AN ANCIENT SOLUTION TO A MODERN PROBLEM

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Abstract
This article addresses the process of managing records and documents for medium and long-term retention periods. The major question that it addresses is: Is microfilm, which first came into use in the 1870's, undergoing a rebirth some 130 years after its first application as a support media in a time of conflict?

The analogue technology of microfilm!

Microfilm was first used effectively with the Pigeon Post into Paris 1870-1871. Conversely, it is as synonymous with the dashingly portrayed world of espionage as much as it is with the less glamorous environs of the local library. The resurgence of microfilm into the mainstream of business and government activities is a grand concept, you may say. We all know that computing at all levels has taken over the day-to-day activities of government, business and our personal lives. While this has been something of a godsend, providing a tool to improve efficiency and a bonus, it has also been a curse.

But why a curse?

A statement by Jeff Rothenberg, Senior Researcher, RAND Corporation, Santa Monica, CA, in his article in the *Scientific American* article of January 1995 that "Digital data lasts forever or five years, whichever comes first" has proven to be a truism and not a flight of fancy as many at the time cried in response to his proposition. The list of lost digital information is legendary. Listed below are a few such incidents:

- CD-Recordable discs unreadable in less than two years
- Digital Domesday Book lasts 15 years not 1000
- Frantic search for lost data at Los Alamos
- Reports of NASA's and other Government Agencies
- Data being lost due to poor storage conditions.

Why is microfilm any better than any other media?

The reason is in its simplicity, and the fact that it is human eye as well as machine readable with low speed and low cost devices, as is often stated with a magnifying glass and a candle. At the other end of the spectrum are the high volume machine readable scanners from Wicks & Wilson, nextScan, Sunrise and Mekel which can cost up to AU$100,000.00 or more to carry out the scanning of all of the various microfilm formats of 16 and 35 mm roll film, microfiche, jackets and aperture cards at unbelievable stated throughput speeds of up to 4,000 images per hour. Microfilm processed to International Standards has the potential, and I restate, the potential for longevity be that 100, 200 or for what has been the lasted and greatest claim from

people e.g. Kodak that it is human eye readable for 500 years. This potential for longevity of microfilm is no idle, groundless boast, but the end product of a tried and true set of processes and procedures learned over more than 100 years of experience.

Why now?

With new and sometimes onerous legislative requirements for both public and government organisations as a result of poor record keeping and the recent destruction of, or the lack of capture of electronic data in any manner, all sectors are now looking at how to protect themselves from a) poor publicity, b) embarrassment by being quoted as not complying or c) have legal action initiated due to a lack of the retention of information as required by legislation.

What can these organisations do to protect their most important asset, and potentially their saviour in being able to prove their case in a court of law if accused of not fulfilling their legislative or moral requirements? In theory, and I personally believe in practice, that all information entering an organisation in a physical form should be scanned and converted to a digital format with all information entering or leaving the organisation in an electronic format being captured into an appropriate Electronic Records and Document Management System (ERDMS).

No, this not reversing or negating my concept that all data requiring long-term retention be transferred to an analogue media for long-term preservation and/or access should a disaster occur and the digital data is unavailable or has been corrupted either by intent or the lack of quality IT practices and procedures. This process supports the use of microfilm as a, or the, long-term retention media of choice. What is the answer to this short, medium and long-term retention on a stable media? The answer as many have already realised is microfilm.

Leading the charge

Kodak has been the front-runner for a number of years, with its i9600 Series Archive Writer and it predecessor the Model 4800 enjoying a virtual monopoly internationally. These units have converted large databases to 16 mm microfilm for such data files as the USA 2000 Census, as well as the latest census data for the United Kingdom, Australia and Singapore. These are not inconsequential file sizes and all are held for the long-term because some of the data cannot be released publicly for up to 100 years into the future. How do you do that with digital data? If these situations are justifiable, one could argue that transfer of critical, legal or historic electronic data appropriately managed to this same media could be of value to all business and government entities.

When information enters the organisation it is scanned and placed into the ERDMS and appropriately identified for its appropriate retention requirement. The same goes for electronic data incoming, created internally or exported from the organisation. The ERDMS then on a scheduled basis (once a day, week month etc) compiles the data into a digital file that is then dumped to 16 mm microfilm via the Archive Writer or other similar product (along with the ERDMS index of that data). The Archive

Writer creates two copies of the roll of 16 mm microfilm, one the organisation retains for its internal use, appropriately stored with the second copy sent to the archives, either within the organisation or external if a Government Department, to fulfill the organisation's long-term retention requirements under legislation.

Will this process described above allow us to sleep soundly in the knowledge that our long-term data is safe on microfilm? No! It is not that easy. There is more to do. Nothing lasts forever and microfilm is no exception. The oft-quoted 100, 200 or 500 years longevity for microfilm is potentially misleading.

The fine print is very onerous in its detail. All we have to do is to process the microfilm to the International Standards, never expose it to light, stored it at 10 degrees centigrade at 30-40% humidity. We should have three copies; the # 1 copy held in the 10 degrees centigrade and humidity environment with no gases or atmosphere, which may affect the film emulsion, and never to be touched (the master). The # 2 copy to be stored at 20 degrees centigrade and similar humidity as # 1 (the working master from which we duplicate working copies as and when required) and # 3 the working copy which we retain in our office environment for day to day access and ultimate destruction due to its use in a reader or reader printer or attack by the environment.

What lies ahead?

I predict an increasing use of microfilm for the purposes outlined above and resurgence in the overall use and application for the media. Is it a perfect solution? Probably not, but until the perfect answer arrives, I am putting my money on this nag called microfilm in a one horse race, not bad odds.

Notes

The original article is at http://www.microfilm.net.au/articles.shtml. Published with the author's permission.