



Concept Symposium 2018

Governing Megaprojects – Why, What and How

Ex post Evaluation of Large Public Projects – Experiences from Norway

Infrastructure projects in developed countries are rarely evaluated ex-post. Despite their number and scope, our knowledge about their various impacts is surprisingly limited. The Concept Research Program has argued that such projects must be assessed in a broad perspective that includes both operational, tactical and strategic aspects, and intended as well as unintended effects. A generic six-criteria evaluation framework is suggested, inspired by a framework frequently used to evaluate development assistance projects. The criteria are: efficient implementation, effectiveness, impact, relevance, sustainability, and value for money. The framework is tested on 20 Norwegian projects from various sectors (transport, defense, ICT, buildings). The results indicate that the majority of projects were successful, especially in operational terms, possibly because they underwent external quality assurance up-front. It is argued that applying this type of standardized framework provides a good basis for comparison and learning across sectors. It is suggested that evaluations should be conducted with the aim of promoting accountability, building knowledge about infrastructure projects, and continuously improve the tools, methods and governance arrangements used in the front-end of project development.



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The Concept Symposia on Project Governance

The Norwegian Ministry of Finance and the Concept Research Program hosts every second year a symposium on project Governance. Project governance, in brief, is concerned about investments and their outcome and long-term effects. In view of the problem at hand, the aim is to ensure that the best conceptual solution is chosen, that resources are used efficiently and anticipated effects realized. Resource persons from ministries, governmental agencies, academia, international organizations, and industry are invited. In order to facilitate professional exchange and direct communication between participants, the number of individuals is restricted. The aim is to initiate further international cooperation and research on important issues related to project governance.

<https://www.ntnu.edu/concept/concept-symposium>



Ex post Evaluation of Large Public Projects

Experiences from Norway

Concept Symposium 7 Sept. 2018

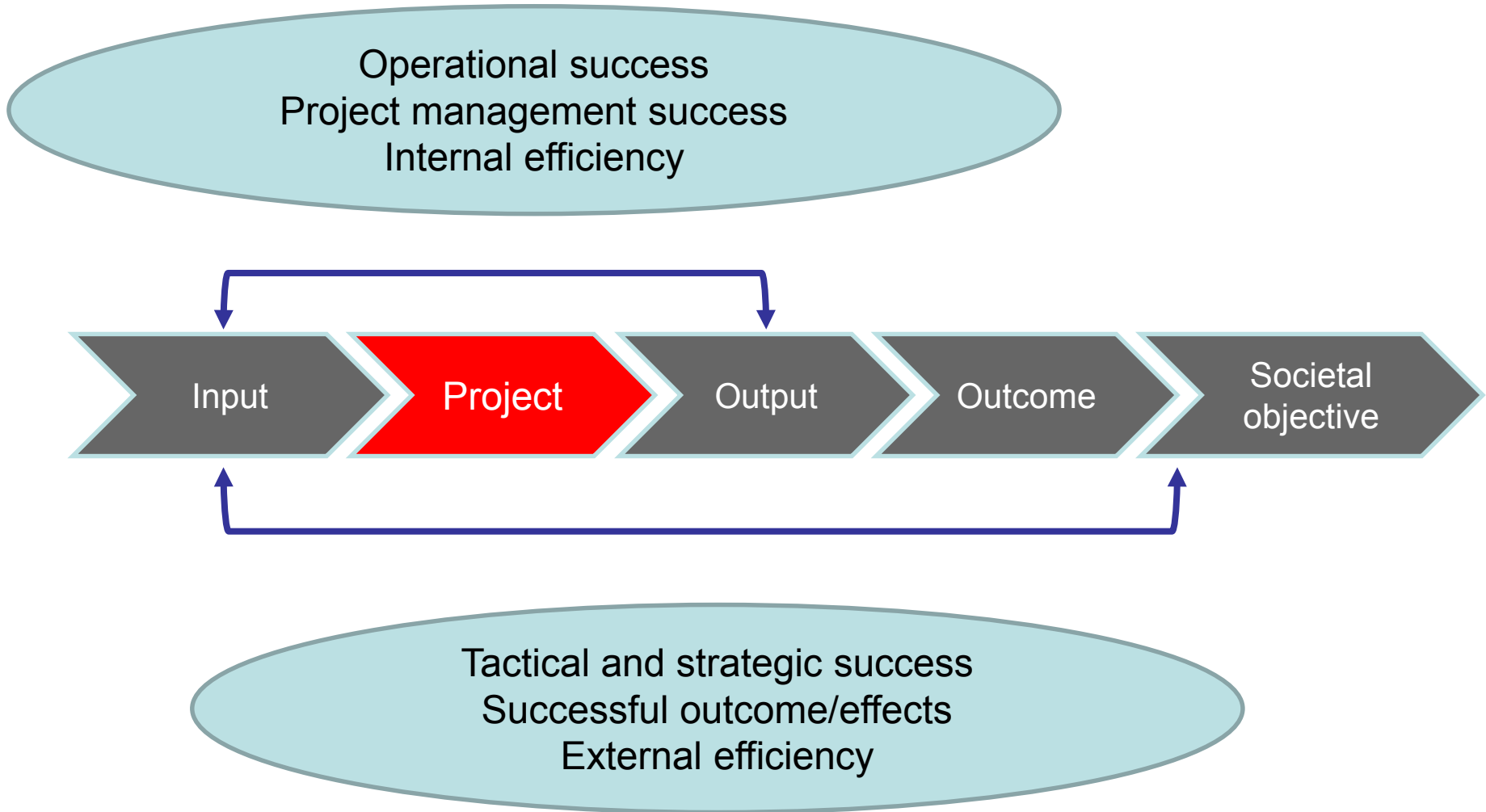
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Outline

