interpret the strategic criteria differently and as partly overlapping. Other impacts, relevance and sustainability should be assessed independently and to the same extent, not merely as elements in a socio-economic analysis.
- An interdisciplinary approach is essential to avoid a skewed and inadequate assessment of the project. The majority of members in many of the evaluation teams were economists. A broader spectrum is thus necessary, and to ensure adequate evaluation experience.
- The use of scores is considered useful, but positive skewed results were suspected in some of the evaluations. There is a need for better calibration of the scoring system.
- Many of the evaluations had primarily focused on whether the projects had succeeded, and to a lesser extent on explaining the reasons and drawing lessons that would benefit new projects. The latter should be emphasized even more in future evaluations.

The way forward

The lessons learned from this meta-evaluation will result in certain amendments to the evaluation scheme, with clearer requirements regarding how evaluations are to be carried out, evaluators' qualifications, and further guidance on how the methodology and evaluation criteria are to be interpreted. Some issues that may be less essential in individual evaluations should nevertheless be included, since they may be useful in future meta-evaluations. In parallel with improving the evaluation scheme, there is a need to involve ministries and agencies to a greater extent, so that they can see the usefulness and learning potential of the evaluations. Easy access to key findings and conclusions is important. The latter is now ensured by, among other things, all evaluation results being available through an interactive presentation format on the Concept programme's website, where also the full reports can be downloaded.

However, this is just the beginning and in the years to come a large proportion of the many investment projects under the Norwegian QA scheme will be evaluated during their operational phase. This should give the answer to whether the patterns we have seen in this study also apply to a larger portfolio of projects. In the next round, the challenge will be to evaluate projects that have been through QA1, and the 20 evaluated projects discussed here will constitute a control group in an assessment of the impacts of the expanded scheme.

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Forskningsprogrammet Concept skal utvikle kunnskap som sikrer bedre ressursutnytting og effekt av store, statlige investeringer. Programmet driver følgeforskning knyttet til de største statlige investeringsprosjektene over en rekke år. En skal trekke erfaringer fra disse som kan bedre utformingen og kvalitetssikringen av nye investeringsprosjekter før de settes i gang.

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