Evaluation of Digital Repositories from an End-users' Perspective:
The Case of the reUSE project

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Demonstration

Along with the long-term preservation of digital publications the next important goal is public access and in this regard user-centred design of digital repositories. Several repositories worldwide have shown that users are their most critical element. Repositories as such are valuable only if used. The success of the repository is often influenced by the content and the design of the interface. The lack of content is the main reason for unsuccessful repository as well as design-centred interface. Many digital repositories' interfaces are design-centred rather than user-centred. Quite a few users claimed that the search interface was too complicated and distracting and that specific jargon, wording and explanation within the certain interface did not help them at all [1][2].

This demonstration presents the results of end-user survey carried out in the reUSE project, in which we examined the usability of three different digital repositories from Austria, Estonia and Germany. The reUSE is a cooperative project from eContent scheme and involves national and university libraries and universities from Austria, Estonia, Germany and Slovenia. Evaluation of the digital repositories was one of the main goals. Overall aim of the evaluation was to make user-centred repositories which will be at the same time most efficient in technical and organizational regards.

An end-user evaluation was carried out in reUSE project demonstrators' libraries of the three repositories and because obtained data are confidential, they will be marked only as Case 1, Case 2 and Case 3. *Case 1* presents digital repository of university library and their specific is that they provide digital material also for blind users. At the moment of evaluation there were about 3000 digital documents in the repository. Their most important users are students, professors, scientists and librarians. *Case 2* is the repository of the National library with much broader population in terms of age, profession, and use habits. Since it has only been running for a few months, it is understandable that contained merely 196 digital documents. *Case 3* is again running by university library and is the oldest digital repository evaluated within the project. At the time of the end-user evaluation nearly 2800 documents were there (especially thesis and scientific papers). Their end-users are coming from the university environment with very specific needs for scientific material and scholarly publications. Since it was very complicated and expensive to carry out a case study in special test rooms and because the survey had to be done in national languages, we designed a special questionnaire for end-users based on ISO 9241-11:1998 (Usability standard) [3] and ISO 13407:1999 (Human-centred design processes for interactive systems) [4]. The questionnaire consists of a demographic part and of the questionnaire, which is the main focus of the survey. The specific research objectives were to obtain information on content, recognition, performance and efficiency, personal and subjective perception and error tolerance. An intensive test phase was carried out in June 2005 and in the end of September 2005. It was expected that during the summer of 2005 implementers would fill the repository with additional content which should influence the results of the 2nd evaluation period. Paper-based questionnaire were sent to the Case 1 and Case 2 libraries while for Case 3 the same questionnaire was transformed into an on-line form. Librarians of each repository helped to disseminate the questionnaire among their users. In order to get a stable and representative sample we required approximately 100 questionnaires of end-users. However, this goal turned out impossible to reach, especially for Case 3 because it was very difficult to retrieve data from on-line questionnaires. It was very hard to attract end-users to fill in the questionnaire via the digital repository's interface. Paper based questionnaires and personal contact still provided more efficient feedback. Besides, paper based questionnaires were more completely filled-in than the on-line ones. For the detailed data analysis software Remark Office OMR for statistic researches was used.

Overall, end-users were happy to have a digital repository and to use it at their work or in studies, but they argued that there are too few items in the repositories. As expected, end-users in the national library are older and of different ages in comparison to the end-users of university libraries. However, the majority of end-users were born in the 60s and 70s. Further analysis shows that most of the end-users have intermediate experience with computers and on average use the repository only a few times a year. The number of novices is very low.

Data show that most of the Case 2 end-users learned about the repository in the library (in the 1st phase 79% and in the 2nd phase 77%) while end-users in the university library found out about the repository on the internet (Case 1- 41%, Case 3 - 70%). It is interesting that those end-users who had met with the digital repository via the web (for example in Case 3) had more difficulties accessing the reUSE digital contents than those who were trained in special courses offered by the library staff. The results indicate the impact and the great influence national libraries still have on their users. Therefore, a strong dissemination should come from their side; they are still in position to raise the awareness of a wider population and educate their end-users about proper and advance use of the digital repository.

The important findings from the end-user evaluation are the following:

1. PDF (Portable Document Format) is the most preferred format in all three repositories.
2. It is extremely important that the same e-document can be also found in the library catalogue.
3. End-users from different repositories have different preferences regarding the searching criteria. While end-users from Case 1 and Case 2 prefer to search 'by author' followed 'by keywords', end-users from Case 3 prefer to search 'by title'. It was surprising that the criteria 'full-text search' reached only 4th position. End-users expressed their wish to search 'by subject' as well.
4. End-users were actually looking for very different content (again there are differences between the university and national libraries). For example end-users wish to find the Bible, manuscripts, old literature, books, magazines, statistics, legal acts, scientific publications, movies, etc.
5. Approximately half of the Case 2 end-users stressed (in their comments) the need to have a list of repository content by subject and a list of new documents from the last month.
6. End-users use the content of the digital repositories for studies, work and scientific research. Some of them use it as well for self-education, hobbies, business and commercial purposes.
7. Although end-users agreed that the content in the digital repository is very important, 75% of end-users from the national library claimed that they will need to check the paper material as well.
8. Around one third of all end-users were complaining about the numerous details and steps needed in order to use the digital repository properly, but most of them (Case 1- 81%, Case 2- 76%, Case 3 -52%) were familiar with the designations and were content with overall design of the website.
9. It might be good for all repositories to visually mark the current entry location (and hits as well) by highlights colour.
10. The layout of the interface should be clear and simple enough to be usable for different kinds of users.
11. End-users expressed little interest in value-added services. The exemption was end-users from Case 3 where they were aware of usefulness of the value-added services (66%), but were not willing to pay for them.
12. End-users with a background in human sciences and architecture were not so enthusiastic about e-documents and still prefer printed material. This was perhaps one of the most surprisingly finding.
13. End-users from all evaluated repositories (Case 1- 87%, Case 2- 58%, Case 3- 71%) would like to be able to adjust the amount of on-screen information to their needs.
14. 41% of end-users from university libraries and only 18% of end-users from national library would like to be informed by e-mail about new entries in their digital repository.

Our findings from both evaluation periods show that it is very important what purpose the repository serves and who accesses it. While in institutional digital repositories more professional publications should be available, there should be heterogeneous publications for different kinds of end-users using the repositories run by national libraries. Additionally, there is a strong need to increase the awareness of the usefulness of value-added services among end-users. Outlined advantages and specifics of reUSE repositories might serve as a guide for developers and implementers to improve their systems.

References

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