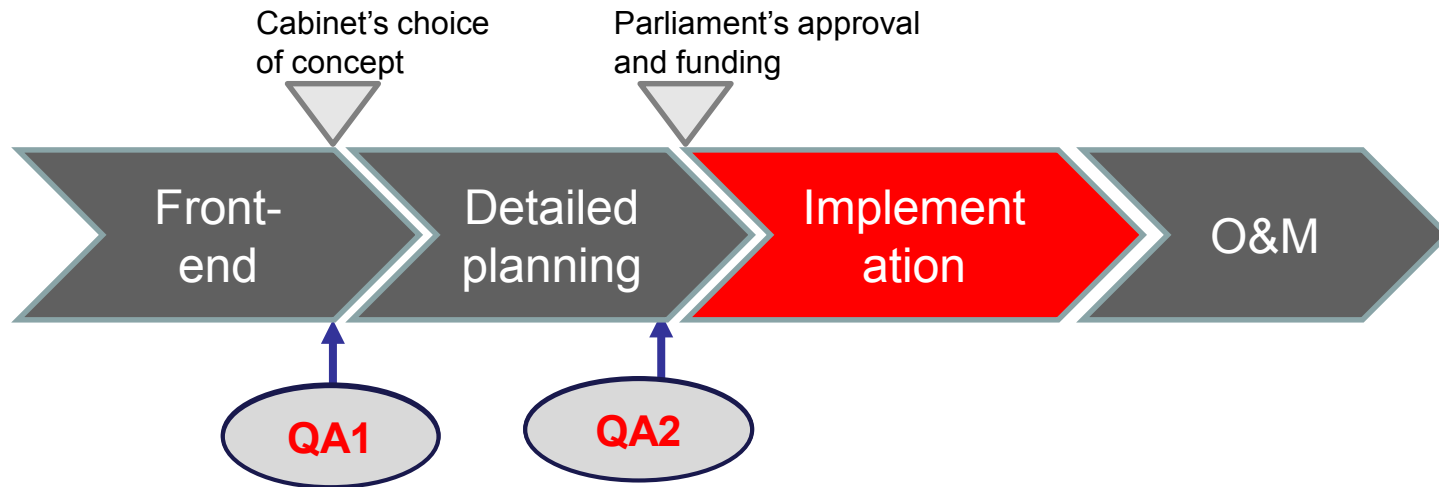
- Introduction: How to define the success of public investment projects
- A general framework for ex post evaluation of public projects
- Aggregated results based on 20 evaluations
- Lessons regarding the model and the evaluation process

