



Concept Symposium 2018

Governing Megaprojects – Why, What and How

Cost Escalation before the Formal Decision to Build

This presentation investigates an issue largely ignored in the academic literature on cost overruns, namely, cost escalation in the early project phase, before the formal decision to build is made. This is the phase of project planning that is referred to as the front-end phase in the literature. This is an important issue because unless cost estimates during the front-end phase are relatively accurate, the wrong projects may be selected for further development. If costs are underestimated, this may bias the decision making process. We first argue for why it is important to address cost escalation during the front-end phase of project planning. We then use Norwegian data to demonstrate the magnitude of cost escalations during the front-end phase of projects and in comparison to the implementation phase. We find that even in a sample of projects with relatively small cost overruns as in the case of Norway, there are substantial cost increases before the formal decision to build was made. This raises the issue of whether decisions and priorities taken at the early stages of project development are based on false information and whether this may lead to the wrong project concepts being selected.



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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>



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Concept research programme

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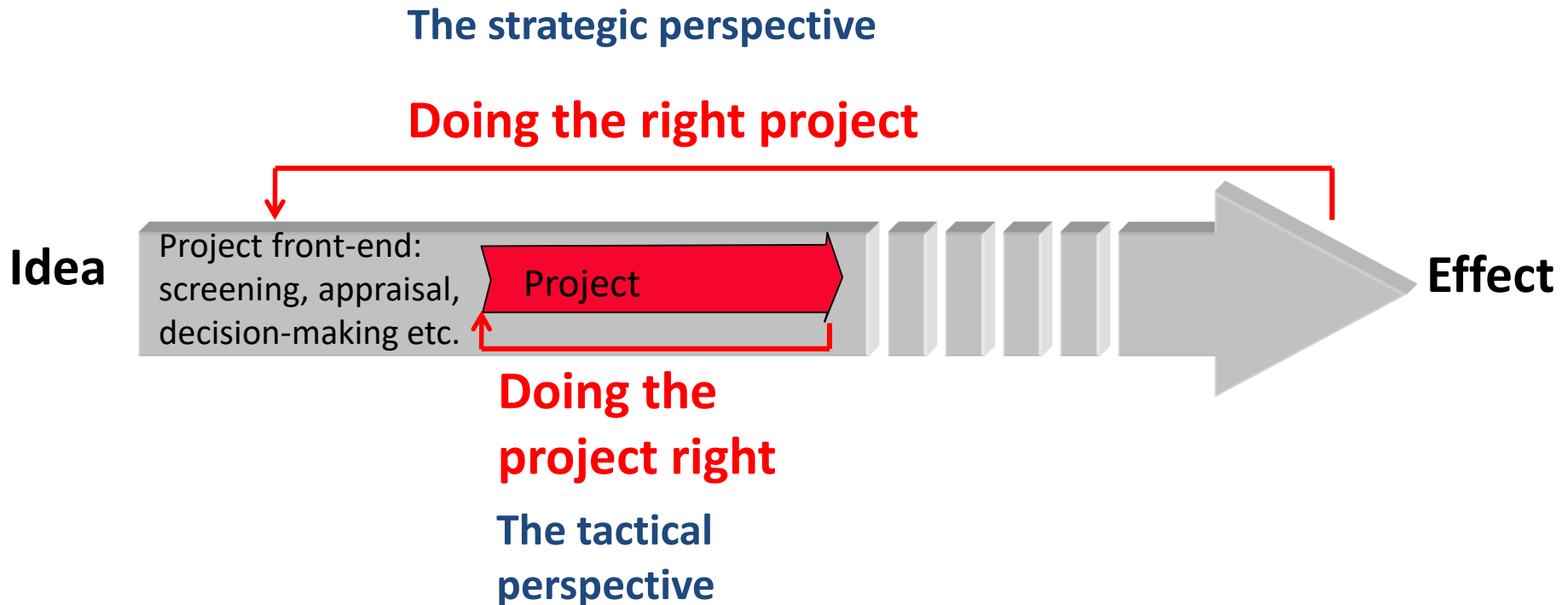
How much does it cost?

