

Kodak collapse heralds the death of film and the 'digital gold rush' but where is technology heading?

Leo Enticknap assesses the 'State of the Archive' worldwide

On 19 January 2012 came the news that had been widely anticipated for several years: Eastman Kodak, the iconic manufacturer of around 90% of the world's film stock, applied to a New York court for Chapter 11 bankruptcy protection. This procedure, unique to US law, is in effect a statement that a company is insolvent, and a request for protection from its creditors while an attempt is made to restructure it back into viability.

The reasons for this have been covered in the financial, film industry and technical trade presses and on countless blogsites and fora, and so require only a perfunctory summary here: in the middle of the last decade, the company recruited a CEO, Antonio Perez, from the IT industry to take Kodak into the digital age. Focusing on research and development into consumer and professional inkjet printing technologies, he failed to make headway in an already saturated market.

Meanwhile, a combination of the Japanese and Asian electronics giants and a few western start ups were establishing a dominant presence in the emerging sector of high definition digital images, both still and moving, sending film on a relentless downward spiral. Film stock after film stock was discontinued (the end of Kodachrome in 2010 attracted a lot of publicity, given the film's iconic status), and we're now at the stage whereby three quarters of Hollywood movies and almost all television is being originated on digital cameras, and around 70% of European and US cinemas are now projecting DCPs. Two of the major Hollywood studios have already announced the total cessation of distribution on 35mm as of the spring of 2013.

This moment – when film finally goes away – has been anticipated and speculated about for almost two decades. I remember as a film archiving student at the University of East Anglia in the mid 1990s, attending a guest lecture by the then curator of what was then called the National Film Archive, Clyde Jeavons. "Within a couple of decades", he predicted, confidently, "...film will be gone, apart from the film you're looking after." Given the quality of the electronic images available at the time – 625 line PAL was as high a definition as they got – the gut instinct of everyone present was to laugh at him. It turns out, however, that his predicted timescale for the demise of photochemical imaging was almost bang on.

As the reality of the moment sinks in, the reaction from the film archive community has taken one of two forms. The first is essentially an outpouring of emotion driven nostalgia. The usual online haunts have been full of assertions, for example, that if the so called 'vinyl revival' was possible, so it will be possible to maintain the presence of film as a boutique operation.

For enthusiasts only

The practical difficulties are rarely discussed (the industrial processes involved in the manufacture, coating and processing of colour film emulsion are an order of magnitude more difficult and expensive than those of pressing an LP), and it is notable that most of the authors of these contributions have little if any



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professional experience of technical operations involving film. For the record, my own feeling on this is that it might just be possible to maintain the production of black and white film for a small number of enthusiasts, given the relative simplicity of the chemistry, but that the economies of scale available to Kodak, Agfa and Fuji in their heyday were absolutely necessary for the manufacture of colour stock to be viable.

Those same economies of scale were what caused the Concorde to have to be retired in 2003: Airbus simply could not continue to make the replacement parts and consumables needed for such a small customer base of machines in service at a price that would permit their continued commercial operation. All the signs are that colour film will almost certainly go the same way.

Even for black and white film, the likely cost will make its use for preservation copying of motion pictures impossible for all but the very wealthiest archives. And those who argue that cinema projectors are mechanically simple devices that should be possible to maintain indefinitely are again underestimating the challenge. There are already models (e.g. the GK 37 or FP 16), that were in mainstream use until relatively recently, which, if certain parts fail, are rendered useless unless a replacement from a cannibalised machine can be found. Given that in all complex mechanical and electronic devices, it is the same part that tends to fail and require replacement, the existing stock of replacements can only dwindle until the cost of remanufacturing them makes it unviable to keep these machines in use.

The second response has been a somewhat more reasoned questioning of how archives, and other custodians and users of historical moving images, are going to deal with the outright (or near outright) cessation of film manufacture when it finally happens. Most agree that archives which already hold film elements should continue to preserve them indefinitely, as it has now been recognised for several decades that, stored in a cool and dry atmosphere, it will remain stable for centuries.

A digitisation 'gold rush' is now in full swing: there are around

two dozen companies worldwide making scanners and their associated hardware and software, and the digitisation of archival film holdings has grown into a multi million pound industry, served both by post houses and the in house archives of larger broadcasters, studios and public sector archives.

Warning voices

The BluRay Disc (BD) and online distribution has generated a new consumer market for archival moving images, and it is being claimed that digital cinema projection will grow the market for archival and repertory titles at what the UK Film Council called 'specialised' cinemas. Proponents of the 'preservation on film / access on digital' model also point to the inherent mechanical simplicity of a scanner (in crude terms, a simple film transport mechanism with a digital imaging device and a light source in the path), arguing that it will always be possible to build one without much difficulty.

There have been some warning voices, however. It has been suggested that, using the peak oil analogy, we are about to enter the 'peak film' era, and that as existing holdings are digitised, the demand for the technology and services involved will decrease, just as the demand for film itself has decreased over the last decade. If we accept the traditional archivists' adage that 5% of a typical collection accounts for 95% of access activity, then it is unlikely that archives – especially commercial ones – will be in a position to digitise their entire holdings in an initial programme.

In that scenario, we may arrive at a situation whereby the demand for film digitisation technology itself wanes to the point at which it is no longer available when needed to provide access to obscure and unexplored film holdings many years into

the future. This situation already exists with earlier generations of broadcast videotape formats: in the case of 2" Quadraplex, for example, experts are generally agreed that there are simply not enough viable machine head hours left in existence in the world to transfer the volume of tape known to be in archival preservation.

But of course the 800lb gorilla in the post production suite, and one that is sadly beyond the word length permitted to me to discuss substantively, is that of 'born digital' content. In an era when film is no longer being made, that basically means everything that flows into a collection from here on in. What is an age of fantastic and undreamt of opportunity for filmmakers (a D SLR camera costing less than a grand can produce a quality of footage that could only have been achieved with 35mm a decade ago), presents a technical challenge for archivists that makes learning to manage nitrate decomposition and vinegar syndrome seem like a classroom science project. The only thing that is certain is that we are experiencing both rapid and profound change in the technology that underpins everything that we as archivists do, and that what the state of the archive is in a decade's time is essentially anyone's guess.

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