

Case study: Usability analysis of the ACM Portal

Making a UI more invisible increases user satisfaction and important transactions

Hal Shubin

May 2004

The problem: An excellent product, but poor usability



ACM is one of the oldest computer societies and the Portal is their flagship product. It is a searchable online library with two components: the Digital Library, with full text of everything they have ever published, and the Guide to Computing Literature, which includes the Digital Library and citations to outside works.

Users came to the Portal with expectations based on other search sites. They loved the content but found the Portal hard to use because it didn't match those expectations and because they didn't understand the difference between the two components. ACM asked me and a colleague, Ron Perkins, to recommend ways to improve the user experience.

Our investigation turned up problems in the user interface (UI) as well as in the business model. ACM implemented most of our suggestions, making the UI more invisible. This lets users get their work done without the product getting in the way.

Our solution: Understanding the users and iterative usability testing

We used our expertise in Web design to develop a three-step project plan to understand and correct the problems:

1. An *expert product review*, in which we identified the problems that ACM could fix quickly.
2. A *usability study*, where we observed users on the system and identified deeper problems.
3. A *follow-up survey*, where we discovered how well users liked the new design.

We started by identifying types of users and the tasks that they do. This gave us a perspective for reviewing the software and helped us recruit users for the usability study. Recommendations included changes to the UI and the underlying business model.

ACM was very pleased with the results. They told their members:

Based on [user] feedback and an extensive usability study, the new Portal interface offers significant improvement in searching, visual clarity, help text, and relevant information including links to FAQs and more. [Read the whole letter](#) at the ACM Web site.

voice 617 489 6595

fax 617 489 7395

hshubin@user.com

www.user.com

Users were pleased as well as we saw in usability testing. Two typical comments:

- > *The new design rocks! Great work.*
- > *In the new interface it is much easier to find what I was looking for and figure out how to get to the full text of the necessary article.*

Results: Improved usability, satisfied users and increased transaction rates

ACM worked hard, modifying the system based on our recommendations as we went from one step to the next. We even modified it *during* the usability study, testing different descriptions of the site. Along with improved user satisfaction, ACM found that transactions rates improved. Members were saving more documents to their “binders” to share and refer to later.

Improvements based on our recommendations include:

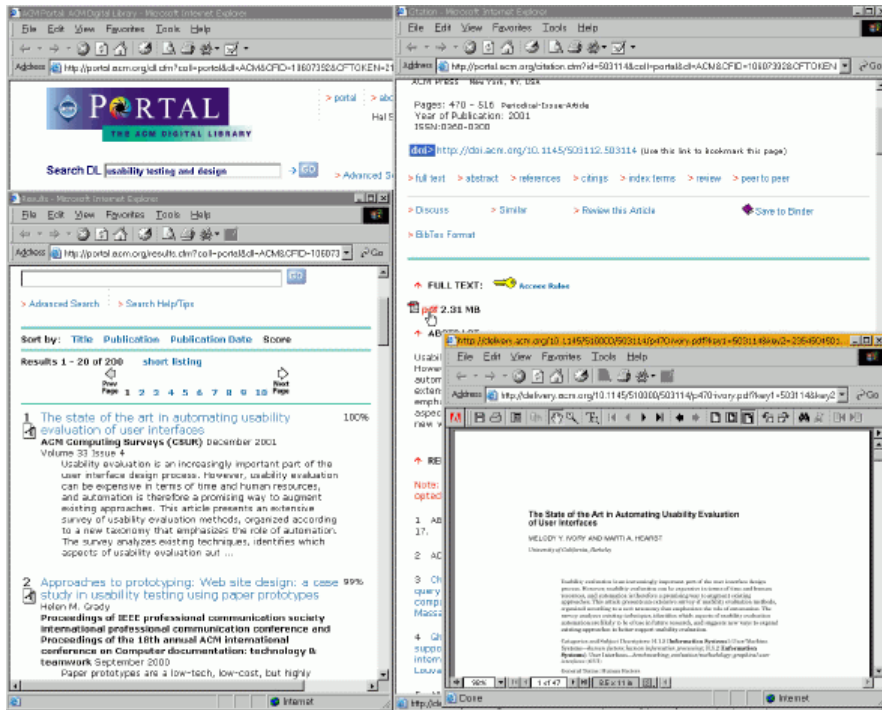
- > *Easier searching.* The Portal initially treated search terms as a single phrase instead of as a set of words. This was confusing because it was different from Google and other search sites. By treating requests as individual words, the Portal now works as users expect.
- > *Simpler windowing.* As shown in Example 1, the Portal originally used four windows in a search. While there was a reason for doing this, it was too much clutter for most users. We suggested having a single window, but ACM kept two: one for searching and one for the full text document. Users told us that this was a big gain in usability.
- > *Faster to see full text.* Pages are now better organized. Search results have links directly to an article’s full text rather than taking users to an intermediate page. Example 2 shows how information is now easier to find on the Citation Page.
- > *More is available for free.* We convinced ACM to change their business model and let people do more without subscribing. People sign up for a service when they find value, not just when they’re prompted to. After much discussion, ACM also agreed to consider combining the two parts of the product because it was a business distinction, not a user one.
- > *Increased clarity.* We rearranged the home page to help people find what they want faster. The text uses familiar terms rather than technical ones.