- Costs matter!
- The investment cost is usually the parameter which attracts the most attention throughout both the front-end phase and the implementation phase of projects
- It is suitable for making the responsible actors accountable, to gauge progress and performance, and to assess economic viability over time
- Cost overruns can be detrimental to:
 - Financial viability
 - Social viability
 - Long term relevance

Yet, cost overruns may be totally irrelevant for the viability of projects

- Many of the world's most iconic buildings and infrastructure assets experienced significant cost overruns during their execution
- In many cases, cost overruns may represent only a fraction of lifetime benefits or annual operating costs
- **It is better to implement a good project badly than a bad project well**

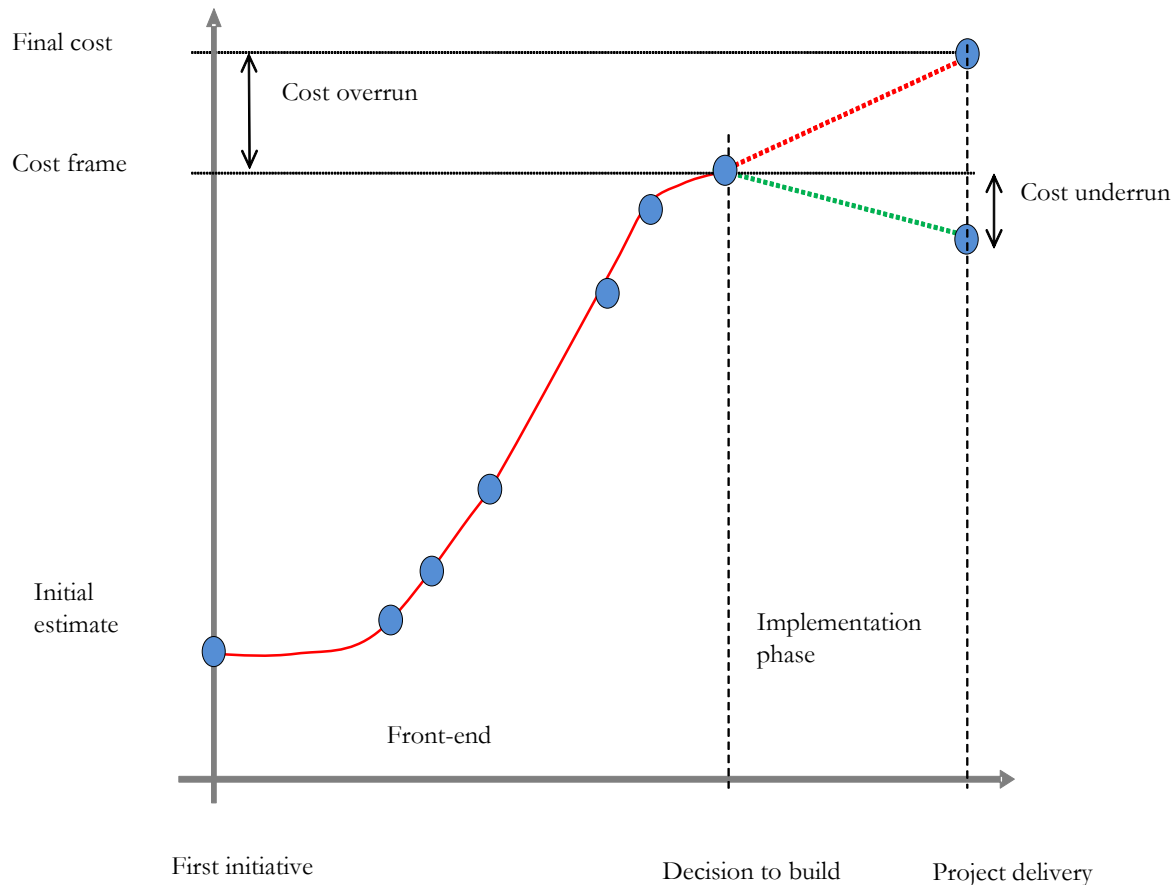
Two perspectives of success



That doesn't mean that cost overruns are unimportant or uninteresting

But....

