Usability Metrics

BTH745 – Human-Computer Interaction

Usability Metrics

Task Completion

- Usually binary (yes/no, 1/0)
- Did they complete the task or not?
- Can include levels of partial completion
  - yes, partially, no
  - 0-10

Usability Metrics

Time-to-complete (response time)

- How long did the subject take to complete task?
- Often the most important of all metrics.

Usability Metrics

Errors

- Error rate: # of errors per minute.
- Error count: # of error while completing task.
- Can be based on a count or severity rating (eg, 1-5).

Usability Metrics

Efficiency (there are many kinds)

- Time-on-task
- Lostness: how lost is the user?

Usability Metrics

Lostness:

$$L = \sqrt{\left(\frac{N}{S} - 1\right)^2 + \left(\frac{R}{N} - 1\right)^2}$$

- N: # of different screens visited
- S: total # of screens visited (including repeats)
- R: minimum number of different screens that *must* be visited to complete the task.

$$0 \leqq L < \sqrt{2}$$

But usually: $0 \leqq L < 1$

Usability Metrics

- You may weight each metric and sum them up to obtain an overall score.
- It may be useful to normalize some of the metrics first (perhaps as percentages).

Usability Metrics

- SUM (Single Usability Metric) is one particular way to combine metrics into a single score.
- It attempts to provide a standard.
- Compare your interface to any other interface, not just your own.
- However: may not be as well suited to all interfaces.
- It may be better to develop your own combined score.