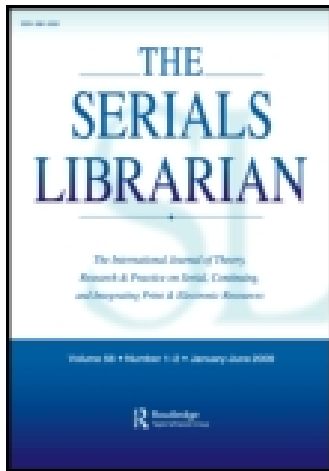


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“Flash” Back: New Format, Old Issues

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“Flash” Back: New Format, Old Issues

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In recent years book publishers have begun a gradual trend towards providing academic libraries with USB flash drives as content bearers of their products and services. This article reviews the current uses of the USB flash drive in academic libraries as well as the updates and changes to the USB flash drive. These updates and changes to the USB flash drive make it more appealing as the conveyor of the digital book; therefore giving librarians’ flashbacks of old issues associated with a new trend.

KEYWORDS *USB flash drive, flash drive, Google Book Search, Project Gutenberg, digital book, Zip disk, optical character recognition (OCR)*

INTRODUCTION

The USB flash drive has been a familiar tool in the library environment for years. USB flash drives are devices that allow “storage and transfer of data between computers and other digital products.”¹ But recent technological advancements in the portable storage device have placed this device on the cusp of change.

It has been said that the advancement of technology “has an impact on academic libraries in two ways: changing material formats and the communication options; and changing how information is delivered beyond the classroom experience.”² New technologies have a way of expanding the library services and products. The change from print resources to electronic resources opened the “library without walls” concept and promoted 24/7 library service.

This article will focus generally on the changing material formats and particularly on the USB flash drive as an emerging format for publication.

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The USB flash drive has potential as a delivery vehicle for full text digital books. As Michael S. Hart, the founder of Project Gutenberg, wrote:

As time goes on, more and more virtual libraries of this size will become available in these small files that allow an entire library, 30,000 books of a million characters each, to be worn on keychains, necklaces, bracelets, etc. These small text files also work very well with compression program varieties such as .zip files, that allow 5 books to be stored in an alternate .zip file in the space 2 books took previously.

5 books in 2 megabytes.

5,000 books in 2 gigabytes.

30,000 books in 12 gigabytes.

That's all the words in the books of an average US Public Library.

2008 will see 12 gigabyte USB flash drives for under \$100.

\$100 to carry every word in 30,000 books. . . .

In less space and weight than your average wristwatch.

That's future I can look forward to.³

This article will review the history of the USB flash drive, its new features and enhancements, its current integration and uses in library services and processes, and the Flash drive's emerging application in continuing resources delivery.

USB FLASH DRIVE: HISTORICAL OVERVIEW

History of the portable storage device shows that:

two major trends have influenced the direction of storage technology. First is the continued miniaturization of technology, or nanotechnology. Ulrich (2003) has identified the beginning of nanotechnology with the 1989 experiment which broke the atom barrier, allowing two IBM scientists, Eirlger and Schweizer to miniaturize the IBM logo to the size of the period at the end of this sentence. This discovery has rapidly impacted business and educational technology as devices to store data have become physically smaller. A second trend relates to where and how the data is stored. In business and education, portable storage devices now store data separate from applications, allowing us to access files from anywhere.⁴

The USB flash drive is the latest in a long line of portable storage devices "that have met the need to save and transport large files and data."⁵ This line of devices includes the floppy disk drive, the Zip drive, portable hard disk drive, the CD-ROM and DVD ROM. Each generation of portable storage device addressed problems encountered by the previous generation. The

floppy disk drive lacked the capacity to handle the very large size of the increasingly popular audio and video files. The Zip disk could handle the capacity but an external Zip drive was needed to read the Zip disk. The cost of the Zip disks contributed to the decline in popularity and use of this device. Connectivity problems were the bane of the portable hard disk drive. Errors in the communications between a computer's hard drive and the portable hard disk drive made this device unreliable. CD-ROM and DVD ROM were both developed as read only devices. Users of the CD-ROM and the DVD ROM were unable to write information to these devices. Later the write capability was developed, but users of these devices had moved on to the next new portable storage device.

Each generation of portable storage devices was an improvement in storage capacity, connectivity, speed, or size over the previous generation of devices. According to Sanjib K. Deka, "Every five years we change how we store information, going from an 8[inch] drive to a 5.25[inch] drive to a 3.5[inch] drive to CDs and DVDs to Flash drives and thumb drives."⁶ The smaller and lighter flash drives have proven to be more reliable and durable than some of the other devices.