The main increase in costs have often occurred before the formal decision to build

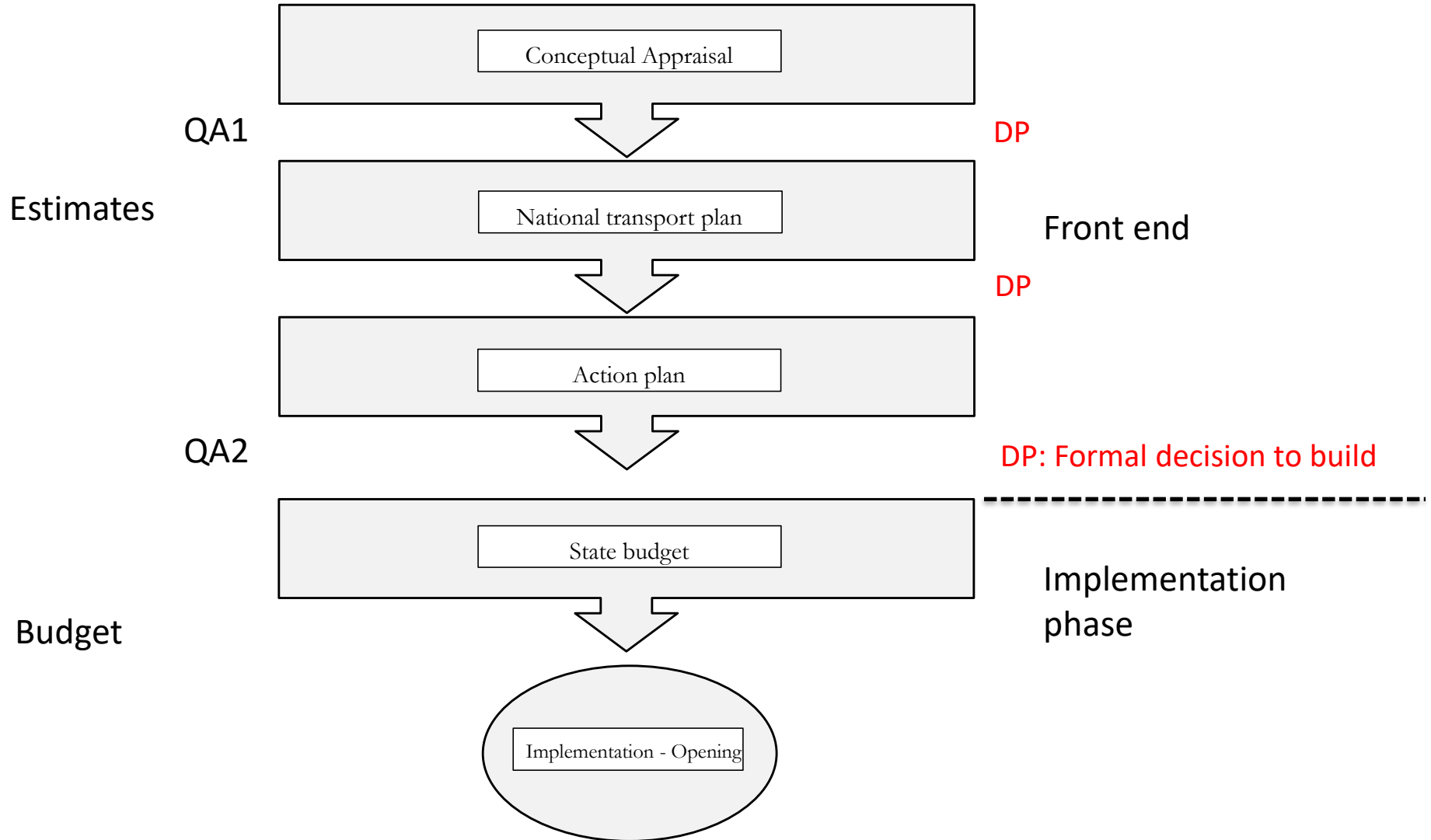


Why is this important?

