Strategy Making with an
Alphabet Soup of Objectives

Most people, it seems, are notoriously bad at formulating objectives. The strange thing is that the readers generally tend to accept even nonsensical expressions, and find some kind of meaning by interpretation. This paper takes a look at this phenomenon and explores some of the reasons behind, giving examples from three major public projects.

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Qualitative information and misunderstandings in decision making

An alphabet soup is a soup made with alphabet shaped noodles. It is commonly used as a metaphor for an abundance of abbreviations or acronyms. In this paper it is used to characterize project objectives that are nonsensical or misguiding and therefore of no use. Experience suggests that even though we might have a clear idea of what we want to achieve, we are notoriously sloppy in defining realistic and unambiguous objectives. The strange thing is that this doesn't seem to matter much, apparently because of our unbounded willingness to understand even nonsensical expressions. What might be even more surprising is that despite of this, the message is often interpreted in the same way by different individuals. However, this is far from certain, and since we are talking about objectives that have been set to guide essential decisions, the uncertainty might often be too high.

Most of the communication between individuals is in terms of qualitative expressions. Qualitative information is not something that we use in a given situation; it is what we all use in our communication. Our qualitative expressions may not in themselves be sufficient to express exactly what we wish to convey, but will still with reasonable probability be understood the way they are intended. More so if it is within one specific context. It will depend upon what the basis for the information is. Some is based on systematic quantitative analysis of fact, and some of assumptions and judgment. At an early stage of inquiry available information is limited, and we will largely have to resort to qualitative expressions based on assumptions and judgmental information. This may not only be to our disadvantage. On the contrary, using textual information instead of numbers might make it easier to visualize and discuss complex matters. The level of precision is necessarily restricted and we might make fundamental mistakes so that our expressions are erroneous in relation to our intension - even completely meaningless. This paper discusses how to improve qualitative information, taking as examples the agreed objectives in three large public projects.

Qualitative versus quantitative information

Our world has become increasingly transparent and fine-grained as the result of the IT-revolution, and a seemingly unstoppable growth in computing power. This has made previously unthinkable degrees of detail and precision possible. For example, your mobile phone can now indicate your position on the planet at any time within a few meters accuracy. The amount of information underlying these capabilities is enormous. Multiplied with the number of mobile phone users and the time factor it is incomprehensively large. This type of technology makes each one of us volume consumers of information and with an increasing demand on precision and verification. Consequently, much of the education that shapes the intellect increasingly is based on quantitative information, not least in the fields of technology and economy. Clearly, quantitative data is better suited to provide information in a concise format, to test correlation between variables and generalize findings to larger populations based on statistical analysis. In fact, statistical analysis require quantitative information, preferably at interval or ratio level, see figure 1.

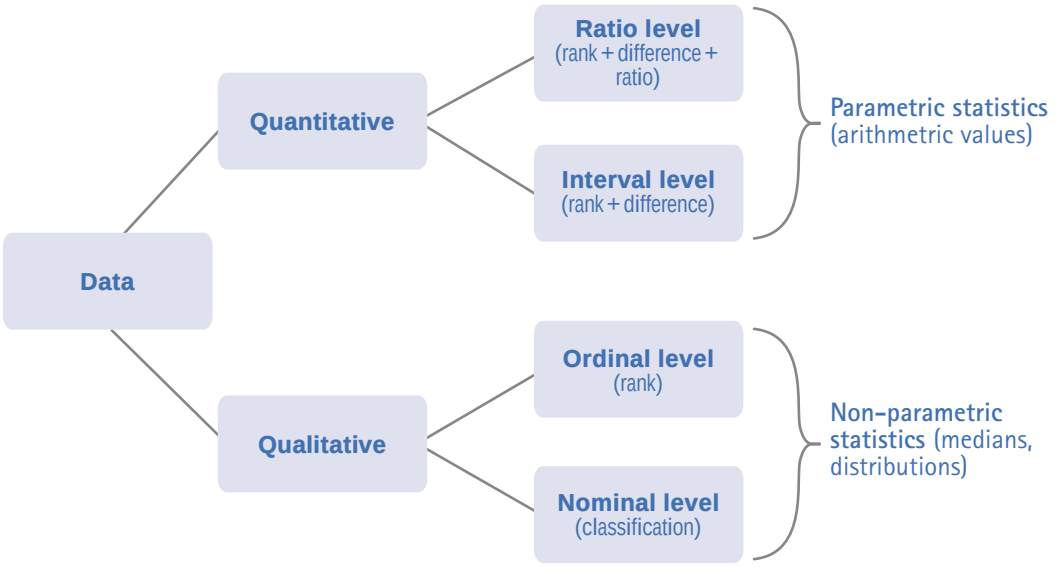


Figure 1. Qualitative and quantitative information characterized according to nature of the scales or measurement used (Olsson and Sörensen, 2003)