In his *Information Today* article on flash drives, Reid Goldsborough wrote: Flash drives are harder than floppy disks, hard drives, and rewritable CD and DVD discs, better able to withstand scratches, dust, drops, and spills. They're faster and more durable than rewritable CD and DVD discs, rated for far more write/erase cycles. Like a hard drive, data is retained when power is no longer supplied.⁷

USB FLASH DRIVE: NEW FEATURES AND ENHANCEMENTS

Although the flash drive is wildly popular, it has been unable to leave behind its "storage and file transfer" image. "Storage and file transfer" gives the perception of an one-dimensional device and one-dimensional devices soon obsolete in the current trends of technological developments. The promotion and advertising of the portability and capability of data storage by flash drives foretold of a multi-dimensional device. Joseph Unsworth wrote in *Electronic Design*, flash drives will be "enabled by software and hardware enhancements that allow a plethora of applications to be run and loaded directly from the drives."⁸ As mentioned before, a flash drive has easy connectivity, good storage capacity, is very lightweight and it is extremely fast. It has the capability to be more of an impact in the workplace than just a vehicle for file transfer or file storage. But it has not yet made the transition from one-dimensional device to a multi-dimensional device. One drawback that has prevented the adoption of the flash drive in the workplace is security. In recent years, this problem has been addressed and the flash drive is making a gradual reappearance in the workplace. The newest generation of flash

drives have security features that include encryption and password creation capabilities. "USB flash drives with password protection and/or encryption software are offered by multiple manufacturers. Many USB flash drives allow the user to have a public and private partition; the public part is always accessible, while the private part is secured through password or encryption technology."⁹

The development of the capability to duplicate the information on flash drives in an economical way has truly changed the purpose of the flash drive. Aleratec, a California developer and manufacturer, announced:

a fast, economical way to duplicate the same information to multiple flash drives. . . . USB flash drives have become one of the most widely used tools for individuals to share data and multimedia files due to size, convenience, and universal compatibility. Aleratec has successfully overcome a key shortcoming of alternative solutions, making it the practical and affordable solution for anyone that needs to duplicate large number of USB flash drives whether for business, education, government, house of worship or individuals.¹⁰

This new development propels the flash drive to a different level; it becomes more than a "storage and file transfer" device. It becomes module-like; it has the capability to interact with the major system but can sustain its own programs.

USB FLASH DRIVE: CURRENT LIBRARY USES

USB flash drives are being used by many library departments as a tool for storage, a backup for library files and as a means for transferring files from one computer to another. Some academic libraries are featuring flash drives as part of their services. Academic libraries are providing access for flash drive use on public workstations and academic libraries are setting up e-reserves for scanned PDF format materials saved on a flash drive. The following academic libraries are examples of libraries using USB flash drives as a tool for storage, backup, and as a bus for transporting files.¹¹ North Carolina State University libraries are promoting "USB flash drive lending." They are selling flash drives through the vending machine but they are also lending flash drives.

Earl K. Long Library, University of New Orleans, suggestions the USB flash drive as delivery option for their special collections materials. Central Florida Community College stopped providing paper and printers in the resource center and computer lab and suggested the flash drive as a printing alternative as part of their "Going Green" project. Daniel Ferrer, head of the library systems department at Central Michigan University, described one process in which his library is using flash drives as backup. "We've found other uses for this new tool. One of our staff members is making backup CDs

of our book ordering and acquisition information to take home with her. The information is already backed up in a variety of ways on the server, but the complexity of the backup makes us worry about retrieving the information. So we are purchasing another flash drive for this application."¹²

Lake-Sumter Community College, Leesburg Campus, has the distinction of using a flash drive for serials check-in. Library personnel created an Excel file for serials check-in when they switched systems. Their database has the periodical title and current issues in a table. The check-in person changes the current information and updates the date.

Critics of USB flash drives cite the possibility of losing the drive containing vital information or the possibility of someone accidentally erasing information from the drive as drawbacks for not using the flash drive for purposes other than storage and file transporting. Raechel Gump, from Lake-Sumter Community College, says "we've never lost the drive or the information on it. All serials files have been backed up to some type of portable storage device for several years. I've had 3.5 floppy drives and Zip Disks corrupt on me. Since moving to the flash drive, this has not happened."¹³

Of these situations the USB flash drive is used in two instances in a non-traditional way: lending flash drives through the Circulation system and serials check-in. Use of the flash drive in these situations gives proof that the flash drive can be integrated in routine library services and processes. Using the flash drive to perform routine library services and processes illustrated the acceptability of this device in the workplace setting.

The suitability of the flash drive in these tasks further demonstrates its transition toward alternative uses in the workplace.

USB FLASH DRIVE: NEW FORMAT-USB OR NOT TO USB

The growing idea of using a USB flash drive as a new format is linked to the Google Book Search project, and to book publisher's inclusion of the book's content on a giveaway flash drive.

