

On the Economics of Microfilm – when does the Blend of Film & Nanotechnology outpace today’s Electronic Storage Systems?

David Gubler, Fachlabor Gubler AG (Switzerland)

Abstract

Microfilm is a proven media. No electronic data sensor is able to store as many information in a given timeframe as the photographic microfilm. Microfilm can not be manipulated without notice, and microfilm is long term stable – wouldn’t microfilm be potentially interesting for electronic storage? What are the areas of application, the limitations and the costs of microfilm in today’s digital preservation?

Microfilm has been an accepted media in the archiving world for decades. Boosted by state of the art nanotechnology, microfilm experiences an unforeseeable revival: the formerly analog microfilm can be integrated into any digital workflow: Digital images are recorded automatically and at highest resolution and quality directly onto film while professional pre-press color management assures highest color fidelity and a trustworthy reproducibility. Also, purely digital data can as well be placed on this optical media as bit stream (Bits-on-Film). With the latter, microfilm becomes a digital data carrier like magnetic tape or a CD ROM.

From a technical point of view, microfilm meets the particular requirements that are crucial to electronic storage or to document management: it offers maximum authenticity, its hardware is stable for more than 500 years, the velocity of data transfer to the media is high and the raw material is a mass product and therefore advantageously cost efficient.

*This presentation will, in its first chapter, derive the **key requirements** of long term archiving. We will distinguish between “access” “storage” and “archive” and aspects of self descriptive information decoding will be discussed. This chapter includes aspects such as Syntax, Semantics, Metadata and Information layout, specifically the layout on an optical, human readable media.*

*In a second chapter we will derive **cost drivers** of digital archiving such as revolving migration costs, organizational and energy costs of electronic, server based archives.*

*The third chapter will then present a **cost model** on the basis of which we will be able to calculate the efficiency of distinct archival strategies.*

*On the basis of the chapters above, the presentation will characterize several archival portfolios and assets, archives of images as well as assets of music, movies or any electronic content (any “bitstream”). And we will **derive propositions**, where and under what circumstances it is useful to work with a digitally recorded microfilm as archival media, whether to use Images-on-Film or Bits-on-Film or when microfilm is not advantageous at all.*

As Fachlabor Gubler AG is a service company specialized in long term archiving, we will use our practical experience within our actual archiving projects as reference for our statements. Our research in the fields of color management, information layout standardization and a R&D project for the development of a “Bits-on-Film” method stands for the technical background of our

presentation. As Fachlabor Gubler AG operates the world’s first and so far only Color Laser Microfilm Recorder, we are happy to share our first two years of experience and foremost the many application areas for laser microfilm recording.