Project success at different levels



The Ministry of Finance's QA scheme – aimed to ensure success at both levels

- Projects with an expected cost exceeding 750 mill. NOK



- Requires external quality assurance (QA) of decision documents at two stages. Decisions are elevated to the highest political level.
 - QA1 concerns needs assessments, possibility studies, CBA
 - QA2 concerns the cost estimate, contract strategy

Evaluation of investment projects ex ante and ex post

- Effective learning requires that projects are followed over time, from the front-end phase, through detailed planning, implementation and O&M



Many projects, but it takes time before they can be evaluated

Quality assurance (QA)	No. of projects	No. delivered	No. in operation for > 5 years	No. evaluated
No. of projects quality assured since year 2000	252	92	40	20
No. of QA2s (introduced year 2000)	177	92	40	20
No. of QA1s (introduced year 2006)	93	0	0	
No. of projects that have been through QA1 <u>and</u> QA2	25	0		

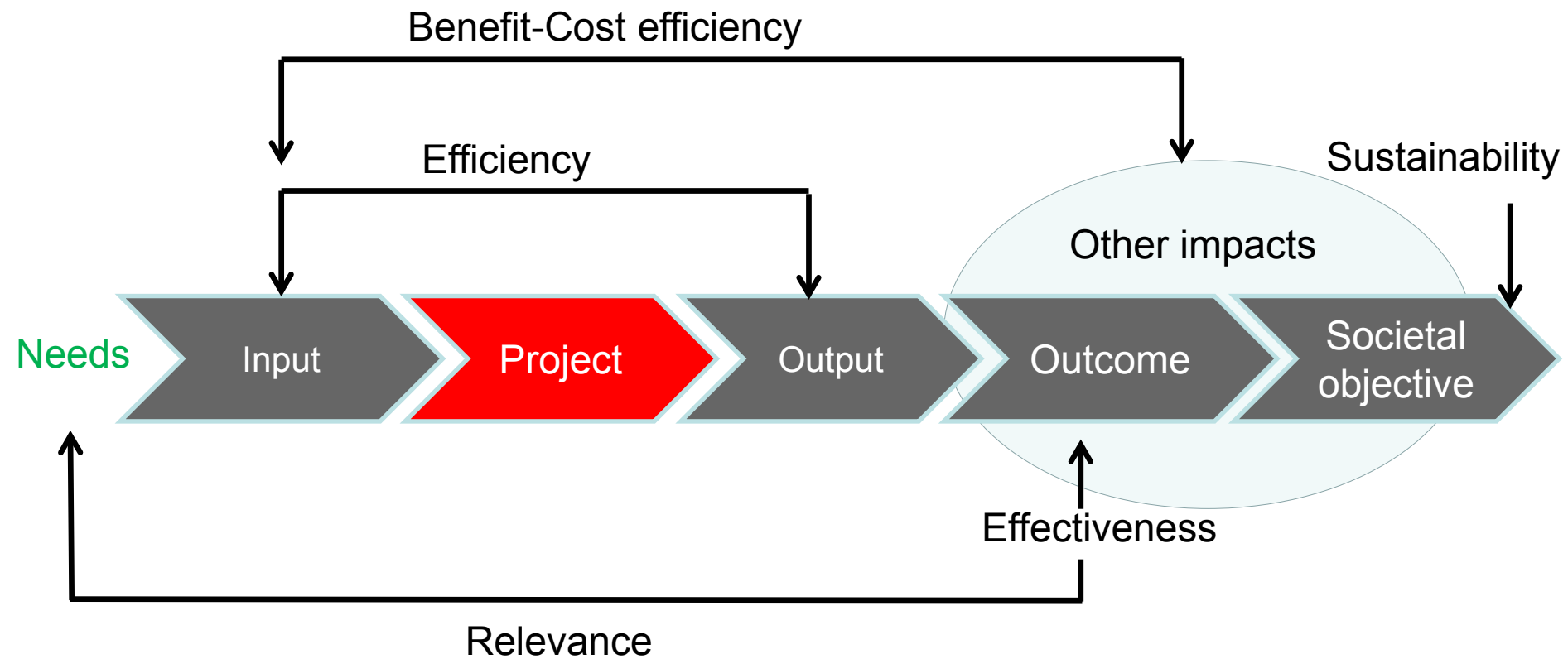


- Framework for project evaluation.
 - Concept report no. 30 presents the first version (2013)
 - Text book (Samset, 2015)
 - Guideline for evaluators (updated, 2017)
- Applied to 20 projects
 - Concept report no. 52 presents the meta-evaluation (2017)



