

A DIGITAL AGENDA FOR FILM ARCHIVES

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1. HISTORICAL OVERVIEW AND DESCRIPTION OF TECHNOLOGICAL CHANGES

Slowly moving business

For more than a hundred years, film has been the carrier of the heritage we have pledged to preserve. Film archives and archivists have been concentrating their efforts on keeping film viable, on preserving it, and on restoring it.

Considerable amounts of research have been devoted to understanding the chemistry and physics of film materials in order to better be able to build the best environments for their safekeeping. The industry has gone through a number of eras, starting with nitrate, evolving through several acetates to polyester base materials. We have learnt to deal with all their idiosyncrasies like inflammability, vinegar syndrome and excessive resilience.

The film archive community has set up educational opportunities to disseminate the knowledge and the skills film archivists need. Film archives have been able to train their staff on a long-term basis, slowly building up the competence of their staff, because, in general, all film materials and their problems are stable on a human lifetime scale. What held for keeping film ten years ago is still valid and true.

The longevity of film materials and the practices of their safekeeping, and archival principles in general have naturally made film archives stable, steady establishments. Equipment from a hundred years ago could be used to handle film today, mechanical wear of their parts permitting. The staple equipment in laboratories for certain types of restoration are fifty-year-old printers. Film vaults are the most cost-effective means of long-term preservation of film heritage. They are built to last and take years to build.

Keeping up with the industry

Film archives retain films after their initial screenings, preserving them after the first exploitation period. The actual film preservation elements are products of a technical film production chain. The technology and the elements produced have evolved with time but have not fundamentally changed during the whole history of moving images. The camera negative, positive and negative duplicates thereof, and the final print have been the bread and butter of film production for a hundred years.

When sound film was invented, sound elements were added to the repertoire, but they are mostly on the same type of physical carriers as the image. Colour changed the physical and chemical structure of film but not its mechanical properties or geometry.

It is not for the archives to decide how films are produced or to define on which carriers they should be laid on. The role of the archive is to receive the final products of a film production chain, whatever their technical format and properties, and keep them forever.

So far, this has not been too difficult because the technology and its products have taken gradual steps forward mostly within the physical bounds of film. Even the advent of digital post production at the turn of the millennium changed little since the final products of a digital post production chain were still film because they needed to be screened in cinemas on film projectors. The term Digital Intermediate, or DI, reflects this: the digital phase was just an intermediate one in an analogue chain.

The Digital Intermediate process has evolved into a fully digital film production process from camera to screen. Digital acquisition equipment is replacing film cameras. Many European countries have announced near-term schedules for converting all cinemas to digital. Film as a medium is fast on its way out in the production of new films. It will linger on for some years still but many if not most productions will quite soon be fully digital.

This change in the industry will have to be mirrored in the archives. Films are being made in a new way and they will have to be archived in a new way. Active film archives will have to go digital. There is no choice to be made, no alternative. Digital film has to be archived digitally.

Film – the work and the carrier

The slow change rate of the whole of the moving image industry and archives has been conducive to a strong inertia within film archives. It takes a long time to react to changes, and opposition to change is natural and common. Having concentrated one's life's efforts to the keeping of film reels may lead to strong attachment to the format and material. Archive films gather new value with time that may

surpass the value given to the film as a work at the time it was produced. The intended artistic effect produced in the human brain by the moving images on a screen is augmented by the historical context and the knowledge of the carrier, and the inherent qualities that the carrier as a material happens to have on the image. The tone scale, graininess etc. become inseparable attributes of the film screening experience.

Even though the original film may have been a mass-produced industrial object, its current status as a unique or almost unique archive film blends into a new concept of which the physical object and the impact it has on the picture quality are an inseparable part. Film archivists have come to know intimately the qualities of the prints of film classics that are in the care of different archives. Film prints are individual objects that are cherished by their keepers.

New concepts

Along with the new methods of archiving come some fundamental changes of concept. Digital film archiving is archiving of works – or content. Although ‘content’ as a term for film is despised by many, it underlines well the fact that in ‘digital film’ the term ‘film’ has nothing to do with the carrier any more. It’s all about the work of the filmmakers, as the intellectual and artistic expression they wish to convey to the viewers – stored as ‘content’ within digital files.