For years book publishers have been giving away USB flash drives at conferences and workshops. Recently, using the flash drive as a storage and file transporter, they gave free flash drives to customers with product and ordering information. Once technology provided the key, "a fast, economical way to duplicate the same information to multiple flash drives,"¹⁴ publishers began to promote full-text digital books on them.

The recent receipt by libraries of a serials volume with a complimentary flash drive of the book's content has caused some consternation among the librarians. This consternation is twofold: (1) What to do with the flash drive? (2) Is this the start of something larger? Librarians' consternation was revealed in the comments posted to the Criminal Law Library Blog. This

blog provides a forum for librarians to ask questions and give opinions on library issues. Here is a question and responses posted on the blog about the complimentary flash drive.

Recently our library received an ABA serial, the 23rd Annual National Institute on White Collar Crime, with an accompanying flash drive. We have not received flash drives with print material before, and since this is sure to be a trend, I wanted to find out how others are handling this situation. The flash drive contains the contents of the entire volume, plus some unique material not replicated in the serial volume. Since we'd prefer to keep the information on the flash drive and the book together, one potential idea was to burn the flash drive contents to a CD-ROM and insert the disc in the back of the book.¹⁵

The consensus of the blog participants was to burn the flash drive contents to a CD-ROM. They gave various reasons: "the flash drive doesn't shelve well, they're not secure from viruses and it would be hard to keep the book and the flash drive together."¹⁶ This choice indicates that the librarians see the CD-ROM as the more viable format. It also shows that librarians are reluctant, at least in this instance, to abandon the familiar. What is more to the point, the blog participants mistrust the flash drive as a viable format. For all its new enhancements, the flash drive device is still considered unsuitable for the library environment because of its size, its lack of security, and its susceptibility to viruses.

A few publishers are releasing a limited number of flash drive products as electronic resources. The legal publisher LexisNexis promotes their flash drive products as a separate product for purchase. As few associations are following suit; for example, the American Association of Swine Veterinarians. This group has placed their information library contents on a flash drive that includes the *Journal of Swine Health and Production*.

Is this the start of something larger? It was not so long ago that journal publishers provided free access to the electronic version of their print journals as an "experiment." After the challenges of e-journals, when librarians encounter emerging formats the first thought must be "here we go again."

Adam Smith, Google Print (predecessor of Google Book Search) Product Manager, wrote "The goal of Google Print is ambitious: to make the full text of all the world's books searchable by anyone."¹⁷ To meet this challenge, Google provided a service that searches the full text of books previously scanned by Google. The text is converted using the optical character recognition (OCR) tool, and then stored in digital databases. Google allows the download and print of public domain titles and out of copyright titles at no cost to Web users. Google is permitting the "download to PDF files of the books for later reading, to run keyword searches or to print them on paper. Up to now the service only allowed people to read the out-of-copyright books online."¹⁸

This change in policy by Google has led some people to believe this is just the push that will move the USB flash drive from its role as storage and file transporter to an emerging format for publication. Once the download of books is allowed through Google's policy change the increased use and popularity of the flash drive in more stable markets, like libraries will become evident. The more popular the format the more likely libraries will adopt it. Once again we can harken back to the e-journal experiences; the popularity of e-journals drove libraries to adapt standards and procedures to integrate this new format into library processes. In 1986, John Berry, a *Library Journal* editor, wrote about "the arrival of audiocassette, videocassette, and the compact disc in library collections. John Berry stated the great popularity of these media, coupled with their variety, range, portability, and relative durability gave audio-visual materials a new importance in libraries. He went on to write that the audio- and videocassettes were experimentally bought at first but became incredibly popular so that libraries and their governing authorities reconsidered everything from the mission of the library to collection development decisions."¹⁹ So history has taught us that popularity of an item by the public can impact libraries decisions no matter how "agnostic the container or the format."²⁰

Google Book Search and book publishers are taking bold steps to energize the use and popularity of the USB flash drive.

CONCLUSION

The USB flash drive as a new format is in a transitional stage. It is moving away from its "traditional" role of storage and files transporter to the role of emerging format for publication. Manufacturers of the flash drives continue to improve the capabilities and functions of these devices.

Academic librarians are slowly evaluating the flash drive as a viable format. Although the ACRL Media Resources in Academic Libraries Review Task Force suggests "librarians assess rapidly evolving new formats and be ready to adopt them when they stabilize."²¹ By all accounts academic librarians are waiting for this device to stabilize.

"Over the centuries there has been a series of changes in the way that words are presented. Clay, wax, papyrus, vellum, cloth, and paper have all been used and stored as tablets, scrolls, or folios or books."²² The flash drive as a digital book format is on the horizon.

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