The evaluation framework

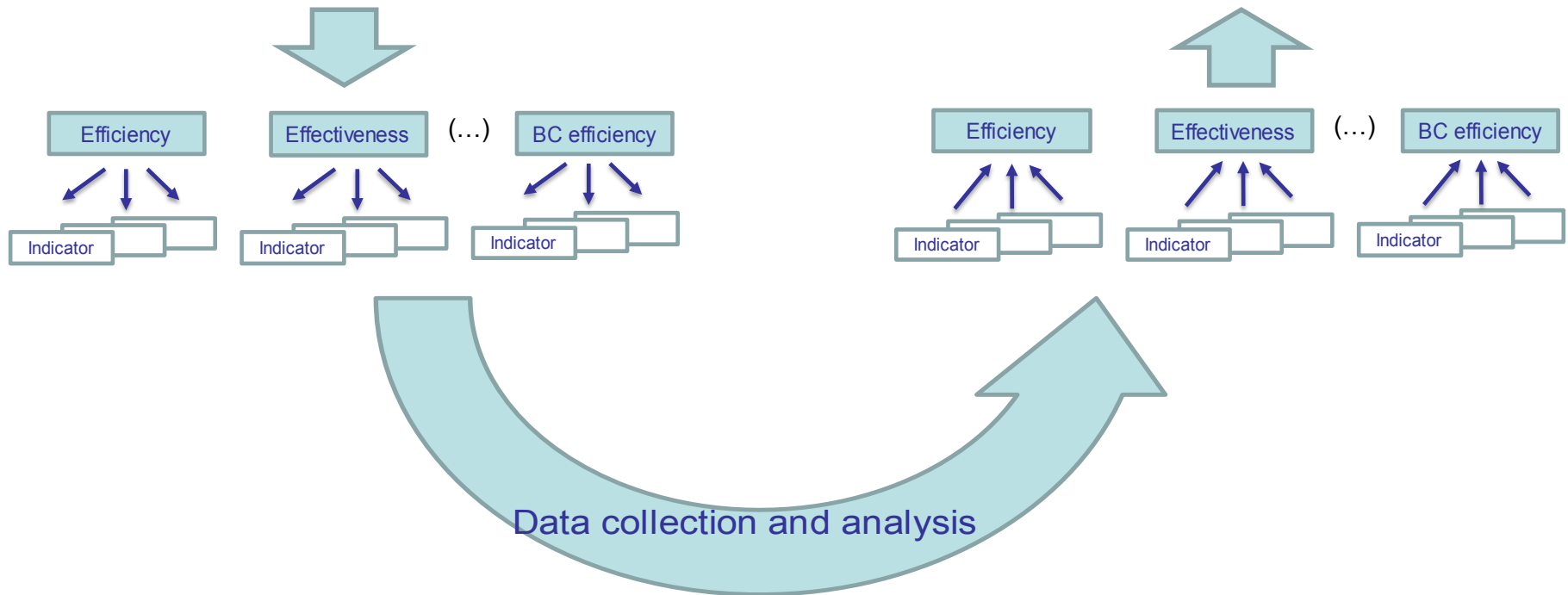
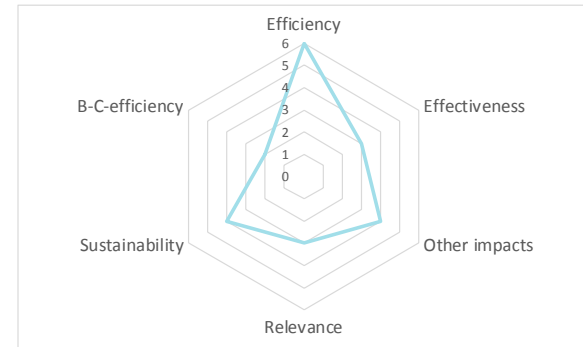
- We use a set of five criteria, commonly used in project evaluations by the UN and other institutions and aid organizations, and endorsed by the OECD Development Assistance Committee
 - efficiency,
 - effectiveness,
 - impact,
 - relevance
 - sustainability
- Benefit-cost efficiency as the sixth criterion.
- The model is...
 - Simple
 - Flexible enough to accommodate all types of projects...
 - ...but also sufficiently standardized to allow for comparisons.
 - Measures the success of projects in a broad perspective.



