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Charity's First Project Puts Digital Books in Hands of Disabled

By Nicole Wallace

Bookshare.org was inspired by Napster, but with one big difference. Unlike the embattled music-sharing service, Bookshare expects no legal fights over its use of copyrighted materials.

The new service, which allows people who have impaired vision or other disabilities to share digital books with one another, is the first project of the Benetech Initiative, a Palo Alto, Calif., charity whose mission is to put technology to work for society. Benetech's previous incarnation was as a nonprofit organization called Arkenstone, which built reading machines for the disabled.

The Arkenstone systems — a personal computer combined with character-recognition technology, a scanner, and a voice synthesizer — allowed users to listen to books that they had scanned. In a little more than a decade, Arkenstone sold more than 35,000 systems.

Bookshare went live at the end of February with digital copies of more than 7,500 books — including classics by Charles Dickens, contemporary thrillers, and self-help titles — all donated by volunteers, many of whom scanned their contributions using the Arkenstone systems. Members pay a \$25 set-up fee and a \$50 annual subscription fee to gain access to the online library.

The idea for Bookshare, says Alison Lingane, a senior product manager at Benetech, grew out of Arkenstone's products. "There are all these digital copies that exist out there of books," she says. "Why not figure out a way to enable those same people to share those books?"

A 1996 change in U.S. copyright law makes it possible for Bookshare to include copyrighted material in its offerings. The amendment allows nonprofit organizations and government agencies to distribute copyrighted material in specialized formats exclusively for the use of people with disabilities.

Two Formats

The digital books offered by Bookshare are available in two formats: Digital Braille, which can be downloaded into portable Braille devices or embossed into hard-copy Braille, and the Digital Audio-Based Information System, or DAISY, format, which can then be read out loud by a computerized reader.

Users must provide written documentation of their disabilities from a medical professional to Benetech before they are allowed to join Bookshare.

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The service, says Ms. Lingane, isn't just for those who have vision problems. People with learning disabilities such as dyslexia, which make it difficult to read written text, or with physical disabilities such as cerebral palsy, which make it difficult to hold a book, are also eligible to join.

Mindful of the legal wrangling over Napster, Benetech approached the Association of American Publishers when it first began to develop the service a year ago.

Benetech has designed several layers of security to respond to publishers' concerns about misuse of copyrighted material. In addition to providing written proof of their disabilities, users must sign an agreement spelling out what they can and cannot do with copyrighted material.

When a member downloads a digital book from the Web site, the file is encrypted to protect it in the event it is intercepted en route. The encryption is specific to that individual Bookshare user, rather than to the book. That way, explains Ms. Lingane, if someone were to intercept the latest Michael Crichton best seller, crack the encryption, and post instructions on how to break the code online, the hacker would only be revealing how to open books destined for a particular Bookshare user, not for every book on the service or even for every book by Mr. Crichton.

Finally, each book that is downloaded includes both an electronic "watermark" and a "fingerprint." If a digital book were posted illegally on the Internet, Benetech could use the watermark to determine if the file was from Bookshare. If it was, the fingerprint would show which user originally downloaded the file.

Doesn't Work on All Texts

Bookshare has been designed for use by people like Lori M. Miller, who has been helping Benetech test the service since last fall. Ms. Miller, an active 26-year-old from Warsaw, Ind., who competed at the 2000 Paralympics, lost her sight from cancer of the retina as a toddler. She appreciates that Bookshare allows her to explore the stacks on her own terms.

"It's tough to go to a bookstore and just browse," she says. "You can take somebody with you and look through the shelves, but you really can't do it independently."

George Kerscher, senior officer for accessible information at Recording for the Blind & Dyslexic, in Princeton, N.J., worries that Bookshare won't work for all types of books.

While he says that Arkenstone was a "major force in the disability industry," Mr. Kerscher is concerned that it will be very difficult for the Bookshare service to handle highly technical texts. Material that contains mathematical data, information in tables, or a lot of graphics simply don't scan well, he says. If Benetech doesn't do a good job communicating what its service can and cannot do, Mr. Kerscher believes people outside the disability field will look at Bookshare and assume that the problem of making books accessible is solved.

"Publishers need to collaborate with the disability field to make sure that accessible versions of books are jointly produced and of high quality, actually making Bookshare unnecessary," says Mr. Kerscher. "I don't think we can expect that to happen any time in the near future, but that's the long-term objective."

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Ms. Lingane, of Benetech, agrees that Bookshare is not the best way to provide highly technical texts, and says that her organization shares Mr. Kerscher's overall goal. "Maybe the day will exist when all books are available in digital format, and if that's the case, we don't need to exist, and then we're really going to start celebrating," says Ms. Lingane. "We hope that we can be a part in moving toward a better long-term solution, but in the meanwhile fill a gap that is desperately needing to be filled."

Helping Readers

Bookshare's early users say the project so far is living up to its immediate goal.

John D. Panarese — who is blind and runs a business in Hauppauge, N.Y., that sells accessible technology for people with vision problems — says that the 15 or 16 books he has donated to Bookshare so far reflect his diverse reading interests. A science-fiction and fantasy buff, Mr. Panarese has given several titles from the Dragonlance series, and he also donated history books and several collections of the myths and legends of Hawaii.

Mr. Panarese thinks that Bookshare will make it easier for people with print disabilities to get their hands on the books they want to read. For example, says Mr. Panarese, after a best seller is released, it takes a while until it's available on audiocassette from the National Library Service for the Blind and Physically Handicapped, run by the Library of Congress.

Scanning books that aren't otherwise available is a long, arduous process. Mr. Panarese says that working in his spare time, it took at least 24 hours over a two-month period to scan and then correct *Belgarath the Sorcerer*, a science-fiction book of more than 700 pages that he donated to the service.

Says Mr. Panarese, "Somebody who wants to read that book now, all they've got to do is go on Bookshare."