Persona-based development of a new discovery system using MERESCO open-source components

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Introduction
Do you know Sophie? Sophie is studying for a Master’s degree in Architecture, Urbanism and Building Sciences at TU Delft. She regularly visits the Architecture Faculty’s library in search of inspiration – books with plenty of photos, of course, but also with background information about the featured buildings. Sophie is often to be found browsing the shelves for something that will spark her imagination. She's a very visually attuned person. If someone recommends a book to her, she’ll often remember only the subject or architect and what colour the cover was. So one of her preferred ways of tracking down a book is to go to amazon.com and do a search, because she can then browse through thumbnails of the hits until she spots what she’s after. Once she's found the book on Amazon, she copies and pastes the ISBN number into the library catalogue to see whether it’s there. Sophie has tried searching architecture databases, but finds it unrewarding, because many of the interesting articles aren’t available online. She doesn’t much like the idea of having to go down to some musty basement – that is where the ‘stacks’ are, isn’t it? – to dig out a journal. So, if it isn't online, she gives it a miss.

Searching for scientific information online is like truffle hunting, but without the pigs: you have no idea whether, how and where you’re going to find what you’re after.

Sophie, student

Maybe you recognise Civil Engineering student Roger. He has to write a paper in preparation for his thesis. His supervisor is always telling him how important good literature study is, so Roger has spent an entire day looking things up in the library and has produced a list of titles. He's not very confident about his list, though: the literature he's found all seems rather old ... what if it's outdated? And, although he unearthed six relevant books, he could only find four articles. Which is making him wonder whether he used the right search terms and selected the right database.
Although they both use the search systems provided by Delft University of Technology Library, Sophie and Roger are not alike: they are individuals, with their own needs and expectations. Yet we are apt to talk about what the user thinks or wants, as if all users were the same.

**Personas**

‘User is a four-letter word,’ Tamara Adlin wrote in her blog (Adlin, 2007). If we think of all our clients as clones of ‘the user’, we inevitably fall short in the services we provide. In fact, by ignoring our clients’ individuality, we belittle them. It is better to create a product tailored to suit one individual whose needs and preferences are known, than to develop a product for a broad target group (Cooper, 2004).

In 2008, TU Delft Library began building a new search system, which was given the working title Discover. The aim was to create something that was more in line with the needs of the library’s clientele. Ideally, we wanted a system that was based not on federated search (because of the various drawbacks identified in Joint, 2009), but on an integrated index with metadata from various sources.

At the outset, we already had an extensive wish list, plus plenty of ideas and plans. However, we didn’t immediately embark on realisation. Rather, we began with a context mapping survey of our three main client groups: university students, university staff and external business and non-profit clients. The outcome of the survey was six personas: detailed descriptions of fictional clients, each with a name and a photo (Kistemaker, 2008). We then drew up a schedule of requirements with the personas in mind, as opposed to a single anonymous ‘user’. The method by which a number of appropriate, reliable personas were defined from the survey findings is outside the scope of this article. Anyone with an interest in that matter is referred to the books by Cooper (2004) and Pruitt (2007).

From Sophie, we knew that we needed to invest in book cover visualisations. Thumbnails should appear alongside the title data and with the search results, from the earliest stage possible. Contrary to what were inclined to believe at the outset, a book cover is not merely decorative; it is an important aid to identification. From Sophie’s viewpoint, the search system should ideally enable her to find not only books, but also articles and images. To help Roger satisfy himself that his research has been thorough, we wanted to provide a graphical representation of his search activities, in the form of a mind map. By looking at the mind map, his supervisor would be able to suggest any lines of investigation Roger may have overlooked. We also liked the idea of using web2.0 techniques, such as reviews, ratings and user recommendations. If a title had a good rating or review, Roger could be more confident that he was on the right track. As well as Sophie and Roger, two staff personas and two external client personas were developed.
Personas are useful in various ways and at various levels of the design process. Pruitt, 2007:

- Personas make assumptions and knowledge about users explicit, creating a common language with which to talk about users meaningfully.
- Personas allow you to focus on and design for a small set of specific users (who are not like you), helping you make better decisions.
- Personas engender interest and empathy towards users, engaging your team in a way that other representations of users cannot.

As well as being inspiring and motivating, personas make the design process more fun.