The evaluation process – disaggregation and aggregation

Choice of project and evaluation team.

The evaluation team reviews and, if necessary, adjusts the goal hierarchy



The evaluated projects

No.	Project name	Sector	Start (yr)	End (yr)	Eval. (yr)	Evaluator
1	Customs area, <u>Svinesund</u>	Building	2004	2005	2012	SINTEF; Concept
2	<u>Asker–Sandvika</u>	Rail	2001	2005	2012	VTI
3	<u>E18 Momarken–Sekkelsten</u>	Road	2005	2007	2012	Concept
4	<u>Skjold class MTB</u>	Defence	2003	2013	2012	<u>Scanteam</u> ; Concept
5	<u>E6 Riksgr–Svingenskogen</u>	Road	2002	2004	2014	COWI
6	Svalbard Research Park	Building	2003	2005	2014	Concept
7	<u>Lofoten fixed link</u>	Road	2003	2007	2014	<u>UiN; Nordlandsforskning AS</u>
8	<u>Eiksund fixed link</u>	Road	2003	2008	2014	Menon
9	NAV ICT Basis	ICT	2006	2010	2014	NIBR
10	<u>Østfold University College</u>	Building	2003	2006	2015	SINTEF; Concept
11	<u>E16 Kløfta–Nybygg</u>	Road	2005	2007	2015	<u>Urbanet</u>
12	<u>Rv 519 Finnfast fixed link</u>	Road	2005	2007	2015	Menon
13	<u>Sandnes–Stavanger</u>	Rail	2005	2009	2015	Oslo Economics; Atkins
14	Military area. <u>Østlandet</u>	Defence	2002	2012	2015	<u>Prokonsult AS</u>
15	Perform	ICT	2008	2012	2015	Menon; <u>Vivento</u>
16	<u>Halden Prison</u>	Building	2006	2010	2016	Oslo Economics; <u>Tyrlistiftelsen</u> ; <u>Sweco</u>
17	New opera house. Oslo	Building	2005	2008	2016	HR <u>Prosjekt</u>
18	<u>E6 Svingenskogen–Åsgård</u>	Road	2005	2008	2016	Menon; Concept
19	<u>E6 Åsgård–Halmstad</u>	Road	2004	2005	2016	Menon; Concept
20	<u>Gevingsåsen railway tunnel</u>	Rail	2009	2011	2017	Concept; SINTEF

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Evalueringresultater

Evalueringskriterier

Om Concept

Sorter etter: Navn

BokserTabellKart

Skriv inn søkeord

Søk etter: Navn

Dobbeltspor Asker-Sandvika

Sektor: Jernbane

Ferdigstilt: 2005

Sluttkostnad: 3735 mill.

Operasjonell suksess:

Strategisk suksess:



Jernbaneprosjektet omfatter utbygging av 9,5 km dobbeltspor på strekningen Asker-Sandvika samt arbeid på begge stasjoner og nytt signalanlegg. Mesteparten av strekningen går i tunnel. Prosjektet gjelder den ytterste av tre deletapper i utbyggingsprosjektet for nye dobbeltspor fra Asker til Skøyen (1...

Dobbeltspor Sandnes-Stavanger

Sektor: Jernbane

Ferdigstilt: 2009

Sluttkostnad: 2421 mill.

