Papers

When I retired I was faced with the task of cleaning out the three file cabinets behind my desk. It was easy to ditch the old catalogs and project proposals. But when it came to the folders full of papers that I had gathered over 33 years, the entire process slowed to a walk. The papers on Raman and Brillouin scattering, related to experiments and projects long past, were easy to toss. But I couldn't dismiss many papers on diffractive optics and all of my materials on optical design and optomechanical engineering. Now, in the basement, there is about a meter thick stack of the file folders that I can't part with.

But those are not all the papers I possess. As we finished our work on the SPIE Tutorial Text on diffractive optics many of the papers I relied on were available as PDF files from the Georgia Tech library and could be downloaded directly to my computer. When I switched from diffractive optics to ultrafast optics, there were no additions to my meter of journal papers because those papers, along with the data and their analyses, reside on my Macintosh.

When I started graduate school, I began to hoard papers. With the Xerox machine now available beyond the copy center of the library, I copied anything related to my research. It was our informational security blanket that I held onto after graduation. This intellectual hoarding, whether the hoard exists as a set of papers stapled together and filed in a folder or as a collection of .pdf files sitting in an electronic folder, becomes a problem. It is not easy to know what you have, find what you need, and then read what you've found, whether it is in my stack of folders or on my hard drive.

Recently a new type of computer program has surfaced. It is an information or workflow management program that resembles a database program, but its purpose is to organize a specific type of content and permit the user to manipulate the content. For example, digital image management programs like Apple's Aperture and Adobe's Lightroom manage the output of digital cameras by storing the original images (masters) in a program library. Then using versions of the masters, the photographer can rate the photos, modify the images without changing the masters, and then print a selection of images or post them on the Web. These programs have been a godsend to photographers who shoot hundreds or thousands of pictures by keeping them from being overwhelmed by the work they have created and providing the capability to manage their workflow systematically.

A similar program has been created to manage a different type of content: research papers. The program, called Papers, is written for the Apple Macintosh by two programmers, Alexander Griekspoor and Tom Groothuis, who are life scientists at the Netherlands Cancer Institute. The program design reflects their experience working with the technical literature. This year they won the Best Mac OS X Scientific Computing Solution. The application provides a consistent method for dealing with the papers we so easily acquire. For those working in the medical field, a search engine for a paper repository, PubMed, is built into the program.

Once the papers are imported into the Papers library, they can be sorted into folders, called Collections, which are based on topics defined by the user. The Collections are populated by dragging papers onto the folder. You can also establish a "smart" collection that consists of all papers that fit specific criteria (e.g., authors, dates, topics, journals, etc.), so that when new papers are imported, they are automatically added to any smart Collection with the appropriate criteria. With some effort, papers existing on a computer can be identified, assembled, and organized. Then the contents of the papers, not just the title, abstract, and authors, can be searched because Papers uses the Mac's indexing system. Although a paper can be printed out at any time, most researchers will probably find the full screen mode should be sufficient for their purposes. You can get a full description of Papers at http://www.mekentosj.com/papers/ including QuickTime movies that demonstrate the major features of the program.

Some publishers of papers provide a virtual library for their users, but most researchers get their papers from more than one source including their academic libraries, so this type of application can be an important tool in their research project toolbox. Although this is a commercial product and currently runs only on Apple Macintoshes, this commentary is not intended as an advertisement. Rather, I want to describe a new and inexpensive tool for managing this flood of information we encounter these days. Something like this should become available for the PC in the future. And whether it is books, technical papers, music, or other content, these applications provide a much better solution to storing information than our shoeboxes of photos or the three file cabinets behind my desk.

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