**MERESCO open-source software**

TU Delft Library is an innovative library, committed to the principle of digital service provision. We have our own compact ICT department, called Digital Product Development (DPD). However, we do not have sufficient in-house knowledge and capacity to create a library search system ourselves. In 2006 and 2007, we accordingly looked into the possibility of using an existing system. The commercial products were prohibitively expensive, while the open-source products, such as VuFind and Summa, were not ready. Then a colleague pointed us to MERESCO, an open-source library featuring components for (meta)data management (Seek You Too, 2009). MERESCO has software components for harvesting, xml crosswalks, normalisation, saving and indexing metadata. Another feature of MERESCO is a facet-index, which both Sophie and Roger are likely to find useful. We therefore decided to work with Tilburg University to jointly develop a search system utilising MERESCO. Everything that MERESCO didn’t provide, such as a user interface and a link to our Integrated Library System (ILS), we created ourselves, or had built by the company behind MERESCO, Seek You Too BV.

**Discover TU Delft Library**

At the end of March 2009, about eleven months after the first test installation, the open beta version of our new search system, Discover, was launched. The response has been very positive. At the start of the new academic year, all first-year students are to be introduced to Discover as part of their interactive library instruction. In October 2009, the system will be presented to the rest of the university, after which Discover 1.0 will enter production and the Discover search box will feature prominently on the library’s homepage.

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1 [http://discoverbeta.tudelft.nl/]
Discover currently incorporates not only library catalogue records, but also the TU Delft Repository, ABSIS: a bibliographic database of architectural articles and Elsevier articles. For the rest of the year, our main task will be adding metadata. The Elsevier collection will be completed, and we hope to also add other publishers’ metadata (negotiations start shortly), other institutional repositories and open-source content available from, for example, BioMed Central, arXiv and DOAJ.

The advantages of using open-source software

The source code specially developed for TU Delft and Tilburg University has also been made available as open-source software. By publishing the code, the two universities hope to lower the threshold for other university and non-university libraries looking for an integrated search solution. While we intend to look for new partners first within the Dutch consortium of university libraries and the Royal Library (UKB), we are also happy to forge links with similar establishments in other countries. MERESCO can now be expanded by addition of the MERESCO4Lib library system, which will be based on components developed for TU Delft and Tilburg University. MERESCO4Lib is to include a test installation, complete with a demonstrator user interface and links to Ex-Libris’s Aleph and OCLC’s LBS. Along with the reuse of software components, one of the main aims is the sharing of knowledge in the field of integrated searching.

Has the use of open-source software helped us to create a better product for Sophie and Roger? Don’t commercial products offer plenty of scope for adapting the configuration and the user interface? Looking back, my feeling is that we couldn’t possibly have made the enormous number of major and minor improvements that we did make, particularly in the presentation of catalogue records, without having
a completely open system. With no library jargon to confuse them, Sophie and Roger get to use an interface whose buttons do what it says on them, and don't have to contend with annoying pop-ups or intermediate screens.

**The disadvantages of using open-source software**

Many open-source packages have large user-communities, whose members contribute to ongoing development and provide input. Unfortunately, that is not yet the case with MERESCO. There have so far been relatively few implementations and knowledge about the product is largely concentrated within Seek You Too. In theory, developers at TU Delft could participate in work on new versions of the MERESCO core components, but in practice we remain dependent on Seek You Too where these components are concerned.

**Conclusion**

Discover TU Delft Library 1.0 will shortly enter the production environment. Even though our to-do list still includes the creation of a fair amount of extra functionality, the system is a huge improvement on our old OPAC. The personas we developed have enabled us to quickly and confidently arrive at decisions regarding the addition of functionality and the definition of priorities. By using open-source software, we have learnt a great deal and created a customised solution. It was worth it!

**Postscript**

Sophie finds herself a quiet spot in the new Library Learning Centre at TU Delft. She needs to prepare for an exam, and there is too much to distract her back at her digs. According to the library's website, the book she needs for her exam prep is still available on a one-day loan. A single mouse-click is all it takes to reserve the book. It will be waiting for her at the loans desk within half an hour, the system tells her. Just long enough for a coffee before sitting down to work. In the attractive, bustling coffee corner, Sophie bumps into Roger, who has just started work on his thesis. Before leaving home, he used the library website to locate and download a number of highly relevant recent articles. Now he has come in to collect a few books. Over a coffee, Sophie and Roger get talking ... and new chapter begins.

**References**


Cooper, A. (2004). *The inmates are running the asylum*. Indianapolis, IN: Sams.


Picture of Sophie by Dr. Hemmert (CC-by-nd), Retrieved from [http://www.flickr.com/photos/tommyhj/105893361](http://www.flickr.com/photos/tommyhj/105893361)