ScattPort light-scattering internet information portal: present state and further development

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The internet portal ScattPort not only offers varying information on the topic of light scattering, like upcoming conferences, open positions, and a comprehensive list of computer programs. Additionally, it can serve as a communication platform for scientists. It is going to be improved within a recent, DFG-funded project. Here, we would like to outline the aim of the project and to invite the light-scattering community to join our efforts for improving the online information source.

SCATTPORT: PRESENT STATE

In March 2009, the light-scattering information portal ScattPort [1], the development of which is funded by the German Research Foundation DFG, went online in its actual form (see Fig. 1). Since then the access numbers show a steadily increasing interest in the pages: in one year, they went up nearly 100%, with an average of about 3000 visits per month and 2000 hits per day.

ScattPort offers various pieces of information in regard to the topic of light scattering – like latest news, upcoming conferences, vacant positions, lists of related webpages and homepages of scientists working on the field of light scattering, etc. Another focus is on a sorted list of available software for the simulation of light scattering. This list contains more than 250 programs. Additionally, a search option based on a recently developed categorization scheme for light-scattering software helps interested users to find fitting codes for their scientific problems [2].

A key characteristic of the technical realization of the ScattPort website is the usage of a Content Management System (CMS). Here the open source software Joomla [3] was applied. Using a CMS not only simplifies the daily administration of the webpages and their contents. It additionally allows the integration of registered users worldwide into the publishing process. Interested scientists can apply for a login-account for the CMS which enables them to publish their own information online in a very simple way. Special knowledge about HTML is not necessary. On the other side, a CMS like Joomla puts the internet presentation in a more or less 'rigid frame' – which can have negative side effects on the usability.

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Therefore the next step within the ongoing development of ScattPort is to improve its attractiveness for the users. The idea is to apply the latest knowledge about user-friendly interfaces (see below), as well as the implementation of new contents according to the users demands. Additionally, new functions are planned to be added to the existing ones offering, for example, a 'Wiki' function that will allow for establishing a comprehensive encyclopedia around the topic of light scattering.

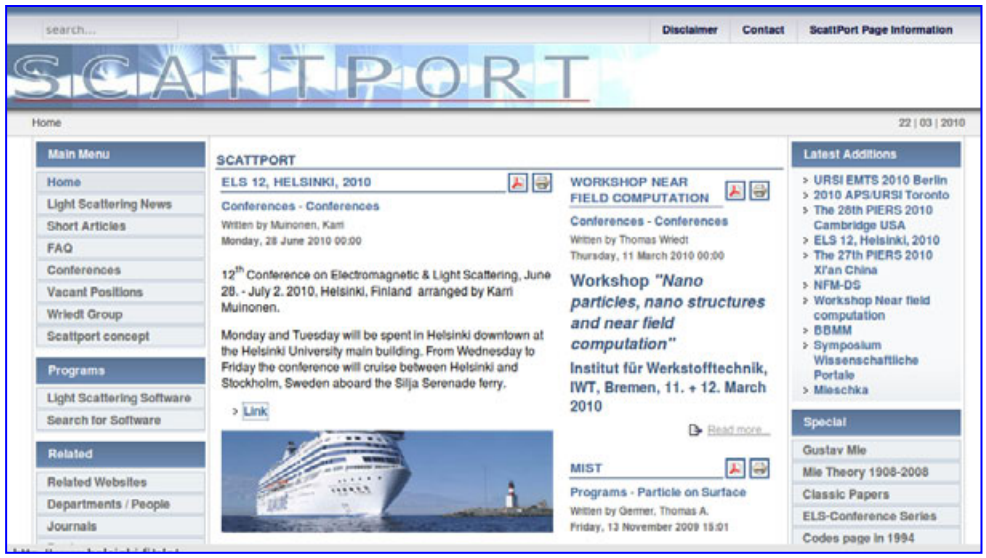

Figure 1. Screenshot of the ScattPort Internet Information Portal.

USABILITY

Definition of Usability

J. Nielsen defines usability as follows: *"Usability is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process."* [4].

It consists of five quality components:

- Learnability: How easy is it for users to accomplish basic tasks the first time they encounter the design?
- Efficiency: Once users have learned the design, how quickly can they perform tasks?
- Memorability: When users return to the design after a period of not using it, how easily can they reestablish proficiency?
- Errors: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
- Satisfaction: How pleasant is it to use the design?

Importance of Usability

In the first few seconds, users decide if a website is good or bad. The greatest factor for this decision is the way the information is presented. If a website is difficult to use, people leave or close it. If users cannot find the answers to their questions or encounter errors on the website, they leave it, too. Therefore, usability is necessary for the handling of a website. For a scientific internet presence this is especially important: when users cannot find the needed information, they cannot discuss it either.

Improving the Usability

A user connects the interaction with a system always with certain targets. From this several tasks can be defined, which give a degree for the usability. The degree of the usability consists of effectiveness, efficiency and satisfaction (ISO 9241 Part 11). To get a high standard of usability the process of the Usability Engineering has to be used [5].

Usability Engineering is an evolution process and there are many methods for studying usability. The most common are *user testing* and the *interview-methods*. Attention should be paid to get hold of some *representative users*. The aim is to create a design which has a high standard of functionality.

Application to ScattPort

As a good usability is a key factor for the attractiveness of internet pages it is planned to overhaul the ScattPort Information Portal following the latest developments in usability engineering as drafted above. For this, we plan a survey at ELS XII. This survey will allow learning more about the users of the portal, how they use the portal, the specific information they look for and their opinions and impressions about the portal.

The survey will concentrate on the following questions:

- Were users able to find the information they were looking for?
- How satisfied are users with the portal?
- What experiences did users make with the portal or similar sites?
- What do users like best and least about the portal?
- What frustrations or issues have users had with the portal?
- Do users have any ideas or suggestions for improvements?

Additionally the survey can be used to allow users to rate or rank the current features of the portal.

CALL FOR PARTICIPATION

We would like to invite the light scattering community to join our efforts for improving the ScattPort light scattering information portal. For the ELS XII conference, we will prepare a questionnaire to ask for opinions, critics, suggestions, and demands. Please feel free to provide us with any comments.

ACKNOWLEDGEMENT

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