Operasjonell suksess:

Strategisk suksess:



Jernbaneprosjektet omfatter utbygging av 14,5 km jernbanespor mellom Sandnes og Stavanger. Dobbeltsporet ble bygget langs eksisterende spor med tilhørende tekniske anlegg, og en dobling av antall holdeplasser på strekningen.

E16 Kløfta-Nybakk

Sektor: Veg

Ferdigstilt: 2007

Sluttkostnad: 747 mill.

Operasjonell suksess:

Strategisk suksess:



Vegprosjektet E16 Kløfta-Nybakk er en delstrekning i prosjektet E16 Kløfta-Kongsvinger. Prosjektet omfatter bygging av 10,5 km smal firefeltsveg. Vegen ble bygget for å økt trafikksikkerhet og bedre trafikkavvikling mellom Kløfta og Kongsvinger, og videre til Sverige og Oslo.

E18 Momarken - Sekkelsten

Sektor: Veg

Ferdigstilt: 2007

Sluttkostnad: 583 mill.

Operasjonell suksess:

Strategisk suksess:



Vegprosjekt E18 Momarken-Sekkelsten omfatter bygging av en 6,2 km lang vegparsell på nye E18 riksveg. Prosjektet omfatter også utbygging av...

E6 Riksgrensen - Svingenskoen

Sektor: Veg

Ferdigstilt: 2005

Sluttkostnad: 850 mill.

Operasjonell suksess:

Strategisk suksess:



Veiprosjektet ny Svinesundforbindelse omfatter bygging av ny grenseovergang på E6 med 4,3 km firefelts motorvei på begge sider av grensen.

Eiksundsambandet

Sektor: Veg

Ferdigstilt: 2008

Sluttkostnad: 1062 mill.

Operasjonell suksess:

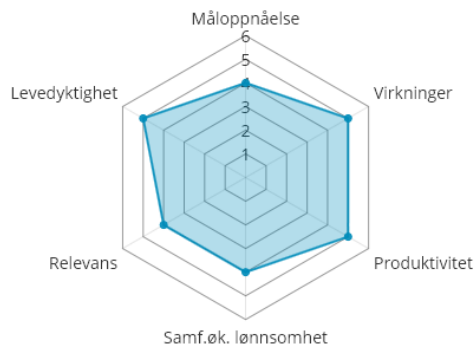
Strategisk suksess:



Eiksundsambandet gir fast veisamband mellom fire øykomuner og fastlandskommunene Ørsta og Ulstein på Nordmørelandet. Prosjektet har en lengde på 10,0 km.

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[Les om evalueringskriteriene](#)

Produktivitet

Prosjektet ble gjennomført innenfor revidert kostnads- og tidsramme. Halden fengsel har god funksjonalitet og kvalitet på bygninger og uteareal. Byggeprosjektet ble stoppet i en tidlig fase, men dette skyldes et ikke-tilfredsstillende forprosjekt, og prosjektet gikk deretter etter planen.

5 av 6 poeng. [Les mer »](#)

Måloppnåelse

Halden fengsel bidrar med økt fengselskapasitet som er svært godt utnyttet. Tilbudet til de innsatte er meget godt, men det har ikke vært mulig å påvise lavere sannsynlighet for tilbakefall sammenlignet med andre høysikkerhetsfengsler. Driftskostnadene er høye for dette konseptet.

4 av 6 poeng. [Les mer »](#)

Virkninger

Halden fengsel har blitt et utstillingsvindu der kriminalomsorgen får vist frem en praksis som etterlever prinsippene norsk straffegjennomføring skal bygge på. Aktivitetstilbud og sosial kontakt medfører positive virkninger for de innsatte. Halden fengsel oppleves som en god arbeidsplass for de ansatte, og har bidratt til å skape arbeidsplasser Halden-området. En negativ virkning er at fengselets beliggenhet er vanskelig tilgjengelig med kollektivtransport.

5 av 6 poeng. [Les mer »](#)

Relevans

Prosjektet anses som relevant i den forstand at det er stort behov for kapasiteten fengselet leverer og at det legger til rette for rehabilitering. Relevansen trekkes imidlertid ned av de høye investerings- og driftskostnadene, og en ser at nye fengsler ikke har kopiert denne modellen men i større grad vektlegger kostnadseffektivitet. Fengselet ivaretar de aller fleste interessegruppens behov.