Although a digital film still needs a carrier to exist in the long term, the relationship between the film and the physical data storage device or medium is a very different one from the relationship between a film and the film base it has been exposed on. Traditionally, a film could not be transported without transporting the carrier – the two ‘films’ are inseparable. A digital film, on the other hand, can be transferred anywhere on the globe completely separated from a carrier, on data networks as electrical signals. Identical copies of (the content of) a film can be made on different carriers, the choice of which has no effect whatsoever on the images presented to the audience.

Because of all this, archiving digital film is conceptually dissimilar to archiving film. In a film archive, taking care of the carriers equals taking care of the film. Digital archiving is much more about the archiving of the content and not of the carrier, which has become an easily replaceable although necessary entity.

The Digital Archive

Film archives are forced to follow the industry and evolve into hybrid archives taking care of both analogue and digital collections. Most of their old activities will still continue, but a new line of operations must be established to handle digital film from acquiring into the collections, through long-term-preservation to giving access to it in various digital formats. In a few years, almost all external access, e.g. projections, to even the old collections will necessitate digitising.

Establishing digital repositories is a fundamental new endeavour for the archives, it may actually be the biggest change they have ever gone through. Because of the dissimilar natures of archiving digital data and archiving film carriers, very different technologies and skills & mindsets of staff are needed. Existing staff will have to be trained to understand digital technology and to work with current film production practices. New staff will have to be recruited or new long-term partnerships established for the setting up of the IT systems and running them. All of these necessary actions require substantial, permanent funding, the securing of which is thus at the very top of the list when preparing for the digital future.

2. CHALLENGES OF THE DIGITAL ERA

Curatorship

In the analogue era many films would eventually end up in a film archive, either when the distribution of the films prints ceased, or when the ongoing cost of storing the negatives became a point of budgetary efficiency. Especially in countries with a large public investment in film production, different compulsory collection policies, such as legal deposit, have been implemented. Compulsory deposit has proven the only way to ensure a diverse and systematic collection of the film heritage.

With digital media it becomes even more important to ensure compulsory deposits of films to ensure that they are properly catalogued, documented and stored in sustainable repositories. With the change to digital preservation, the cost of producing an archival copy becomes smaller, whereas the ongoing cost of file management and handling will become a growing burden. Compulsory deposit of digital film to public film heritage institutions is expected to be the only way to preserve films beyond their initial commercial exploitation.

Of course film heritage institutions will also experience growing costs. However, public film heritage institutions can reap the benefit of mass efficiency, as they can handle the entire film

heritage, whereas the film industry itself is a fragmented industry, where the individual company has limited scope and resources.

Preservation

Analogue media have allowed for a certain measure of benign neglect. However, it is worth noting that only 10–20% of the film heritage from 1895–1930 is thought to survive. Digital and electronic media are prone to several types of obsolescence. Besides the carrier decay and carrier format obsolescence known from analogue media, there are also hardware, software, file format and runtime environment obsolescence to take into account. Typical refreshing of digital media is either ongoing or at least every five years. Migration to new formats can also be expected at a more frequent rate than for analogue media. Current cost for trusted long term digital repository storage is estimated to be of the same, or higher, magnitude than the equivalent analogue preservation. Even if physical storage cost is expected to decrease, the intellectual and administrative costs are expected to remain stable or increase over time.

It is important to stress that preservation of the film heritage is the prerequisite for any other activity. If preservation is not performed properly, there will be no heritage to show and give access to.

Screening

The film archives have a long tradition for heritage screenings of analogue films. This tradition is challenged by the digitisation of cinema, and new models for quality screenings of historically important films will need to be developed for the digital era. The financial challenges facing film archives, regarding both preservation and screening of film heritage in connection with the change to digital, are substantial. Maintaining an authentic “cinematographic” screening experience is already proving a challenge, as digital transfers of heritage films often have a re-mastered look, which is better suited to electronic media than cinema screens. It is important to distinguish between professional D-Cinema projection and lesser quality E-Cinema projection, such as projection from DVD.