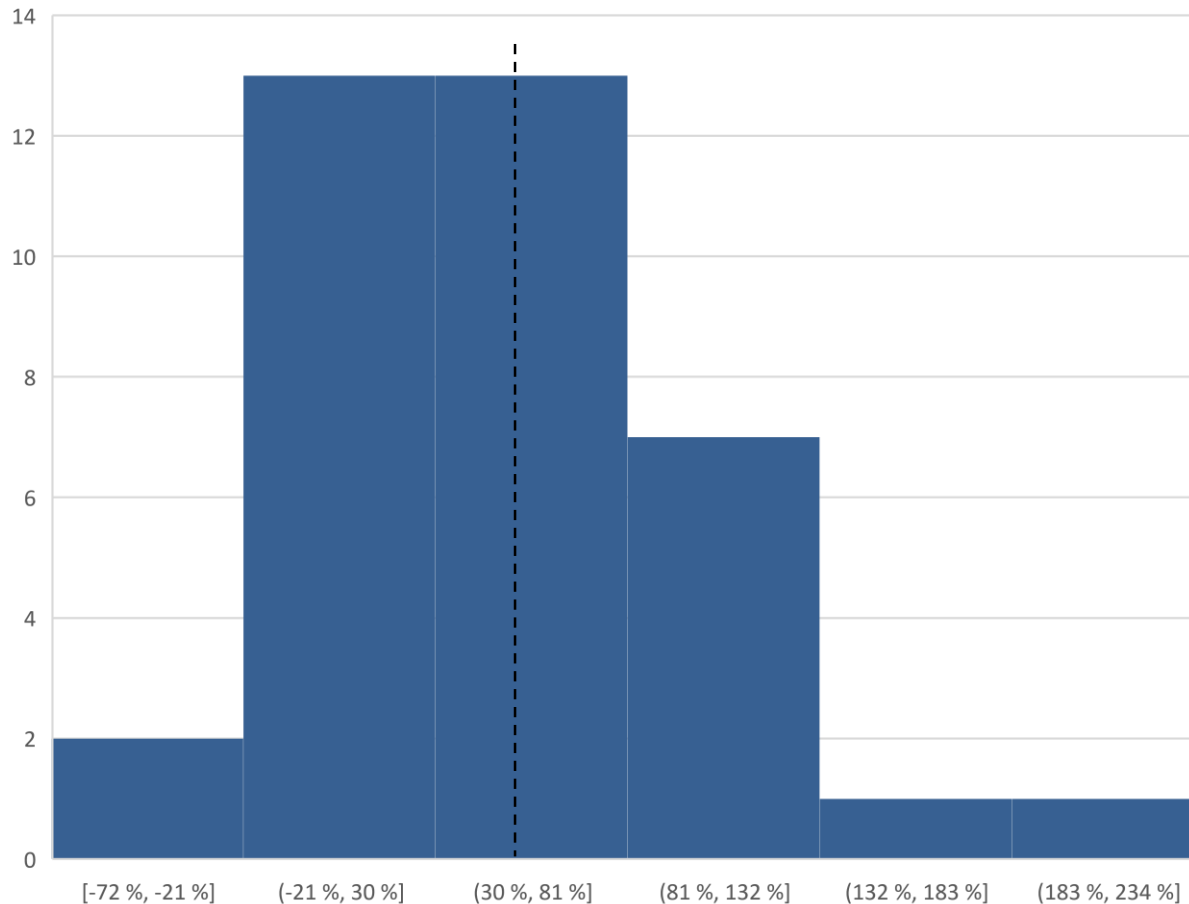
Cost estimates in the front-end of projects matter more