The result is a system that matches users’ expectations and helps them get their work done. Our online survey showed that

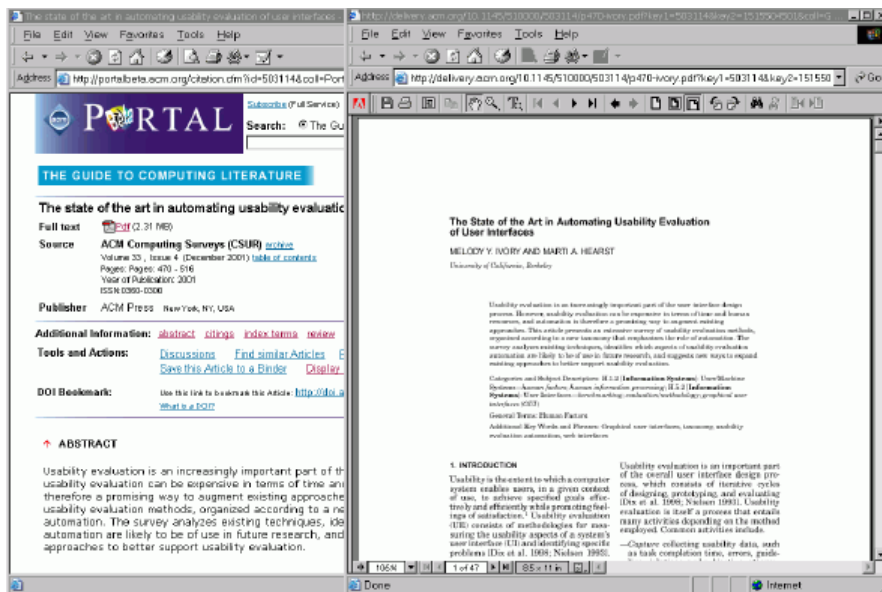
- > 58% of users would increase their use of the Portal because of the redesign.
- > 54% said they understood the organization of the site better.
- > 90% of users with an opinion said that the new search design worked as expected or better.

Example 1: Reduce the number of windows

There are now just two windows for users to manage: one for searching (instead of three) and one for the actual document. Users loved this change:



Four windows were too much to manage



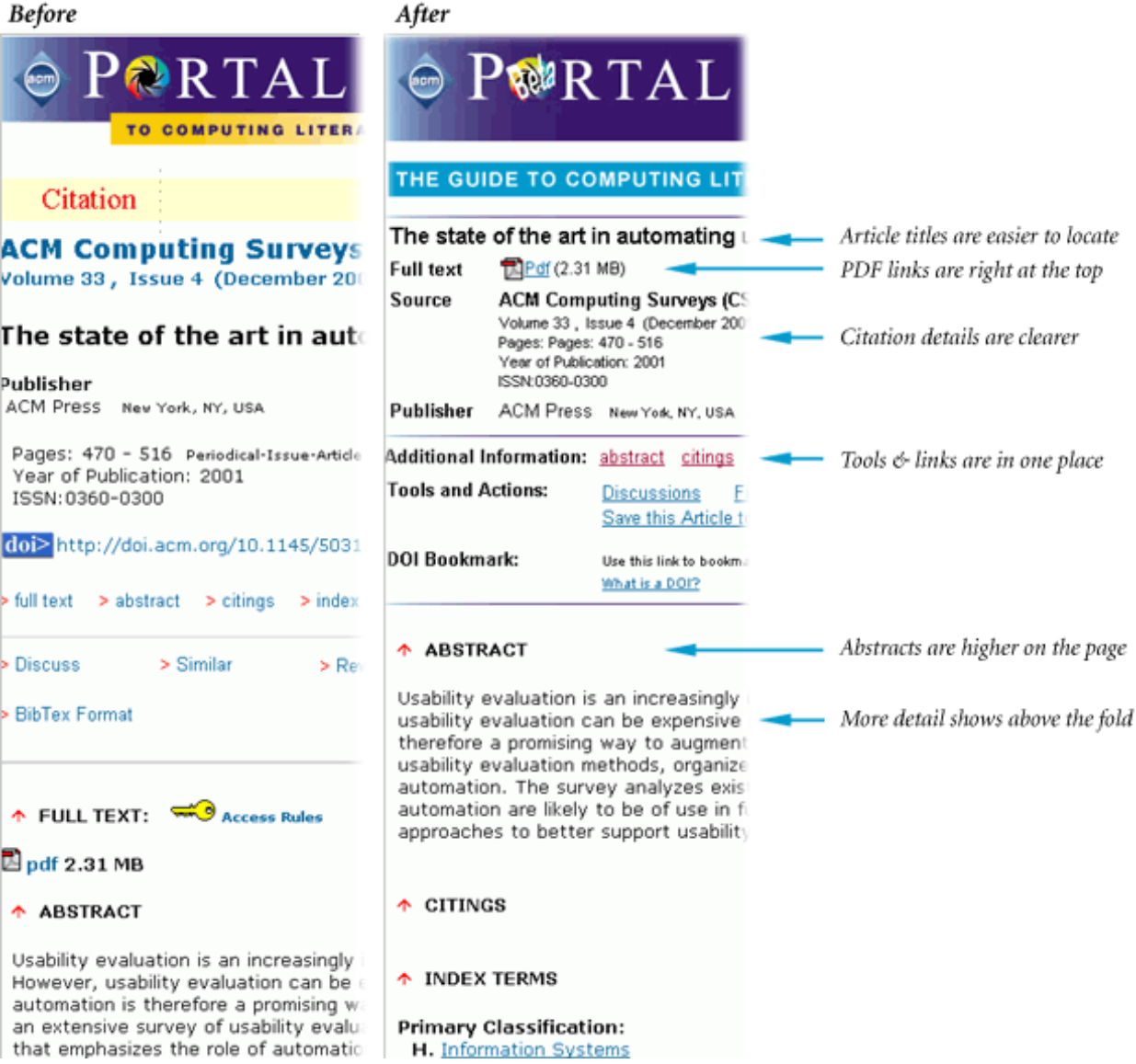
Two windows make work easier for users

Example 2: Getting to full text faster and clarifying document information

Based on our research, we knew that many (or most) users wanted to go right to full text. Links to the full text of documents were not originally on the search results page, they were on a separate

Citation Page, with details about the document’s place in the document library. The new design puts those links in the search results, saving users a page transition. Those who want the rich details of the Citation Page can still go there.

We also made recommendations to improve the citation page itself. The initial version (left below) didn’t show the hierarchy of information clearly, and required too much scrolling. The new version (right) is clearer and more compact.



Summary

The only way to know that your product meets user needs is to clearly define what types of users you have and what they will do with the product, and then see how they react to the design. ACM saw measurable improvements in their flagship product through the process. Users told us that the design now works the way they expect it to and said that they would use it more in the future.

Contact Interaction Design at 617 489 6595 or hal@user.com to see how this process can help you.