

10. STORAGE AND PRESERVATION

Although storage and preservation may not seem high priorities when planning a digital panorama project, they are vital to the long-term survival of the data.

Storage and preservation needs will vary from one project to another, depending in part on what media was used in production. Printed photographs, slide negatives, and digital photos all have different requirements. Since digital resources require software and hardware to be accessible by users, long-term preservation plans should include these factors.

If the project data is stored in a library or archive, the data should be consistent with the institution's guidelines. It would be wise to consult with a member of the library or archive staff early on in the project's timeline, so that you are aware in advance of what kind of material the archive can accept and what metadata it requires. This discussion should also cover whether or not the archived material will be made accessible to users, how access will be controlled, and what kind of long-term maintenance will be required.

There are many resources regarding storage and preservation of digital and film materials. American National Standards Institute (ANSI) and the International Standards Organization (ISO) have produced a series of standards for archival-quality materials for long-term storage of photographic materials, and these standards are observed by most manufacturers of quality archival materials. Some other resources that may be useful are:

- The World Wide Web Consortium (W3C)
- The Web Standards Projects

The Society of American Archivists (SAA) offers courses and resources on archival practices and principles. Their web site is aimed at archivists and librarians, but it is a good source of information about current archival practices and issues.

10.1. LONG-TERM PHYSICAL STORAGE

Physical records would include photographic prints, paper records, slides, film negatives, and audio and video storage devices such as CDs and tapes. Data on media such as CDs and tapes require controlled storage conditions and some kind of player. The shelf-life of media such as CDs and DVDs can vary, so it is worth using archival quality media (well-made and reliable for burning and storing data). Technology is constantly evolving, so at some point the devices and media used to store and play your data will be outdated or difficult to maintain. At that point, the data must be migrated to another media or format. This is best done in consultation with a trained archivist who is familiar with the technical and administrative requirements of the project and the software involved.

In the case of paper records, prints, and film, the data they contain can be copied but some data or metadata may be lost in the process. For best results, these items should be professionally archived. Regardless, consider following commonly accepted best practices when generating this material.¹ Consult with a local university library or archive for further guidance.

10.2. DIGITAL PRESERVATION STRATEGIES

Digital resources are, generally, more difficult to preserve than physical objects. As with physical objects, they require space, environmental controls, and good administrative practices, but they also require viable file formats, media and hardware, and software used for storing and accessing the data. Depending on how complex the project is (e.g., multiple panoramas, textual commentary, additional media), there may be several applications and devices required to access and use the resources it employs.

The simplest type of preservation is to make multiple copies of the source files and necessary applications. In the short- and medium-term that can be done by copying the files onto archival-quality DVDs or CDs that are stored in a safe and reliable location. This can be done independently of a library or archive, but it does not guarantee access to the materials. If the storage media are compromised, there is not much that can be done (hence the need for multiple copies). Furthermore, if DVD- and CD-drives are replaced by superior technology, it may become difficult or impossible to retrieve your data. Similarly, software applications, whether open source or proprietary, are vulnerable and may become obsolete. If the viewing software is no longer viable, it may be necessary to revisit the project and decide whether or not to emulate it with current software.

If the project is being stored at an archive or library, the preservation staff will most likely migrate project data to other storage media as necessary, thereby providing a

1. E.g., the National Archives of Australia has a page describing the specifications for acceptable archival paper. The Northeast Document Conservation Center offers free preservation advice to individuals and has range of leaflets covering document and photograph storage, handling, and management.

longer life-span for source files. Otherwise, the project's commissioner will need to make arrangements for long-term maintenance and support of the project files and records.

10.3. THE GLOBAL DIGITAL PRESERVATION ARENA

There is currently growing concern and interest focussed on preservation of scholarly and historical digital resources. In the U.S., the Library of Congress's National Digital Information Infrastructure and Preservation Program (NDIIPP), is a collaborative effort to collect and preserve digital content for future generations. The UK Data Archive collects and preserves digital data in the humanities and social sciences in the UK.

One key area is the ongoing tension between open-source and proprietary technologies. Open source technologies distribute source code freely, so anyone can download it and modify it as desired. Proprietary technologies hide source code, so that no one outside the company can study it and copy or modify it. There are advantages and disadvantages to each, but in the context of preservation, there is some reason to think open source technologies are more likely to have a longer lifespan or surviving sets of derived applications. Proprietary technology depends entirely on continued support from the company that owns it. If the company goes out of business or decides to abandon the software, the technology will become obsolete. This can be problematic for medium- and long-term preservation efforts.

On the global front, individual organizations and countries have developed their own standards for preserving digital material.

WEB REFERENCES

American National Standards Institute (ANSI). <http://www.ansi.org>

International Standards Organization (ISO). <http://www.iso.org>

National Archives of Australia archival paper specifications.
http://www.naa.gov.au/recordkeeping/preservation/aqt/rules/rules_technical_specs.html

National Digital Information Infrastructure and Preservation Program (NDIIPP).
<http://www.digitalpreservation.gov/library/>

Northeast Document Conservation Center. <http://www.nedcc.org/home.php>

Society of American Archivists (SAA). <http://www.archivists.org/index.asp>

UK Data Archive. <http://www.data-archive.ac.uk/>

Web Standards Projects. <http://www.webstandards.org>

World Wide Web Consortium. <http://www.w3.org>