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Posted
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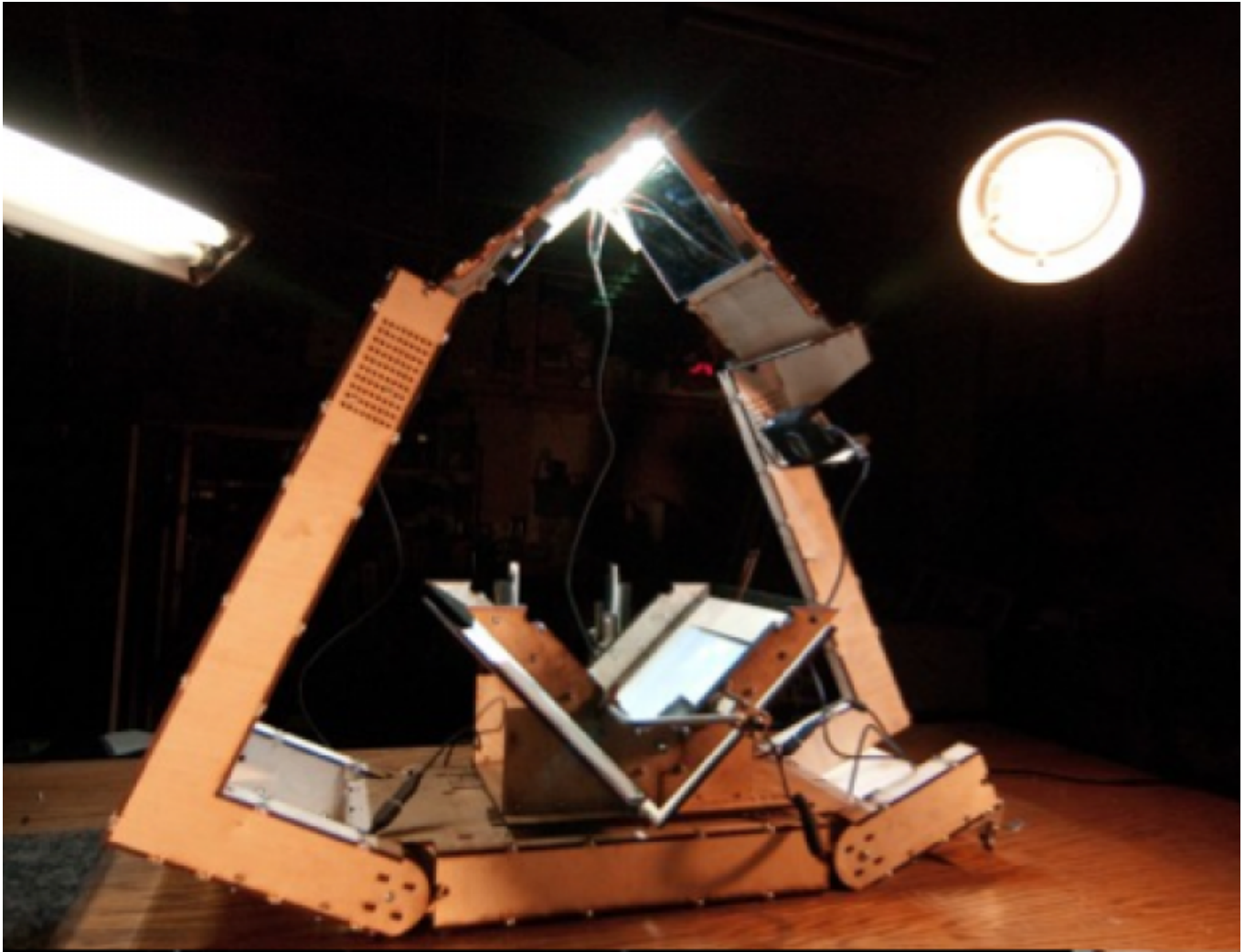
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DIY Book Scanning Takes Off

The rise of a global commons devoted to the cheap scanning of books for personal use.



As a grad student, Daniel Reetz was starting to choke on the high prices being charged for his textbooks. Then one day he had an epiphany: it would be cheaper to buy a good camera and photograph a textbook than it would be to buy the textbook itself.

That brainstorm sent Reetz foraging through dumpsters, literally, to find the materials to build his own inexpensive book scanner. It took three days and \$300 in out-of-pocket expenditures (for the cameras) but in the end Reetz put together an ungainly apparatus that can scan a 400-page book in 20 minutes. It consists of two lights, two Canon Powershot cameras and a few pieces of wood and acrylic.

He had to find a way to synchronize the flash of the two digital cameras and he had to get a Russian programmer to write an open source application that can edit and format page images into a single file. But Reetz's DIY ("do it yourself") breakthrough worked! What happened next is a stunning demonstration of the viral capacities of the Web and the power of self-organized commons.

Reetz prepared a 79-step instruction manual that describes in meticulous detail how to build your own book scanner, and in April 2009 posted it to [instructables.com](http://www.instructables.com/id/DIY-High-Speed-Book-Scanner-from-Trash-and-Cheap-C). (<http://www.instructables.com/id/DIY-High-Speed-Book-Scanner-from-Trash-and-Cheap-C>) Within weeks the manual had attracted more than 400 comments that suggested improvements in the device. This spurred Reetz to start a new website, [DIYbookscanner.org](http://www.diybookscanner.org). (<http://www.diybookscanner.org>), which in only eight months has attracted a worldwide community of amateur book scanners.

