

Concept

Kjell J. Sunnevåg (ed.)

**Decisions based on
scant information**

**Challenges and tools
during the front-end phase
of projects**

Concept report No 17

 **NTNU**
Det skapende universitet



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ISSN: 0803-9763 (paper version)

ISSN: 0804-5585 (web versjon)

ISBN: 978-82-92506-42-4 (paper version)

ISBN: 978-82-92506-52-3 (web version)

Summary: This study is based on the recognition that it is necessary to have thorough evaluations during the front-end phase of projects, and that this is useful even if the basis of informasjon is weak. The study gives advice on how we should approach the earliest phase, in order to secure and utilize information in evaluations of different basic concepts or choice of project, and not least how to assure good quality of the information and evaluations. The study operate in the border area between research, testing and demonstrating and popularisation of approaches to utilize and assure the quality of information with a low level of presicion.

Date: 1.4.2007

Publisher:
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Decisions based on scant information

Challenges and tools during the front-end phase of projects

The front-end phase of a project is initiated when the corresponding societal need is put on the agenda, and concluded when the final decision to go ahead is made. The present study focuses on decision basis and decisions in the earliest phase of a project. That is at the stage in time when the major decisions are taken, when uncertainty is at its highest, when the impact of decisions is at its greatest, and when information is most restricted.

Lessons from major projects suggest that essential underlying premises for decisions up-front in some cases are ignored when projects are implemented. In other cases, initial assumptions underlying the selection of concept subsequently prove to be inappropriate. This may cause considerable cost overrun and delays – in more serious cases reduced long term effects of the projects.

There are strong indications that the choice of concept is equally if not more important for the success of project, than how it is managed during its implementation phase. A closer look at the assumptions and premises underlying decisions in major projects is therefore highly justified.

It is documented beyond doubt that it pays off to secure quality at entry. Long term benefits tend to outweigh costs with considerable margin in most cases. Yet, many projects are initiated without thorough identification and systematic scrutiny of alternative project concepts at an early stage. The concept chosen without sufficient scrutiny of problems and needs that the project is intended to solve. The initially identified concept commonly turns out to be the final choice – also in those cases where the project subsequently proves to be a failure.

Clearly, available information is limited in the earliest stages of a project. Decisions will have to be based on the restricted evidence and judgment. Is this a major problem – or could it also be seen as an advantage? Experience suggests that the possibility to make sensible decisions is considerable also when decisions are based essentially on qualitative assessment and judgment. We know that accurate information rapidly tend to be outdated as time passes. This is a problem since the front-end phase in major projects typically may last for years, even decades. Qualitative information about a well founded project concept, however, will often remain valid for the whole of the front-end phase, even if it lasts for years.

The study consists of 14 separate studies written by 10 researchers. It focuses on different aspects of decision making and the basis for decisions. The aim is to discuss methodology, procedures and practice that could help making better decisions up front.

The document is divided into four parts:

Part one: Challenges during the front-end phase of a project.

A key issue here is what type of information is needed. The need for systematic studies of problems, needs and priorities underlying the choice of project is discussed. Also, how to avoid going for one particular solution without thorough analysis of the underlying problem and its possible alternative solutions. Finally, how to avoid optimism bias and strategic misinterpretation up-front.

Part two: Generating information up-front

The focus is on judgmental information and the possibility to make sound predictions at an early stage. Lessons regarding to use of expert judgmental systems in identification and systematization of information are presented and discussed. The use of reference class forecasting in order to eliminate professional bias up-front is highlighted, and how to analyze project risk when information is highly limited.

Part three: Quality assurance of information

Key topics are peoples' biases in perception and decisions seen from the point of view of cognitive research, and how such weaknesses can be reduced. The study takes a closer look at the quality of qualitative information and how to improve its validity and precision. Finally, advice is provided on how to improve quality assurance of information

Part four: Making use of information.

Here a hands-on toolbox for analysis at an early stage of a project is presented. The study takes a deeper look at the use of fuzzy logic in up-front decisions, and the value and impact of new information is discussed. Finally, the report is concluded with a study of how major decisions regarding projects can be integrated within overall socio-economic analyses.

Concept reports

Paper version: ISSN 0803-9763

Elektronisk versjon på Internett: ISSN 0804-5585

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