

Experimental Studies on the Usability of Open Source Web Applications

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Developers of Free Software/Open Source Software (F/OSS) are mostly intrinsically motivated. Some the manifold incentives for their activity are the solution of own software problems, pleasure in programming, self-determined learning, maturation of programming skills, idealism, peer repute and the coin of prestige. Supported by the culture of sharing software and knowledge and by innovative software development methodologies a rich pool of software has been built up. In this regard, the different incentives and the loosely-knit online communities have caused a redundancy, which is indicated by numerous applications with similar functionality. It is difficult for users without expert knowledge to effectively utilize relevant data. Conventional criteria for choice such as manufacturers, price or market penetration are barely available. In addition F/OSS development is inclined to promote power over simplicity because the incentives work better for improvement of functionality than usability. However, neglecting the usability concept seems inappropriate if applications are aimed predominantly at the average user. With comparable functionality and effectiveness the two other constituent parts of the usability concept, efficiency and satisfaction, are manifest criteria for choice. The present work describes experimental studies conducted to compare alternative software products regarding efficiency and satisfaction. Tested are eleven products of four classes of F/OSS Web applications (discussion boards, link farms, picture galleries, and wiki systems). The product alternatives within a class are defined as independent variables. As dependent variables serve processing time required for task completion and subjective software evaluations. The evaluations refer to the seven ergonomic principles of the international standard ISO 9241/10 which were implemented over a server-based version of the questionnaire ErgoNorm (DATech). The completely automated test sequence runs in an intranet environment and is locally secured by a test manager. On basis of the obtained quantitative results the use of five products can be recommended. For the further products no recommendation is expressed. It will be shown whether a qualitative analysis of the questionnaire suggests concrete reference points for the improvement of the products. Finally, it is discussed which production steps are to be carried out to expand the procedure towards remote usability testing of F/OSS Web applications.

The work on this project was supported by Bundeszentrale für politische Bildung (Project FOS)