- Project concepts are identified and evaluated in the front-end
- At the time of the decision to build, the project may have created so much momentum that decision makers will approve the project even if the presented budget is three times that of the first estimate
- Underestimation of costs in the front-end may thus be the prime reason why many poor projects are chosen

However, we can always say no



Huge cost increases from one transport plan to the next



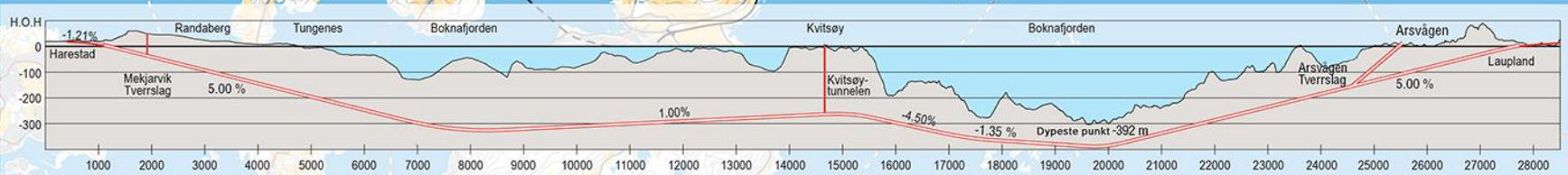
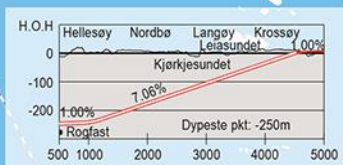
- 38 road and rail projects
- >90% exceed their original estimates
- Average increase from NTP 2014-2023 to NTP 2018-2029: 49 per cent

But “no” seems to be a difficult word for Norwegian decision makers

- In the National Transport Plan for 2018-2029 the government expressed concern at the large cost increases
- But the planning of the projects continues as if it did not matter
- The total net benefit from the new road and rail projects presented in the NTP 2018-2029 was estimated to *minus* EUR 18.5 million

