

## Live Experiment about Risk Estimation - Handout

REFSQ Conference, Essen, 28 March 2011

This handout provides for explanations of those Misuse Cases and requirements used in the questionnaire of Group 2, by describing them in text and screenshots.

### Context of use:

In this experiment, we adopt the perspective of the user.

Imagine that your laptop is the only computer which you use for your work. You have many important deadlines, at least one per week. For delivering your work results, you need to do an online research, e.g. using Google.

You are an experienced user – both of your laptop and of search machines. You are highly motivated to do your work successfully and in an efficient way.

### Metrics and scales:

Probability of Misuse Case (MUC):

- Probability of MUC in % of the number of uses
  - In 100 work sessions, how many times does the MUC happen? E.g. 10% = 10 out of 100 times
- Average times per year
  - Within the period of one year, how often does the MUC happen? E.g. once per year (=1) or once out of 10 years (=0.1)
- Probability in 1-7 points
  - 1 = extremely unlikely, (almost) never
  - 3 = rather rarely
  - 5 = rather frequently
  - 7 = extremely frequently, (almost) always

Damage caused:

- damage to you in €
  - How much money in € (or \$, then please indicate) do you as a user of the laptop/ Google lose when the MUC happens?
- damage to you in hours of time lost
  - When the MUC happens, how much time do you lose? (calendar time, not work time) e.g. when you must wait 24 hours and repeat an activity of half an hour, then you have lost 24 hours of calendar time, but only half an hour work time
- Your dissatisfaction in 1-7 points
  - 1 = extremely satisfied
  - 3 = rather satisfied
  - 5 = rather dissatisfied
  - 7 = extremely dissatisfied

- damage to you in 1-7 points
  - 1 = (almost) no damage
  - 3 = rather low damage
  - 5 = rather high damage
  - 7 = extreme damage

## The Misuse Cases

MUC1: Your new laptop crashes within the first year.

MUC2: Your new laptop crashes within the first three years.

MUC3: Your laptop crashes.

MUC5: Under load, the Google search takes 3 seconds instead of 0.2 seconds.

MUC6: A typing error in the search string leads to an (almost) empty list of hits.

MUC7: You have found a list of hits and opened 20 of these in a new window/ tab. Then, your browser crashes and all these pages get lost. You must restart your search.

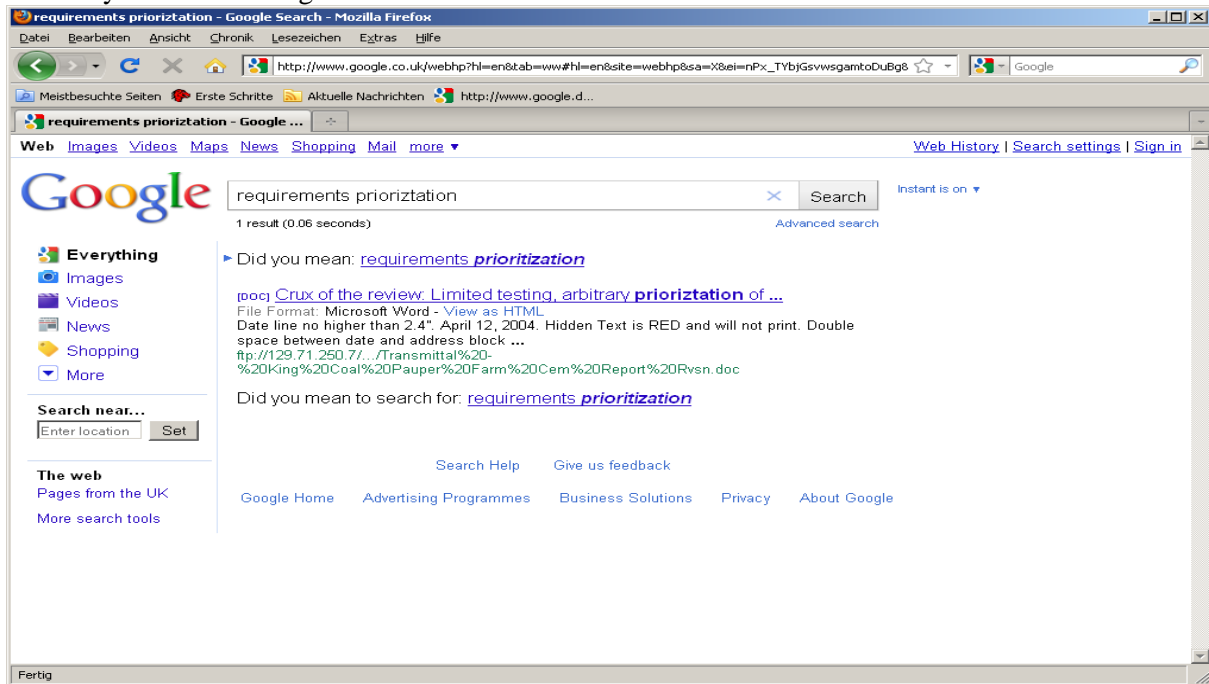
MUC9: You search for an English search string but you want to find web pages in another language.

