

Evaluating a Usability Capability Assessment

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1. Why to Evaluate an Assessment?

ISO 13407 standard [1] defines a set of User-Centered Design (UCD) activities and principles through which usable systems can be developed. Still there exist quite a few organizations, which systematically and consciously apply UCD in their product development. Usability capability is a characteristic of a development organization that determines its ability to constantly develop products with high level usability. There have been developed usability capability models, which help to assess areas in the development organization that have impact on its usability capability. The maturest one is the model TR ISO 18529 [2]. [3] KESSU-project aims at improving usability capability of development organizations (see www.kessu.oulu.fi). At first we have conducted usability capability assessments in the organizations. We have noticed that further development of the assessment approach is really needed. The existing literature concerning usability capability assessments is mainly concerned about presenting the structure of the models (constructs and their relationships) and guidelines how to perform assessments (procedures). 'Usability capability model' is anyhow an artifact. Papers concerned with the models seldom approach the models according to the principles of constructive research. One research activity of the constructive research is evaluation [4]. In this experiment we especially concentrated on this activity.

2. How to Evaluate an Assessment?

Usability capability assessment identifies possibilities for improvement actions. The assessment should reveal major weaknesses and strengths of the UCD in a development organization [5]. The assessment has another kind of function, too. The assessment is the basis of the improvement initiative and therefore is in a critical position. The assessment experience forms personnel's attitude toward UCD since it may well be his/her first contact to the UCD. As promoters of UCD

we felt that also the assessment should be conducted in a user-centered way.

Users are the personnel of the organization. Therefore the assessment should be a positive and useful experience to the staff involved. We identified following criteria for the successful assessment together with the users - representatives of the company: (1) The assessment should offer useful and truthful information about the state of the UCD in the organization. After the assessment (2) the important areas for improvement should be identified. The assessment should (3) also motivate people to learn more about UCD and to (4) integrate it into their work. In addition the assessment should (5) increase a positive attitude towards the UCD. The objective of our evaluation of the assessment is to find out whether the assessment fulfills the criteria defined above.

We conducted a usability capability assessment in a Finnish software development company in June 2000. The assessment was based on *UMM (Usability Maturity Model) Process* [5] - a pre-version of the TR ISO 18529. We used questionnaires to collect the information for evaluation of the assessment. We delivered the questionnaires after each event we were in contact with the personnel. The audience answered to the questionnaires first in the opening briefing. Then each interviewee filled one up after the interview. Finally in the feedback session at the end of the week the audience filled up the last questionnaire.

3. Evaluating an Assessment

The questionnaire in the opening briefing examined issues concerning respondents' knowledge about UCD, possible concrete problems the assessment was wished to offer solutions and attitudes the respondents had towards UCD. The questionnaire provided good results. People identified a lot of concrete problems in their work, which could be addressed by the UCD. We also got quite an accurate picture of personnel's level of training and experience in the UCD. Altogether the respondents had a very positive attitude towards UCD.

The questionnaire after the interview examined issues concerning the interview situation: did it include meaningful issues, did the respondents gain new ideas concerning their work and what was the atmosphere like. The questionnaire provided also promising results. Interviewees felt that the interview handled very meaningful issues. Some pointed out that due to the insufficient information provided by the opening briefing they could not prepare themselves well enough. Most of the interviewees reported on gaining new ideas concerning their work. We consider this to be a very positive result. Reported new ideas were mostly concrete and very useful UCD related activities. The interview had had an educational function, which provides some additional value to it.

The respondents described the atmosphere to be nice and relaxed. Almost all were willing to participate again and did not feel uncomfortable though many assessors and a representative of the company present. However the interviews with managers did not succeed as well. They gave also clearly negative feedback to us. Management felt that the interviews did not handle very meaningful issues. The reference model is quite weak dealing with managerial issues and the UCD. It did not offer much guidance for the interviews. Another problem is that the management did not like the interview situation. The managerial interviews should be developed further. They will be done in more two-equals-discussing manner in the future.

The questionnaire after the feedback session examined issues concerning the importance of the UCD in the respondents work. The audience was also asked to comment the results. The questionnaire did not provide that positive results. The respondents defined all the UCD processes to be very important - if not for them, then for the company. Otherwise they criticized the assessment results. According to the respondents many important areas connected to the UCD were not discussed at all in the interviews. The model had limited discussions to certain sometimes even irrelevant topics. Due to that some felt that the results did not describe reality very well. The respondents also criticized that we did not explain well enough the terminology used or the maturity scales presented. We presented the results qualitatively, but the audience wished for the quantitative results also.

4. Discussion

The questionnaires turned out to be a useful tool in an assessment toolbox especially since the assessment approach and reference model used are still in an explorative phase. By using them we obtained useful

information of personnel's knowledge, attitudes and problems related to the UCD. In addition the questionnaires provided the personnel an opportunity to comment the results before the completion of the final report. We assume the questionnaires contributed to personnel's motivation and positive attitude towards the UCD improvement initiative by giving them a chance to point out important issues to be considered in the planning of the improvement actions.

The questionnaires also offered valuable information for the future development of the usability capability assessment. The assessment approach and the reference model used need to be developed further. The opening briefing and the feedback session have to be planned very thoroughly beforehand. The terminology used must to be explained very carefully to the personnel. In the feedback session, although the results are very preliminary, the assessment team should be able to offer tangible suggestions for improvement actions. In addition especially the management interviews need to be done in a more sensible manner in the future.

The results are only from one experiment. The questionnaires will be improved further based on this experience. In addition it should be noted that the questionnaires offer only preliminary information about the successfulness of the assessment. The assessment process and its consequences in the organizations are to be studied further. Next step to gain feedback of the successfulness of the assessment is to interview key personnel of the company after a couple months. By that time more tangible evidence can be obtained whether we succeeded - fully, largely, partially or not at all.

5. References

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