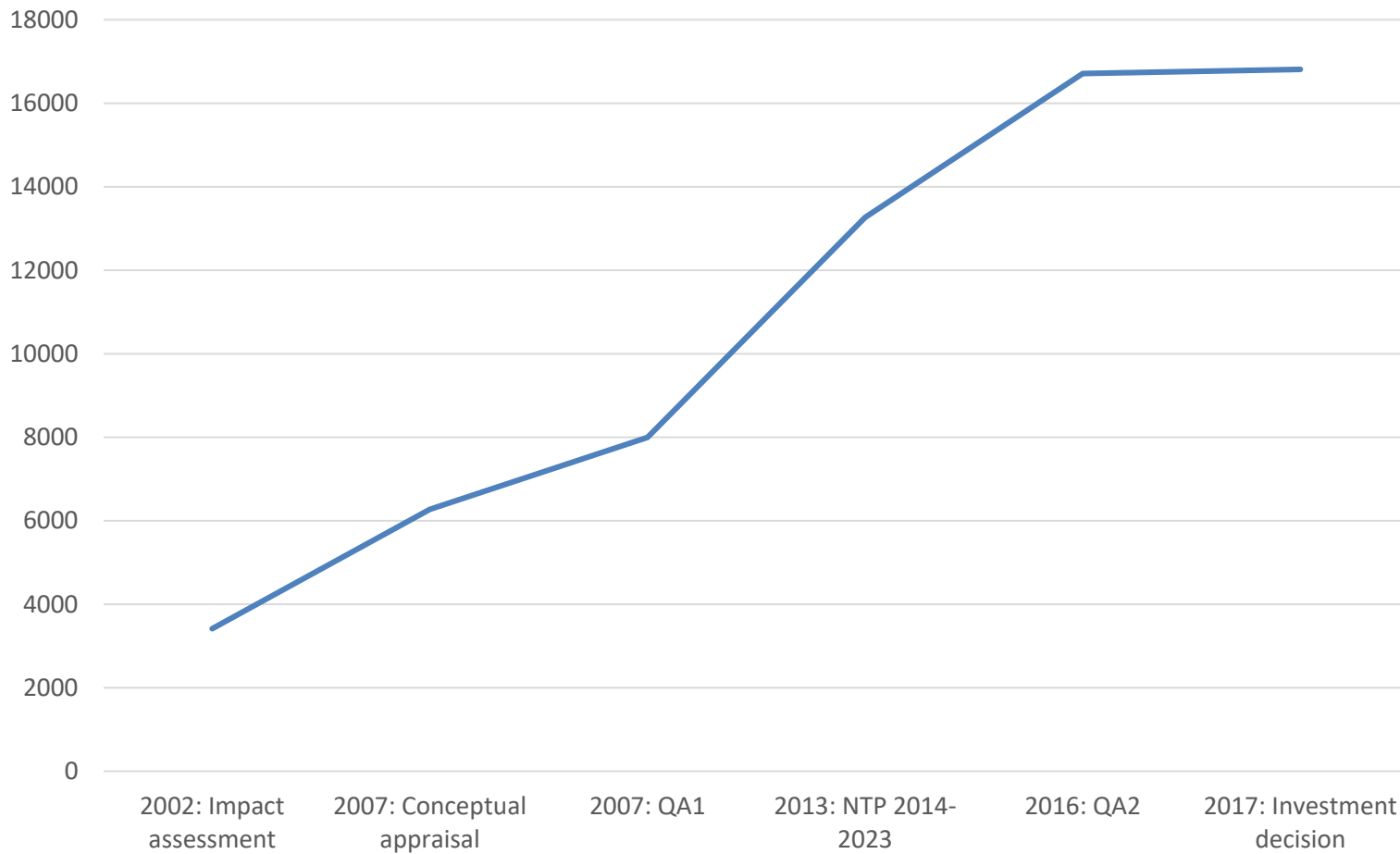
Example: The Rogfast Tunnel

- The world's longest and deepest sub-sea road tunnel
 - 26.7 km
 - Deepest point at 390 m under the sea
- First idea launched: 1985
- First impact assessment: 2002
- Conceptual appraisal: 2007
- QA1: 2007
- National Transport Plan: 2014-2023
- QA2: 2016
- Investment decision: 2017





An increase (in real terms) from NOK 3,4 billion to NOK 16,8 billion in 15 years



Why this massive increase?

- Large increase in the costs of road construction (70~30 CCI~CPI)
- Longer (20%) tunnel
- From single tube tunnel to double tube
- From two road lanes to four
- Deeper tunnel (10%)
- Wider tunnel profile (25%)
- Increased speed limit (from 90 km/h to 100 km/h)
- Inclusion of more surface roads in the project
- Increase in VAT costs

“It’s Difficult to Make Predictions, Especially About the Future”

- Megaprojects \neq ordinary projects
- The Rogfast Tunnel is no ordinary road project
- However, many of the original assumptions were probably unrealistic at the beginning

To the defence of the road authorities

- Are projects in year 0 and in year 0 minus n really comparable?
- “An improved road” can mean different things at different points in time
- Our tolerance for adverse social and environmental effects have changed - we are willing to pay more to avoid them
- Projects are often merged with other projects over time
- How has benefits developed?

Why does this happen in projects over and over again?

- Positive NPV is no investment criterion
- Underestimation of risks (unknowingly or deliberately)
- Increased standards
- Local authorities and interest groups use projects to pursue own objectives
- “Everything is cheap when someone else is paying”

Potential solutions

- Increased transparency
 - Is there a problem?
 - What are the causes?
- Increased accountability
 - Who is responsible?
- Increased contingency reserves in the early stages of project development
 - What can go wrong and what are the consequences?
- A critical review of project finance
 - Who is paying for the project and who gets the benefits?
- QA at an earlier stage

Thank you!

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