MUC10: You search for pages which contain all of three key words, and additionally one out of three synonyms. However, Google also finds pages which contain only one or two of the key words.

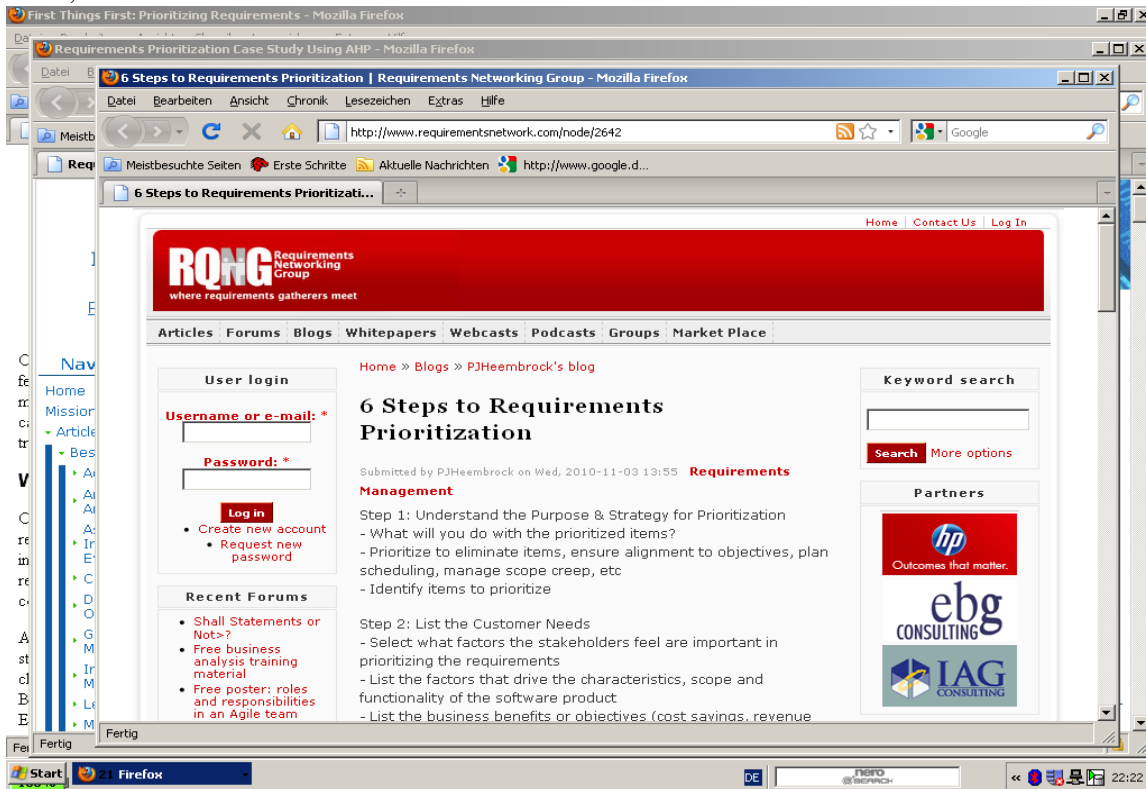
**MUC1-3: Your laptop crashes.** This means that the laptop without previous notification will never re-start again and that all data on it are lost.