Historically, one problem with book scanning is that it is so darn expensive and cumbersome. Only professional libraries or blue-chip projects like Google Print can afford a \$50,000 book automated scanning device. It's true that anyone can buy a cheap flatbed scanner to scan photos or documents, but such machines are exceedingly slow; they could take up to three hours to scan a single book. They also require you press the book flat and damage the book spine.

A new global commons of DIY bookscanners is now innovating where markets decline to go. "Our community has developed a whole ecosystem of scanner designs ranging from crude and expedient to polished and highly sophisticated," the group's website explains. "We've also helped develop and document free, Open-Source software to post-process the images. Our members include programmers, mechanical engineers, historians, book lovers, copyfighters, and people who've never handled a soldering iron."

Actual participants on Reetz's website explained that they got into DIY bookscanning for:

- Saving family history documents
- Format-shifting for the print-disabled
- Archiving rare books
- Shrinking the space that a huge collection of physical books occupies
- Saving on the price of college text books
- Increasing access to out-of-copyright works from libraries
- Seeking a cheaper, more book-friendly method of scanning
- Seeking a mobile alternative to hundreds of pounds of reference books

When I saw Reetz at Public Knowledge's World Fair Use Day (<http://wfud.info>) last week, he said that a guy from a small village in Indonesia had built a DIY book scanner, based on the online instructions. He used it to save hundreds of hand-written holy books that were also filled with records of births, deaths and land records. "He built his scanner out of junk to save his village's cultural memory," said Reetz. Another person is scanning 36,000 pages of his town's high school yearbooks and putting them online.

Reetz raves that "digital books change the landscape" because it makes "hard-to-find, rare and out of prints books" more accessible. Digitization makes possible "a greener future with more books rather than fewer books. More access to information, rather than less access to information. And maybe, years from now, a reformed publishing/distribution model (but I'm not holding my breath...)."

There are now 280 members in the fledgling global commons of DIY book scanners; some 30 to 50 of them have built their own scanning devices. Volunteers have made a variety of "post-processing" software programs that help format and edit scanned pages. Some have developed special "de-warping" algorithms to compensate for pages that scan at funny angles (because the scanned page is not flat, for example). Another friend wrote a program that can convert page images into a pdf file.

Some people in the publishing trade are quaking in their boots that this is a "Napster moment" for books. Home-made book scanners can only be about ripping off books, they fear. But under existing copyright law, the "first sale doctrine" declares that you can do what you want with a legitimately purchased book or DVD. The first sale doctrine is what enables libraries and video rental stores to exist. Most personal, noncommercial uses of a book or DVD – including copying – are similarly legal. It's what allows us to copy our DVDs to use them on our iPods or car stereo

(“place shifting”).

It's also true that the DIY book scanner could be used for illicit purposes, as Reetz concedes. But those are not the purposes to which he and his web community are dedicated.

Like the film and record industries, publishers are likely to argue that any unauthorized uses of their copyrighted works amount to “piracy.” What if we make “personal scans” of our hard-copy books to read on our Kindle or Apple Tablet, which may thereby undercut the emerging market for e-books? Piracy?

A new sort of cultural and political battle may be brewing about the legal rights of the commoners versus the proprietary rights of publishers. Will the F.B.I. start going after DIY scanners as if they were a kind of moonshine still? Will publishers attempt the scorched-earth strategy against its customers that the record industry has used?

The enlightened alternative would be for publishers to recognize that they need to “add value” to digital books if they want to develop a market for them. They can't just re-publish existing books in digital form and expect people to forfeit all rights to share, copy and re-use works. That is the essence of culture, after all, and e-publishers had better get used to the fact that digital products thrive on being shared. That's how they circulate; that's how new markets are generated and sustained. The record industry willfully ignored this reality, and look what happened to it.

Publishers are not likely to concede these facts without a fight, however. Textbook publishers, especially, have grown fat and happy by shamelessly charging exorbitant prices to their captive clientele, students. Even after eliminating most of the costs of physically producing and distributing books (through e-books), they will still want to charge top dollar.

Which is why a robust commons of DIY book scanners can act as a healthy counterbalance to a seller-dominant market and as a practical and cheap way of providing what the market declines to provide. One must be careful not to jump to conclusions about how the commons of DIY book scanners will evolve. I consider it a healthy development that will empower readers and extend

access to information, especially for uses that publishers regard as too insignificant (i. e., not profitable enough) and especially for developing countries.

For now, a hearty salute to Daniel Reetz and his merry band of innovative commoners! We will be watching your progress with enthusiasm.

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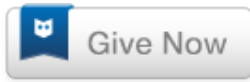
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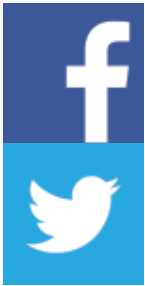
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“Society is indeed a contract;
between those who are living,
those who are dead, and those who
are to be born.” ”

— *Edmund Burke, 1792*

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