



How do uncertainties influence decision making?

They complicate it unnecessarily!



How do uncertainties influence decision making?

uncertainties get into account in (engineering) models by using random variables.

Based on these models one can find a decision to reach a certain probability.



How do uncertainties influence decision making?

The higher the uncertainty,
the less exact the ~~prob~~ probability
used for the decision making is.



How do uncertainties influence decision making?

It's impossible to know exactly which event can occur (point of time, frequency, quantity...)- So you have to create models in order to approximate these issues. By taking uncertainties into account, you keep in mind that a "worse case" can happen. You should find a compromise between security/reliability and rentability (economy)-



How do uncertainties influence decision making?

If you don't calculate with the uncertainties, then the risk of failure of the product will raise up.

If you do calculate with them, the influence will be calculated in the result and the product ~~is~~ has a lesser risk of failure.



How do uncertainties influence decision making?

In any future project we are dealing with uncertainties, because we can't forecast ^{actions, reactions, etc} problems in the future. These uncertainties can be aleatory or epistemic.

In regard to that every decision for future problems consists of uncertainties and we have to mark them ^{and calculate} with random variables.



How do uncertainties influence decision making?

You have to measure the uncertainties, which will make the project more expensive. Then you have to decide which means you use for diminishing the uncertainties and how much you want to lower the uncertainty of an event to happen, which will lead to more expenses. You have to decide between the degree of costs and the degree of the uncertainty.



How do uncertainties influence decision making?

- makes decision making difficult, you never know what really happens
- you have to consider the ^{probable} consequences of every decision
- consider all possible outcomes of the uncertainties



How do uncertainties influence decision making?

Wenn man vor einer Entscheidung steht, analysiert man zuerst die verschiedenen Möglichkeiten, welche man hat. Dabei treten Ungewissheiten auf, welche einem die Entscheidung erschweren.

Jeder geht mit solchen Unsicherheiten anders um:

Einige sind lieber auf der sicheren Seite und nehmen für dies auch einen Verlust, resp. geringeren Gewinn hin; andere gehen auf Risiko für einen grösseren Gewinn und nehmen das grössere Risiko aller an Maliken hin. Wieder andere nehmen den Mittelweg: Sie machen Annahmen aus Erfahrungswerten für die Ungewissheiten und treffen ihre Entscheidung anhand diesen Werten.



How do uncertainties influence decision making?

→ It makes it much more difficult!



How do uncertainties influence decision making?

uncertainties can change a decision because they can influence the "outcome" of a question.

How do uncertainties influence decision making?



- Das macht d'Entscheidig schweriger
- It makes the project ^{more} expensive.



How do uncertainties influence decision making?

Die Unsicherheiten sind Bestandteil der Formel und beeinflussen so das Endergebnis



How do uncertainties influence decision making?

3 students say negative!



How do uncertainties influence decision making?

- they have the effect that a project can't be realized easily with a 100% prob. of no failure.



How do uncertainties influence decision making?

uncertainties get into account in models
(e.g. engineering) by using random variables
based on these models decisions are made
with a factor of ^{safety} ~~security~~ / certainty



How do uncertainties influence decision making?

When you not look at the uncertainties there is a greater risk that something would be destroyed. You ~~not~~ decide to ~~not build~~ build it so that you have not much uncertainties. e.g. you take a better material



How do uncertainties influence decision making?

- difficult to make a decision
- nicht voraussehbar



How do uncertainties influence decision making?

First of all, in the moment when we want to decide something we wanna know what is the state of fact and what we want to achieve. But the state of fact is part of the nature and that's never deterministic. So from the beginning on uncertainty is involved but even if the nature once would behave totally analytically perfect the model of the state and of the aim is always made by human beings and no gentleman is perfect, so again uncertainty takes place.