digital preservation europe

The myths and fallacies of digital photographs and their preservation

Digital photographs offer fasciniating new possibilities and seem to be easier to store and preserve for the future than their analog counterpart, promising incredibly valuable, massive photo archives available at your fingertips. However, securely storing massive amounts of data, as well as ensuring that the file formats produced by professional cameras can be read in the near and long-term future, is a significant endeavour. This briefing paper reviews some of the core challenges in preserving digital photographs to make sure that the value of a digital photo archive remains and grows for the benefit of the photographer.

Introduction

The photographic sector was one of the quickest adopters of digital technology, and today digital cameras far outnumber their analog counterparts. However, while photographers quickly went digital and took advantage of the opportunities for quick development, online publishing, and especially the fact that essentially a shot does not cost anything, many professionals are just beginning to realize the dangers of keeping all photographs in digital form on their computers.

Digital photographs are threatened on two levels:

1. Storage: Photographs are bitstreams stored on data carriers, often in large numbers. In the event of accidental damage, such as fire or flood the damage to an analogue film would mean 20 to 36 pictures might be lost. In contrast, the loss of a hard drive might mean that a lifetime's work of photography falls into a digital black hole. This high concentration of data means that in the case of relatively common events such as fire and flood happening, the damage could be catastrophic. Therefore, a proper backup strategy is essential.

2. Logical: Digital photographs are, unlike their counterparts, intangible. While printed photos can lose their colors and fade, they continue to be understandable and meaningful to a human. Digital information in contrast can quickly become unusable bitstreams not interpretable by future computers and technologies, if the necessary precautions are not taken in time. While JPEG images are likely to be readable for a long time, the raw camera data that is widely used in the professional sector does not have the same software support. Every camera has a different RAW profile and often needs specific software to function, which might not be available in the future.

Often, proper backup strategies present a significant initial investment for a photographer not only financially, but also in time and effort to investigate options and become familiar with the technology. In many cases, this investment acts as a barrier and the necessary backups and precautions are not taken. Frequently it is only after experiencing loss of data that individuals realize the value of their archives by far exceeds the cost of securing it for the future.

Best practice recommendations

For professional photographers or small picture agency, some best practice recommendations to consider include the following:

1. **Do not rely on CDs, DVDs and their variations.** The average lifespan of these discs is short and, more importantly, unpredictable, with quality varying. Even more importantly, handling becomes very effort intensive as the amount of data increases.

2. **Use Hardware RAID systems,** either attached to servers or as networked-attached-storage. These systems offer high redundancy and speed while being practical and affordable. Hard drives do not last forever; thus, redundancy is important. Replacing a hard drive in a RAID system is relatively straightforward.

3. **External hard drives**, if used as additional back-up media, need to be activated regularly, at least once every month.

4. **Convert original images to a stable standardized format** such as TIFF (LZW compressed).

5. **Keep the original RAW file** if you want to be able to improve image results in the future, if needed.

6. **Regularly check** if the backup data can be restored successfully.

In the future

The future should bring two service models for professional photographers:

1. Antivirus-like software tools that take care of locally stored content in a transparent, non-intrusive, and automated way.
2. Trustworthy digital archive services where digital photographs can be uploaded or deposited and retrieved at any time.

Standards

In this context, compliance on international standards, such as OAIS, as well as regular evaluations, risk-analysis and compliance audits (following e.g. the TRAC guidelines or based on Drambora) are important. Furthermore, a consolidated process for planning digital preservation activities, both on the organizational level as well as on the object level is recommended, following procedures such as defined by PLATTER and the Planets Preservation Planning Workflow / Plato.

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