Distribution & Programming

Film exhibition is expected to become fully digital within a few years. This change will affect the collection building of the cinémathèques significantly. Even if more titles will become available, the diversity of historical titles will have to be addressed to avoid rigid canonisation. Cinémathèques and film archives should work to ensure that as many films as possible are available in the best formats. Cinémathèques will have to master the use of DCPs in the same way that the diversity of heritage film screening formats are maintained for proper display of original film works.

The advent of digital cinema might force the film archives to create new “business models” to secure the availability of films held and preserved in their care. There are questions to be dealt with in regards to transparent handling fees, rights management and the possible creation of a centralised catalogue with available DCPs, rights, serial numbers for server and projectors, etc.

Film archives have been active in collection building beyond their national or preservation remit. Many archives also have ongoing screenings for educational and cultural purposes. The local availability of prints is an important part of cinémathèque programming. Despite the general thinking that everything will remain available, there is really no knowing which films will remain available, and under which conditions..

Access & Contextualisation

The European film archives hold significant amounts of moving images documenting the life, history and human expression of more than a century. These films are typically held as the original analogue film reels that remain the best preservation media for this unique historical resource. Digitisation of these films is both costly, and should not be taken lightly in regard to retention of authenticity and the context in which they were created. It is essential that these images and sounds are not merely regarded as content, but rather as the original documents and artefacts they are.

There is a great cultural and educational potential in the digitisation and online availability of the cinematographic heritage. However, much of the film heritage will need contextualisation in order to facilitate use beyond a mere curiosity level. As cinematographic works are typically “high production value”, they can be expected to retain interest across borders, if appropriate contextualisation and translation is provided.

The European Film Gateway (EFG) is a good example of a project that increases access to diverse film collections through the homogenisation of metadata and cross-national coordination of

catalogues. The EFG could potentially provide the cornerstone for a more developed access to the European film heritage on a wide range of platforms, from DCP to VOD platforms.

Documentation collections, such as manuscripts, clippings and promotion stills, play an important role in the constitution and preservation of cinematographic culture. These elements of film culture give important information about how films were shown and experienced at the time of release. While the documentation collections are often the only surviving trace of many films, these collections contain art works in their own right, and they also demand special attention in order to be properly preserved and contextualized.

Funding

Even though digital “business models” are expected to develop rapidly over the next years, it would be naïve to think that broad digitisation of the film heritage can carry its own weight, or even create a substantial income for the heritage institutions. Digitisation of the film heritage should be a cultural investment with the purpose of giving better public access to European heritage.

Private commercial re-use of digitised heritage could be an added benefit of easier access, but digitisation projects should not be dependent on it. Public heritage institutions should continue to receive ample public funds to both preserve and present Europe’s heritage as financially independent non-profit institutions.

Copyright

Copyright clearance of motion pictures is complex. Often several authors are involved in the creation of a specific work. The transfer of rights and neighbouring rights add to the confusion. A recent study puts a large number of films in the orphan category, which largely prevents them from being utilised or even shown. Film archives do not have the resources to clear copyright at large, but do so as it is needed for ad hoc display purposes. If film archives are to facilitate rights clearance on a larger scale, either significant resources to do so, or clearer legislation with non-commercial exemptions, is needed.

3. CONCLUSIONS AND MAIN ACTION POINTS

- Film archives must go digital to be able to serve their clients and users.
- Traditional film archiving will have to be continued.
- Digital archiving is a fundamentally different operation from traditional film archiving, and needs new skills, technology and funding.
- Film archives must secure the human, technological and economical resources for the above.
- Film archives must work to create forums in which member archives can acquire the skills and intellectual and practical requirements of current and future access, archive technology and strategic planning. This is partly done in the FIAF Summer School, to continue biennially in Bologna as of 2012. However, new opportunities for staff and management should be created, in Europe possibly within the EU funding system as an Archimedia+, or by other means.
- Film archives must work to ensure diversity in access to film heritage, including availability of DCPs of world cinema. The creation of a central DCP catalogue of culturally important titles could be an option to provide access to film heritage in theatrical quality.
- Film archives must work to maintain and improve the political understanding that non-profit film archives are important stakeholders in the preservation and access to past, current and future film production.