**MUC5: Under load, the Google search takes 3 seconds instead of 0.2 seconds.** 0.2 seconds are a normal time to wait for the search result.

**MUC6:** A typing error in the search string leads to an (almost) empty list of hits. This means that instead the search string you wanted to enter, you enter something else that does not make sense. Therefore, the list of hits is empty or you receive only those web sites which contain the same typing error as your search string does.



**MUC7:** You have found a list of hits and opened 20 of these in a new window/ tab. Then, your browser crashes and all these pages get lost. You must restart your search. Before the browser crashes, your screen might have looked like the following figure shows. After the crash, all search results are lost.



**MUC9:** You search for an English search string but you want to find web pages in another language. For instance, this can happen when you search for a specific web site (in Spanish, or German) which you know or when you want to search in several languages, like English AND Spanish.

**MUC10:** You search for pages which contain all of three key words, and additionally one out of three synonyms. However, Google also finds pages which contain only one or two of the key words. For instance, you search for pages which contain requirements AND prioritization AND AHP AND (empirical OR experiment OR case study)

## The requirements

R1: daily data backup

R4: Technical possibility to mark interesting hits and to save the list on your computer.

R5: double performance by load balancing

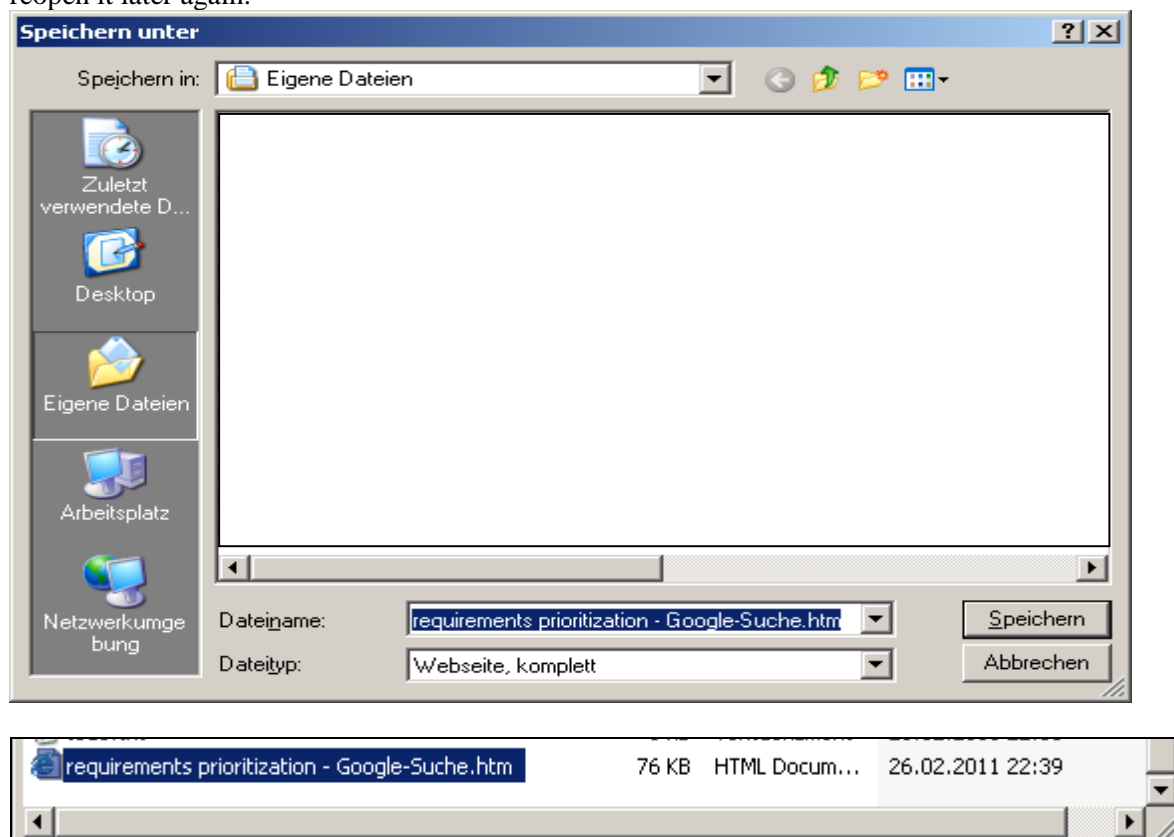
R6: Automated detection and correction of typing errors.