4 av 6 poeng. [Les mer »](#)

Levedyktighet

Halden fengsel vurderes som levedyktig. Det vil være behov for fengselet i fremtiden, og bygget er fleksibelt med tanke på mulige utvidelser. Et usikkerhetsmoment er hvorvidt fengselet vil få beholde de nødvendige ekstrabevilgningene sammenlignet med andre fengsler på sikt, som kan påvirke tilbudet til de innsatte.

4 av 6 poeng. [Les mer »](#)

Samfunnsøkonomisk lønnsomhet

Den faktiske samfunnsøkonomiske lønnsomheten av prosjektet er svært usikker. Behovet for økt soningskapasitet i Norge gjør det nyttig og nødvendig å bygge et nytt fengsel. Men det er ikke funnet bevis for at Halden fengsel fører til lavere tilbakefall, samtidig som konseptet har høye kostnader, dette trekker vurderingen av lønnsomhet ned.

4 av 6 poeng. [Les mer »](#)

Findings: Public project success

	Efficiency	Effective-ness	Other impacts	Relevance	Sustain-ability	Benefit-cost eff.
Average score	4.7	4.7	4.4	4.6	4.6	4.2
Median score	5	5	4	5	5	4
Min.–Max. score	3-6	3-6	3-6	3-6	2-6	2-6
4 or better (no. of projects)	19	18	18	17	19	13
5 or better (no. of projects)	13	12	8	13	13	9



Findings: Public project success – by sector

Sector	Projects	Efficiency	Effective-ness	Other impacts	Relevance	Sustain-ability	Benefit-Cost 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

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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

Construction

- Excellent performance in operational terms, implying that high-quality buildings were delivered within time and budget.
- But limited outcome several years after completion, and low/ uncertain value for money. Some of the projects had very ambitious goals which takes more than a building to obtain.

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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

Railway

- Ok performance in operational terms (1 out of 3 had a cost overrun)
- All projects scored low on benefit-cost efficiency and on effectiveness. As for building projects, the goals were ambitious ('modal shift' in transport).
- But – the railway projects were closely aligned with government strategies, and thus were considered relevant and sustainable.

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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

Roads

- The road projects scored high on most criteria, very high on effectiveness and BC-efficiency. May to some extent be explained by trivial goals.
- More attention should be paid to negative side effects.
- Road projects experienced the biggest cost overruns, but also the biggest cost-underruns.

What can be learned?

- ✓ Project implementation was acceptable in most projects. Some public agencies should make efforts to obtain accurate cost estimates.
- ✓ The goal structure had weaknesses in several projects. Had to be re-established by the evaluators.
- ✓ Benefits are not realised automatically – it often takes more than the physical infrastructure. Large sectoral differences.
- ✓ Benefit-Cost efficiency is often weak. But there may be conflicts between BC and other goals. Important to identify such conflicts ex ante, and try to obtain a better balance.
- ✓ CBA should be more transparent. Ex ante CBAs (if they existed) were of limited value.
- ✓ The findings provide input to the appraisal and planning processes of future investment projects funded by national government, and the QA scheme as such.

Lessons regarding the evaluation model and procedure

- ✓ Evaluators find that the six-criteria model is fit for the purpose. Covers the important aspects of project success.
- ✓ Limited time and budget implies limitations with regard to scope and methodological rigour...
- ✓ .. but most evaluations hold an acceptable quality. Triangulation is the key-word.
- ✓ Some variation related to the interpretation of the criteria and overlap between them.
- ✓ Not all evaluation teams were sufficiently experienced in evaluation, and not all teams were broad enough in terms of perspectives and disciplines.

Lessons regarding the evaluation model and procedure

- ✓ The score setting was useful, but efforts should be made to ensure that results are better calibrated.
- ✓ There is a general risk that some scores were positively biased. Evaluators may be reluctant to criticise without hard evidence, but willing to mention a positive, but uncertain issue.
- ✓ The solution is clearer guidelines applying to all evaluators.
- ✓ The review provided useful experiences and a solid basis for consolidating the model and practice.



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