An increasing demand for exact documentation as basis for decisions leads to occasional failure to see the potential of systematic use of qualitative information. The main problem with textual information is that the precision and our possibility to verify are restricted. Also, qualitative information is often more prone to individual biases and interpretation, and may therefore be less credible than hard facts. The statistical processing of such information is mostly limited for instance to medians, quartiles and distributions (non-parametric statistics). Nevertheless, in a given case it may be possible to classify qualitative information with relatively high resolution, as shown in figure 2. However, doing so often dilutes credibility since subjective assessments are involved, which opens up for questions of interpretation and categorization. Our urge to emphasize the worth of quantitative information leads to a systematic undervaluing of the principle advantages of using qualitative information: Namely that it can be generated quickly, it is the prime basis of human communication, but also that it is necessary in order to provide a comprehensive picture of complex matters.

Moreover, much information simply cannot be quantified. Also, whenever quantitative information is not reliable it may be more appropriate to use qualitative expressions until more reliable information can be acquired. Finally, it is commonly accepted that huge amounts of quantitative data or highly aggregated data often tend to blur rather than clarify a situation.

Of course, in practice it's not a question of either - or, but having it both ways. Qualitative assessment helps describe the whole, while quantitative information imparts precision to the description. This is why we mainly use qualitative information for communication. The content of communication may easily be regarded as parts of an information hierarchy in which the underlying implicit information often is quantitative. The credibility

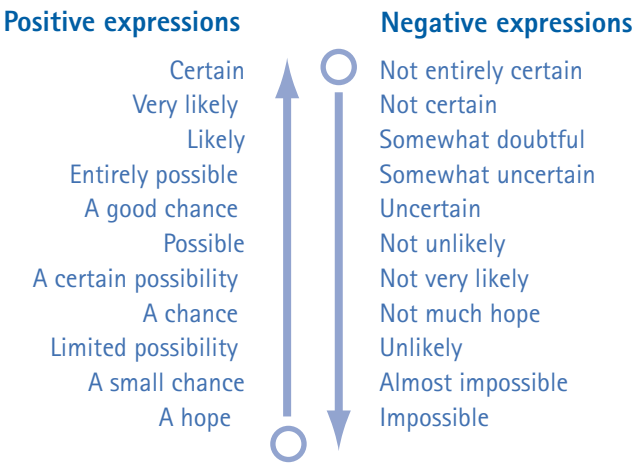


Figure 2. Different qualitative expressions of judgemental probability, suggesting that information can be classified at nominal level with some resolution. (Teigen, 2006)

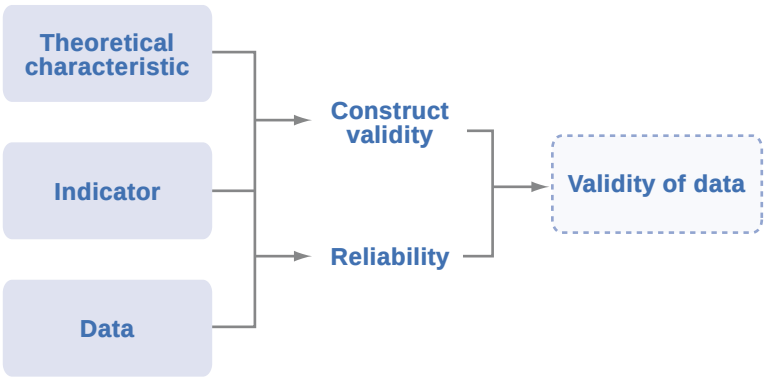


Figure 3. Validity as an expression of the quality of information (Hellevik, 1991)

of qualitative communication therefore rests on the assurance that underlying information exists and can be accessed if need be.