R7: You can define the language of the web pages searched.

R9: Google "advanced search" allows the "and" and "or" combination of key words.

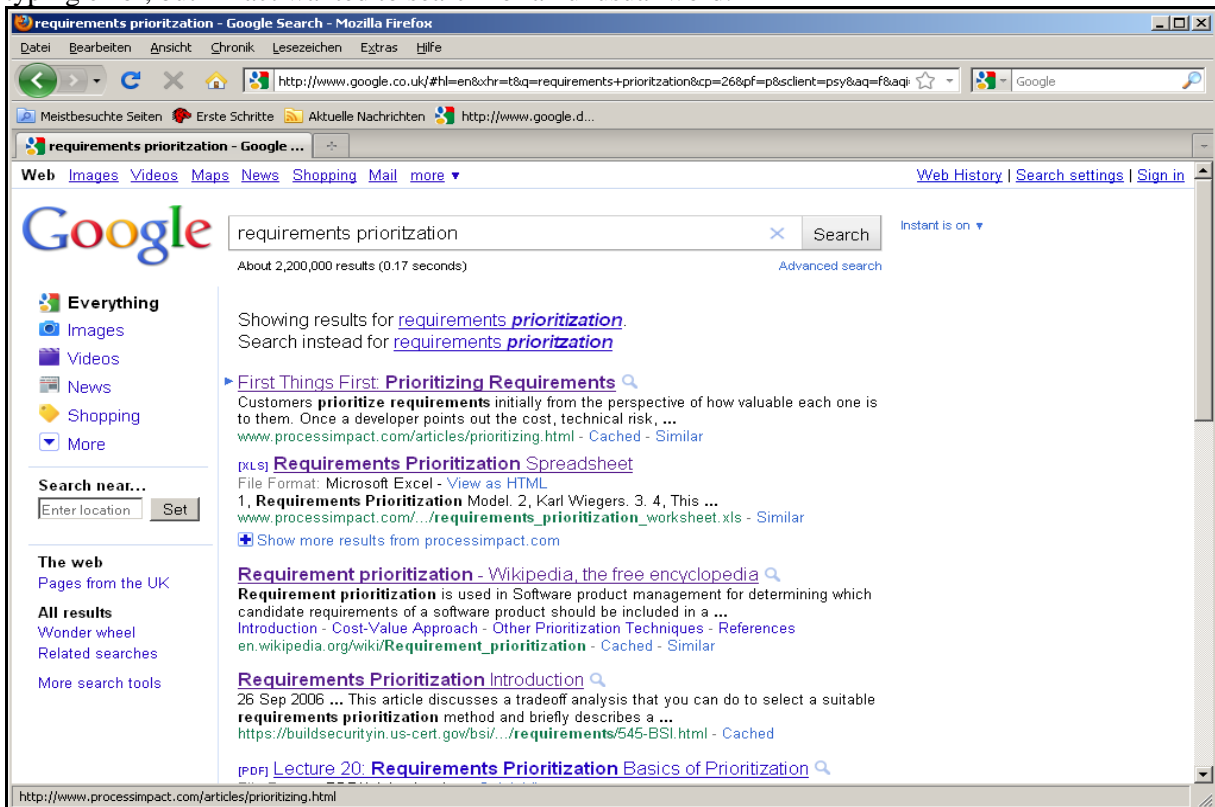
**R1: daily data backup:** Every day at the same hour, your data are saved from your laptop to another storage medium. In case that your laptop crashes, all data can be completely restored at the status of the point of time of the data backup.

