

## e-Records Exchange (Words of Wisdom and Advice for electronic records)

A new addition to the Micro\*Record, this column will feature various topics that are either specific to electronic records or are related to e-records in some way. Having received many questions from agencies recently regarding digitizing documents and the relevance of microfilm, this edition's focus is on the continued [Value of Microfilm](#).

### **A Brief History of Microfilm**

The first patent for microfilm (aka microphotography) was granted in 1859. Although in use from the 1830's, it was Eastman Kodak who put it in the limelight in the 1920's. Microfilm was used by many, including the Library of Congress, and in 1936 it was endorsed by the American Library Association. By the 1960's it was standard policy to produce microfilm as part of the normal business process. Then, as technology advanced, computer output to microfilm (COM) was introduced in the 1980's where microfilm was created directly from the output of computer systems. Microfilm is still the archival and long-term preservation choice today.

### **The Purpose and Use of Microfilm**

Briefly mentioned above, microfilm is all about preservation. Uses of microforms may be different depending on the line of business or point in time; from easy-to-use / easy-to-produce, to reduction-ratio (space saving), to preservation copy. There continue to be many reasons for the use of microfilm.

- Physical documents deteriorate over time; the more they are handled the more rapidly they deteriorate.
- By putting the aforementioned materials to microfilm, access and use can be increased by providing access to the microfilm vs. the physical documents.
- Microfilm reduces storage space.
- Microfilm is an unalterable human-readable format – no special technology is needed to decode.
- Documents printed from microfilm are acceptable in court as a substitute for the original.
- Vital records are often put to microfilm.
- Digital images can easily be produced from microfilm for use with computer systems.
- Microfilm is a proven preservation copy – it has been proven to last over a hundred years and is expected to have a 500 year duration when properly produced and stored.

### **The Continued Importance of Microfilm**

As technology advanced and documents were increasingly scanned into digital formats, questions were asked regarding the relevancy for the continued creation of microfilm.

Let's first understand that when scanning paper documents there are many issues at stake including format, organization and storage. It is simply not acceptable to purchase a scanner and begin converting physical documents to digital documents without first planning the basics of how and where the digital documents will be accessed and stored, the format and method of capture and quality control, and the naming conventions and organization of the resulting documents. This is just the beginning. There are many more considerations and details required when planning to implement a solution and more specific guidance can be found on OA's website under Information Technology Bulletin INFRM006

([http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop\\_general\\_government\\_operations/oa/oa\\_portal/omd/p\\_and\\_p/itbs/domains/information/itbs/itb\\_infrm006.html](http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/information/itbs/itb_infrm006.html).)

So let's say that proper planning was done up front and format standards were followed (refer to ANSI/AIIM standards). And the resulting digital documents are quality controlled, organized and properly stored and backed up, and there are no legal implications for not having the original document. If the retention of the associated documents is of short-term value (less than 10 years) then it is acceptable to scan the documents and destroy the paper. However, if the

retention is of long-term (greater than 10 years) or archival value there should be a human-readable copy; either by retaining the paper or producing a microfilm copy. Why? Because systems and media change and become obsolete.

To further explain, since "imaging systems" and "electronic document management" (EDMS) and/or "content management" (ECM) systems have come into existence over the last 2 decades, hardware and software introduced early on is already obsolete. For example, when imaging systems held records that were considered to be vital or a legal document, perhaps a legal-binding document with a signature, and required the document could not be updated, WORM (Write Once Read Many) storage technology was often used. Just as portable media has changed from 5-1/4" floppy disks, to 3-1/2" floppy disks, to CD's and DVD's, so too did the WORM platters change. Not only did the actual storage media change, but so did the 'drives' or 'read heads' and therefore the media was no longer able to be read.

Not only do hardware and media change, so does software. Sometimes software technology upgrades are "backward compatible" for a version or two. This means that when a new version of software is introduced it may be able to read and/or decipher documents created in the previous version. However, over time and multiple versions, it is often the case that older information is no longer able to be read. In addition, software standards change and the previously created documents in the old software may not be able to be converted to the new. For example, many of us first used Word Perfect as the business word processing software, yet now the Commonwealth standard is Microsoft Word. Word cannot read Word Perfect, and vice versa.

Imaging, EDMS and ECM systems also require 'reader' software, typically referred to as the "viewer" software, to render the image 'readable' to the user. Just as the system uniquely stores the scanned documents for access and retrieval, the system also has 'viewer software' that is often unique or proprietary to the specific imaging, EDMS or ECM system.

As systems are upgraded or changed to new systems, the scanned documents will need to be migrated or converted to be used in subsequent systems for continued access. Repeated migrations and conversions of data most often result in data degradation. That is, missing bytes or misinterpreting bytes during the conversion / migration process. The result could be a corrupt document that is not viewable at all, or perhaps a document with 'holes' or missing information. Hence, if long-term or archival documents are stored solely electronically, it is almost certain that the information will not be continually accessible, or significant planning must be done and investments made in migrating and backing up documents in order for electronic documents to survive long term. This is almost always far more costly than anticipated.

The notion of producing microfilm is sometimes considered antiquated and, as I'm seeing now, is being questioned and/or believed to be no longer relevant or useful today. But I challenge you to take into consideration all the facts you have just read and learned about and to reconsider the importance of using microfilm. There is enduring value in microfilm and it is still the choice medium for preservation today.

Although microfilming services are no longer available through the PHMC, the same services and same staff are still available for Commonwealth agencies to utilize through the Department of Revenue's Administrative Services. For more information, contact Rick Keller at 717-787-6320 [rkeller@state.pa.us](mailto:rkeller@state.pa.us)

If there is a topic you'd like to see covered in a future edition of the Micro\*Record's e-Records Exchange, please submit your suggestion to Linda Avetta at [lavetta@state.pa.us](mailto:lavetta@state.pa.us)