Information and validity

The term validity is used by researchers to characterize the degree to which information reflects the phenomenon being studied. A general model to illustrate this is shown in figure 3. Valid information requires two criteria to be fulfilled. First, construct validity must be ensured, that is the interpretation must correlate with the phenomenon (such as temperature being an indicator of illness). Also the data must be reliable or trustworthy (such as the temperature indicated on the thermometer corresponding exactly to the body temperature).

The example applies to quantitative information. In qualitative assessments our possibility to ensure precision will be restricted and the construct validity will be the decisive factor in judging the worth of the analysis. The challenge is to ensure that the information element used provides a valid expression of what we want to describe. If this is the case, we can at least be reasonably sure that the information is relevant.

The validity problem occurs when there is a mismatch. If the goal of a transport project is "to improve traffic safety", the problem arises if "local employment" is chosen as an indication of attaining that goal. Intuitively, we can assert that the two are not closely correlated. More direct indicators of high validity will for example be "the number of crossings" or "the number of people injured or killed".

A reliability problem arises when we use vague statements or expressions with low precision. In the above example, expressions like "improves" and "safety" gives considerable room for interpretation. Precision might be increased by being explicit as to for *whom*, in this case, the composition of the target group, the *degree*, here the anticipated change, *timing*, etc. As mentioned, we have to rely excessively on qualitative information in the earliest phases of a project, in the absence of accurate data, lack of time and resources for acquiring it. Or because realization of the project might be several years into the future so that present data are uncertain in view of future changes that might be difficult to predict.

But also, it might be *preferable* to wave precision and instead do with expressions such as "good", "to a great degree", "important", or "considerable" to describe extents, amounts or levels. This may allow considerable freedom in assessing different models or concepts, discuss these in larger contexts, for instance in terms of scenarios, and discuss consequences of possible changes. Hence, it may be useful to lower the requirements for precision temporarily, but no means to lower our demands for construct validity. In other words, we can accept some uncertainty in our attempts to hit the target, but a complete miss is unacceptable even though reliability may be high, as illustrated in figure 4.

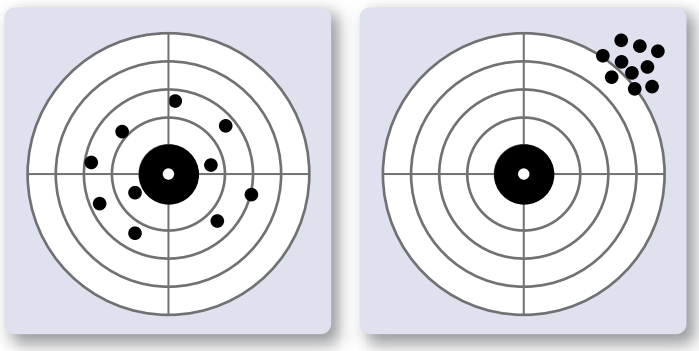


Figure 4. Validity and reliability - the question of hitting the target, and the precision of the shot

Judgmental, stochastic assessment of utility

Reliability, or the extent to which information is trustworthy, can in principle be tested. It is ensured whenever indicators are unambiguous or measurements have no systematic errors. The test is that several people independently using the same indicator for the same problem should obtain the same result. Sources and methods of acquiring information are decisive in order to ensure reliable information.

The validity of information cannot be re-examined, but in principle have to be based upon judgment. Hence the choice of indicator is decisive. There are two ways to ensure valid information: (1) By choosing indicators that provide the most *direct* measure, and (2) by using several *indicators* that together comprise a good indication of the phenomenon described. For example, "*number* of *graduates*" is a direct indicator of the phenomenon "*university education*". But the number alone gives an incomplete picture of what is attained. So it clearly needs to be supplemented with information on marks or "*level of achievement*" as well as the relevant "*type of education*". Likewise, "*the quality of education*" may be characterized such as by the ranking of a university with respect to others. Other supplementary indicators could be "*duration of studies*" compared to an average and "*drop outs*"; the number of students who leave before finishing. In combination these indicators would give a more complete picture of what we want to measure. This example illustrates the hierarchical character of information. Education is the overriding phenomenon to be measured.

It is described using subordinating indicators or information elements that together afford an acceptable, valid description of the phenomenon. Some elements are vital since they have a high validity, while other elements with low validity may be unnecessary or directly flawed.

Consider an example of the evaluation of the project to build an office building some time after its completion: The aim is to find "*how well users are satisfied with the building*". Eight indicators that might be used to acquire information are listed in table 1. For example people's opinion on "*building functionality*" is a direct indicator and consequently a good a term for testing. On the other hand "*job satisfaction*" is influenced by many factors other than perception of the building and hence is less valid. The extent of "*evening overtime work*" presumably is little influenced by the building itself and hence has low validity. In the example the indicators are ranked according to validity which illustrates that there is good reason to strictly adhere to the requirement of validity, to focus and enhance the worth of assessments and save resources.

Validity	Indicator
High	The functionality of the building as perceived by the users
High	Turnover of tenants
High	Demand for the offices in the market
Medium	Maintenance of the building
Medium	Price level of the offices
Low	Extent of overtime work in the evenings
Low	Profitability of tenant companies
Low	Users perception of job satisfaction

Table 1. A selection of indicators that might be used to assess tenants' user satisfaction in abn office building

Precision - clarity and unambiguity

Unambiguity is a precondition for dependable information. This applies to the indicators that designate the information sought, as well as to the acquired information on which assessments are based. In qualitative expressions the language itself is essential, both the words used and the semantics. Words are often interpreted differently. The lexical definition of a word reflects how it is understood in common usage. The lexical definition is often too broad to be used for specific purposes. Hence, a lexical definition can be amended or narrowed down to a précising definition. For example the lexical definition of "resistance" would be "*the action of resisting*" and "*armed or violent opposition*". However, the word has different meanings in physics, medicine, finance and politics. A précising definition in physics and electrical engineering would be that resistance is the ratio of voltage to current in a conducting medium (Ohm's law). Ambiguity of understanding may be prevented by amending the terms likely to indicate the essence of the précising definition, as by writing "*electrical resistance*". Such terms are used to ease communication within specific fields. Even so, definition problems may arise in communication between disciplines and between professionals and the public who rely largely on lexical definitions.

That said, using more precise definitions would solve only a part of the problem. Vagueness enters also in our use of adjectives to indicate quality, quantity or size. Words such as "*good*", "*high*" and "*substantial*" are categories in classification at nominal level, as illustrated in figure 2, and consequently may easily be misinterpreted. Moreover, many words may be understood differently depending on one's point of view. For example the word "*normal*" used to describe a transport project may be understood by one party as (1) within the usual limits, and by another party as (2) within limits of what is acceptable. Or, what exactly is the meaning of "the mercury content of drinking water is normal"? Does "*normal*" mean in comparison to other lakes, in comparison to lakes in virgin wilderness, or with respect to the legal health hazard exposure limits? (Hansson, 2003)

The choices of words used to express value or worth are significant in obtaining and disseminating information. This is easily seen in communication between different stakeholders in relation to a project that is considered controversial for some reason or another. Not least, terms like "*needs*" and "*benefits*" will often be a cause of disagreement between various parties both regarding to the interpretation and the information content of the concepts.

Rational choice, causality and probability

Logic in its broadest sense means correspondence with reason or generally accepted principles of rational thought and action. That which does not correspond is illogical. Fallacy is a collective term for arguments that have logical flaws or are invalid. As a branch of knowledge, logic deals with the principles and application of the rational. This is not least the case in linguistics, as in how we use, combine and give meanings to words. We usually rely on rational bases in planning actions or projects. *Causality* and *probability* are two essential principles that underlie the analysis and assessments of rationality.

Causality, or cause-effect relationships, helps us decide which actions should be made in order to achieve a desired effect. Conceivably, different alternative actions may have the same effect. By definition, the rational choice is any one of them, as all achieve the effect. But, if alternative strategies differ such as in time taken or resources required, the strategy requiring the least resources will be the rational choice. Likewise, a specific action may result in various effects in addition to the desired effect. This complicates assessment, as others cause-effect relationships must then be taken into consideration. Some side effects may be undesirable and in some cases unacceptable. A rational choice must then weigh up the impact of possible undesired side effects and maybe eliminate strategies that could result in unacceptable side effects.

Logic deals with the principles and application of the rational

This type of rational thought is easily applied to physical systems but is far less tractable for social systems. The reason is that physical systems follow

natural laws and thus in principle are predictable. Social systems, in contrast, are in principle unpredictable. This is because the units in the system can make their own decisions. Consequently, attempts at large scale rational planning are more or less doomed to fail. The cause - effect relationship also is more problematic than it is for physical systems. Events in society don't necessarily follow a one-dimensional cause-effect chain or a two dimensional activity tree. They are better described by dynamic systems with mutual influences between the different elements. Such systems may be described mathematically and to some extent be simulated, but experience suggests unpromising results since the system to some extent is unpredictable.

A simple alternative which could be used early on in the planning process is to try to identify simple cause-effect relationships, but also bring in probability assessments to consider the uncertainty that may affect the relationship. If so, the strategy will be rational if the *probability* of success is at least as high the probability of success for some of the alternative equivalent strategies.

The challenge in this case would be to identify the essential cause-effect relationships, and make a realistic assessment of probability. This represents considerable challenges. But, in looking at customary practice in planning projects, the threshold for improvement seemingly is very low and possibilities of marked improvement accordingly high. This was for example the conclusion in a study of major international development projects that analyzed cause-effect chains, expressed as formally agreed objectives that constituted the basis for decision making in these project (Samset, 2006). The study comprised examples of best-case projects designed and quality assured to the same norms.

The study showed that all projects had substantial flaws. On the whole, the descriptions of the objectives were vague, and objectives at differing levels of ambition were mingled unsystematically. Some projects lacked descriptions of anticipated effects or had strategic goals that were far more ambitious than realistic. For instance, when "*betters standard of living*" was listed as an anticipated effect of a small road project, and "*economic growth*" as the anticipated result of a plant nursery project, it is intuitively easy to see that the gap between cause and effect is excessive and that the objectives are overly ambitious. The study concluded that the design of these projects was flawed to the extent that none of the steering documents were suited to management and overriding decision making. Surprisingly, most of the flaws were trivial and should have been detected, as all the projects had been designed using the same approval method that aimed to avoid precisely these sorts of flaws.

Identifying objectives: Three cases

The principles described above are illustrated below based on information from the earliest phases of three large public projects: (1) Acquisition of fighter jets, (2) Construction of a shipping tunnel, and (3) A road construction project.

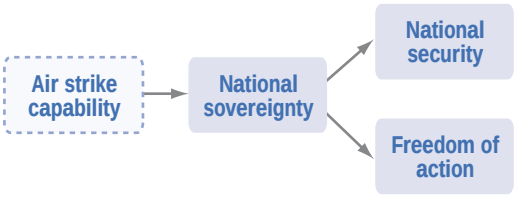
A project with unclear justification

Take a look at the strategic objectives underlying the acquisition of new combat aircrafts for Norway:

> *"Airstrike capabilities that shall contribute to national security, sovereignty and freedom of action"*

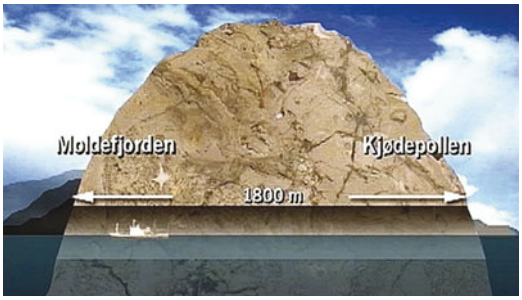
This statement contains four separate objectives that seemingly are clustered together haphazardly. The expression "*that shall contribute to*" indicates causality. In other words "airstrike capabilities" is the cause and what follows is the expected effect. However, both "*national security, sovereignty and freedom of action*" is something that already exists. This means that the expression "contribute to" makes little sense and should be replaced by maintain. The formulation then is airstrike capabilities to maintain security, sovereignty and free-

dom of action. The goal of "airstrike capabilities" is not a strategic objective but only an expression of the project output, namely that a number of aircraft has been delivered and are operative. It should therefore be deleted from the formulation of objectives. The remaining three objectives are listed in sequence but are separated with comma, which indicates that there is no causality. The question then is if these should be considered to be parallel objectives. The answer lies in whether there are cause-effect connections between them. Understandably, *sovereignty*, which already exists, is the attribute that first and foremost ensures *national security* as well as *freedom of action*. The linkage between the objectives might be pictured in a cause-effect chain as shown below. Other interpretations are of course possible.



The choice of overall strategic objective for the project is then between these three remaining objectives. To some degree the question is reduced to an assessment of probabilities: Will the combat aircrafts aid the realization of national freedom of action, national sovereignty or national security? In other words: Given adequate airstrike capabilities, what are the probabilities that each of these objectives will be realized? *National security*, whatever that means, arguably is the objective closest to realization. That said, national security presumably is more extensive than security from attack by outside military forces and also includes questions concerning the economy, the environment, food supply, self sufficiency, etc. It may be that *national security*, or perhaps *credible defense capability* in the sense of deterring military interventions by other countries, is a central objective as it is at a lower, more realistic level of ambition in relation to the endeavor. If so, it may plausibly be a strategic objective that replaces the others, which are no more than buzzwords that have crept into the parliamentary proposal in an effort to substantiate a public investment, which is not unusual. The cause-effect chain then is as shown below.

Airstrike capability is one of several elements that comprise the credible defense capabilities that also include a country's participation in greater alliances. The overriding reason is expressed in the strategic objective, namely maintaining the country's national security.



A project with no obvious justification

A project with an even more compounded statement of objectives is the Stad shipping tunnel. The intension is to construct a huge tunnel for smaller vessels between two fjords in Norway. The objective is formulated this way:

> *"Enhance the operative conditions for maritime transport along the coast by increasing accessibility and safety for sea transport in the region, as well as support local employment and population."*

This statement contains five meaningful elements: (1) *Operative conditions for maritime transport*, (2) *increased sea transport*, (3) *increased safety at sea*, (4) *higher employment* and (5) *increase in local population*. The word "*by*" refers back to the first objective, in contradistinction to the first example in which "*shall*" points forward. As it stands, the "*operative conditions for maritime transport*" is the effect, whilst the other aspects are causes. This is an obvious error. The "*operative conditions for maritime transport*", whatever that means, should lead to increased sea transport, increased safety at sea, higher employment and a population increase, not the other way around.

In this case the down-to-earth interpretation of the concept "*operative conditions*" probably means the shipping tunnel itself. Calling a spade a spade is a good advice, and the cause-effect chain would then be as depicted below.

As in the previous example the shipping tunnel should be deleted as it is no more than the project output. *Increased safety at sea* and *increased sea transport* along the coast believably are the first order effects of the project. Consequently all that is left of the strategic objective is the *support of employment*, which is a precondition for increasing the population.

This is the logical structure that leaves the question that needs to be clarified more by politics than by logic. What is the underlying reason for the project? Is it the population issue? If so, is the shipping tunnel an enterprise that with sufficient probability will attract new residents to the area? Or is employment the principal aspect? If so, can the project be justified from a greater socio-economic assessment of the impact of the anticipated increase in the traffic with small ships?

In this case, the statement of the overall objective in the bill put before Parliament gave no concise answer to such questions, and consequently no credible grounds for the project.

A purposeless project

The third project is road connection (LOFAST) from a small town at the outer part of an archipelago to another town on the mainland. The bill before Parliament correctly defines the output as "*about 30 kilometers of new roads, including four tunnels, two longer and nine shorter bridges*". However, the bill contains hardly any mention of the goal or the strategic objective for the project. The closest statements a justification is:

> *"The project will give a region with a population of 25000 a permanent road link to the mainland and thereby provide a ferryless mainland connection for the Lofoten archipelago."*

This statement contains three meaningful elements: (1) *road to be built*, (2) *permanent road link to the mainland*, and (3) *ferryless connection to the mainland*. The linking words "*give*" and "*thereby provide*" comprise a cause-effect linkage as shown below.

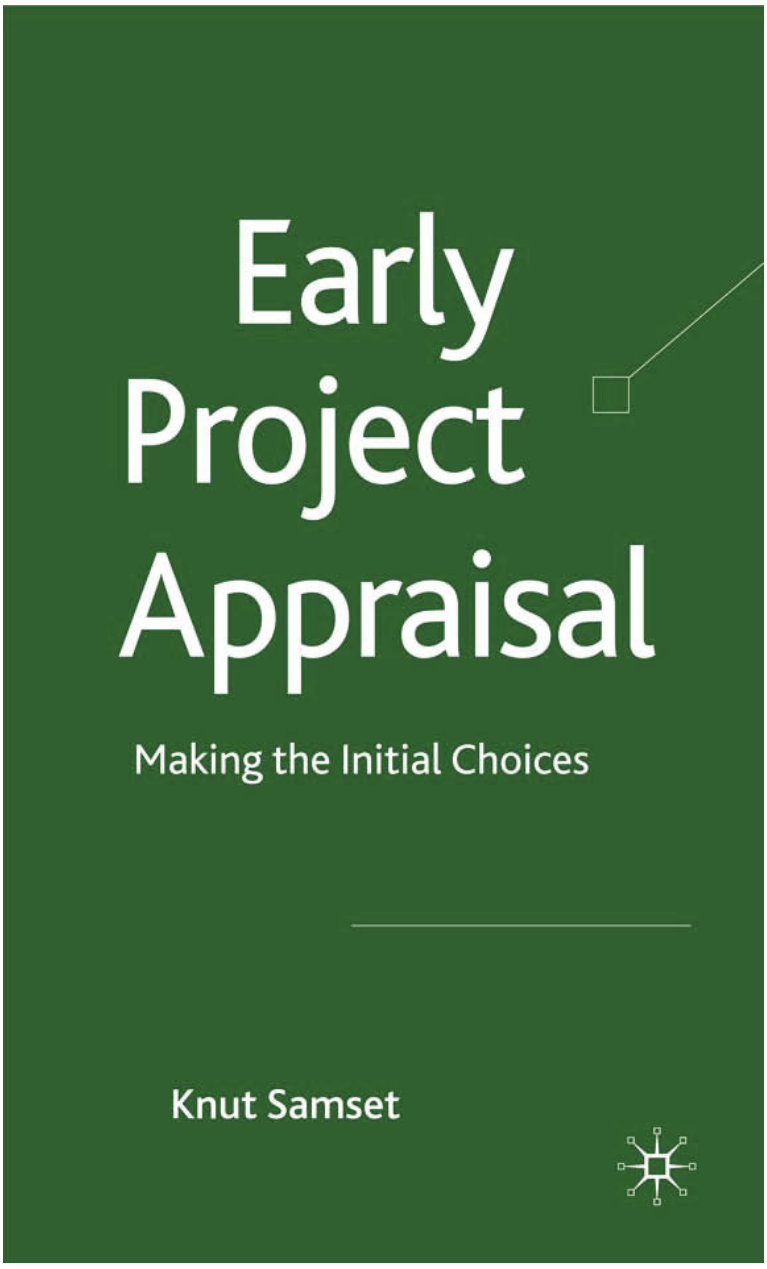
Clearly, the new road is just an output, not a strategic objective. The two other outputs mentioned are merely different ways of saying the same thing, so causality is meaningless. Further, both will be realized the moment the road is completed. This means that the project has no overriding strategic objective. The 25000 residents that would benefit from the new road, most likely will get it. But the parliamentary bill has no description of the intended effect that can justify realization of the project. This also is not unusual in public decision documents.

Conclusions

Qualitative information is not something chosen for a particular situation, but rather something we all use in our daily communication. To a great extent, we rely on qualitative expressions that itself may inadequately describe what we wish to communicate, but nonetheless most likely will be understood as we wish. The credibility of the content of the communication depends on the basis of its information. Much of the information that we use is based on underlying systematic analysis of facts, often comprising qualitative information. Other portions are based on assumptions and judgment. An initial assessment of aspects such as needs and assumed effects of a possible project will to a great deal refer to qualitative information based on assumptions and judgment. As mentioned, this is not just a disadvantage. It may in fact simplify the visualization and discussion of complex matters. Clearly, the level of precision in such cases is low. Consequently, one must be particularly careful in securing validity of definitions to ensure that the information used as the starting point for further analysis and project development is unambiguous and as consistent as possible. Much qualitative information tends to be presented in complex, compound statements. An analysis of such information presupposes that the relevant text is broken down into its separate meaningful elements. Much of the analysis at the earliest stages would then comprise categorization, structuring, or assessing characteristics. In such cases, the assessments of causality and probability are useful aids, as discussed and illustrated in this paper.

Samset, Knut, 2010: **Early Project Appraisal. Making the Initial Choices**, Palgrave Macmillan, London, ISBN: 978-0-230-27324-5, ISBN10: 0-230-27324-6, 224 pages, 92 figures, 16 tables.

Focusing on turning an initial idea into a project with a successful outcome, this book fills a gap in current literature on project management and is thoroughly grounded in the latest research in this field. It emphasizes the practical application of decision making based on qualitative and judgmental information.



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