**R4: Technical possibility to mark interesting hits and to save the list on your computer.** With Ctrl-S or *File-> Save page as* you can save the research result list as a htm file on your computer and reopen it later again.

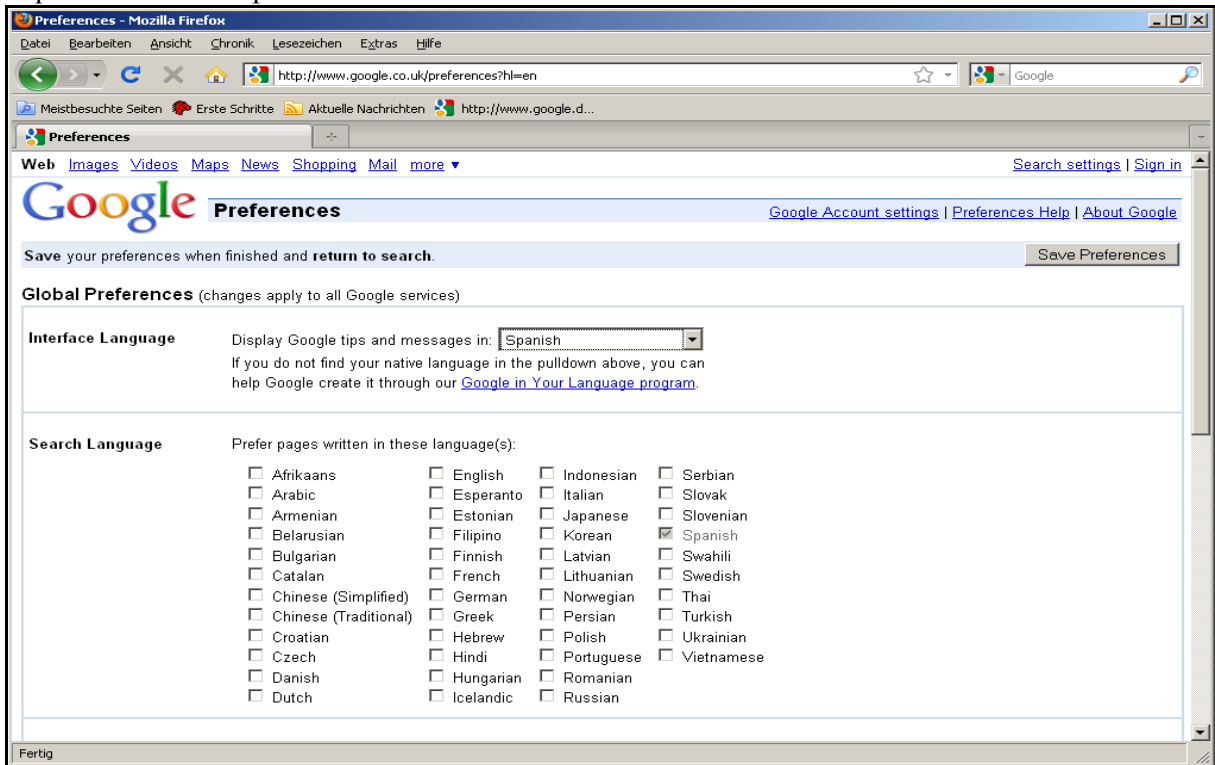


**R5: double performance by load balancing.** Load balancing among several servers is done in a way that the performance is doubled, i.e. with load balancing, the performance for  $2n$  users is the same as for  $n$  users without R5 (load balancing).

**R6: Automated detection and correction of typing errors.** When you type in a word that does not exist, Google detects and corrects the error. For instance, if you type in “requirements prioritization”, Google searches for “requirements prioritization” instead and also informs you of the correction it has made. You are offered to search for “requirements prioritization” also, for the case that you made no typing error, but in fact wanted to search for an unusual word.



**R7:** You can define the language of the web pages searched. This functionality in Google is implemented under “preferences” as shown here:



**R9:** Google "advanced search" allows the “and” and “or” combination of key words. This is currently implemented like this:

