Noldus
Information Technology

Software tools for objective measurement of usability

Using The Observer for Usability Testing

Usability as a key element of software quality

As information technology pervades society, and more and more people are spending a significant proportion of their working life in front of a computer screen, the usability of computer systems becomes ever more important. Although this is recognized by experts in the field, many well-known software products still suffer from limited usability with associated steep learning curves and high training costs. For the future, as users become more critical, low usability may become a major barrier to the success of new commercial software applications. Lack of usability typically results from egocentric perceptions of designers who forget or lose sight of the fact that there is ultimately an individual who will experience the result of their actions and decisions relating to any aspect of the product, or who think the end user has the same thoughts, reactions, likes and dislikes as they have.

Usability evaluation in a usability lab

User acceptance of technological applications can be measured by a process called usability evaluation. When done early and often, usability evaluations provide feedback which prevents product development from heading in the wrong direction. Note that products can be hardware, software, documentation, training tools, marketing materials, etc. The most effective way to address the demand for user-perceived improvements to products is to perform a usability evaluation in a usability laboratory. A usability laboratory ('usability lab') comprises of video and audio equipment with which the interaction between a user and the system to be tested can be recorded. This equipment is either placed in an observation room overseeing a test area through a one-way mirror ('stationary lab'), or tightly integrated in a compact portable unit ('portable lab') which allows data collection at the user's location. User evaluations in a usability lab are now an accepted method to quickly identify cost avoidance areas, improve internal communications, build team morale, shorten development cycles, and produce better accepted products. Usability labs are becoming a standard facility in most large software firms as well as many corporations with large internal IT departments, such as banks and insurance companies. Usability testing is also increasingly used during the design of electronic equipment with a 'user interface' such as mobile phones, HiFi equipment, VCRs, etc.

Lack of suitable tools

Although usability evaluation in a usability lab has become a common ingredient of the product development cycle, many companies still lack suitable tools to support the evaluation process. Usability testers often use 'paper & pencil' methods to record their observations and base their conclusions on qualitative assessment of the observed interaction between test subject and product tested. The videotapes made during a test are merely used to illustrate findings. However, retrieving the video episode which corresponds with a particular observation is very cumbersome and therefore rarely done in practice. Furthermore, quantitative measures of usability ('usability metrics') have been proposed by researchers but are hardly used in practice because of lack of appropriate tools.

Computer-aided video analysis

The problems sketched above can be solved with computer-aided video analysis, using systematic observation, event recording and quantitative analysis. For this purpose, Noldus Information Technology offers The Observer Video-Pro, which is rapidly gaining acceptance as a tool for usability research. A growing number of companies, including Bell Atlantic, Ericsson, Human Interface Technologies, Microsoft, SAP, Siemens-Nixdorf, Telenor, Telstra and TNO Human Factors, have chosen The Observer as an instrument for product usability testing. This positive response from the market is a clear signal that there is a great demand for software tools to support the usability

testing process. Our answer to this encouraging development is to increase the power and flexibility of The Observer Video-Pro by adding support for new multimedia hardware components.