All Singing, All Talking, All Digital: Media Windows and Archiving Practice in the Motion Picture Studios

RANDAL LUCKOW and JAMES M. TURNER*

RÉSUMÉ L'étude de cas d'InterPARES 2 sur les images en mouvement a porté sur les pratiques d'archivage numérique d'un studio commercial de cinéma relativement au matériel généré par un film produit par infographie. Les résultats ont montré que le désintérêt traditionnel des studios de production pour les documents qui pourraient avoir une valeur archivistique potentielle s'est transposé dans le monde du numérique. Afin d'expliquer les raisons pour lesquelles l'industrie du cinéma n'arrive pas à croire que les bonnes pratiques archivistiques sont justifiées sur le plan économique, les auteurs examinent le développement de l'industrie cinématographique en lien avec la propriété culturelle et af firment que la vision à court terme des studios les prive de futures occasions de profit. Les auteurs explorent les modes pour ce qui est de l'emballage et de la consommation des médias et ils avancent que les sources de revenus présentement disponibles et non exploitées par les studios, de pair avec les possibilités futures encore inconnues, of frent un incitatif économique suf fisant pour que les studios veillent à l'archivage systématique de leurs documents dans un centre d'archives. Les auteurs concluent que les studios ont tout à gagner en adoptant de meilleures pratiques archivistiques à l'étape de la production cinématographique, que ceux qui travaillent en collaboration avec des archivistes professionnels seront des acteurs gagnants dans le monde rapide et imprévisible de l'évolution des médias et que, dans tout ce processus, les documents du patrimoine culturel auront une considération qu'ils n'ont jamais connue auparavant.

* We thank the other members of our research team, Andrew Rodger (Library and Archives Canada), Isabella Orefice (Associazione Nazionale Archivistica Italiana), Mary Ide (WGBH Educational Foundation), and Marta Braun and Michael Murphy (both of R yerson University), for their work on the moving-image case studies of InterP ARES. We also thank Yvette Hackett, the chair of our working group within the project, for much help and guidance with our work. We are grateful to our partners in this research, without whom we would not have been able to collect data, and to the agencies who funded this work (including the Social Sciences and Humanities Research Council of Canada, under its Major Collaborative Research Initiatives Program, and the National Science Foundation of the United States), and to our institutions for their contributions in kind. Finally , we thank Luciana Duranti of the University of British Columbia for inviting us to participate in this exciting and challenging project, and for her help and encouragement throughout its duration.

ABSTRACT The InterPARES 2 case study on moving images investigated the digital-archiving practices of a commercial movie studio with regard to material from a computer-generated animated feature film. The results showed that the traditional neglect of potentially useful archival materials on the part of the movie studios, is carried over into the digital world. In order to explain why good archival practice has not made economic sense to the industry over the years, we review the development of the motion picture industry in relation to cultural property, and argue that the short-sighted vision of the studios deprives them of future profitable options. We look at trends in media packaging and consumption, and speculate that untapped revenue streams currently available and unknown future possibilities provide enough economic incentive for the studios to archive their assets in a systematically organized repository. We conclude that the studios stand only to gain from implementing good archiving practice at the time of production, that the victorious players in the fast-moving and unpredictable world of media evolution will be the ones who have the help of professional archivists, and that in the process, cultural heritage materials will get better care than they have ever had before.

Introduction

InterPARES 2 Case Study 09 (Digital Moving Images – Inputs, Processes, and Outputs) as initially proposed and accepted, investigated the digital-archiving practices of a CGI (computer-generated imagery) animated feature created by a commercial movie studio. As the project proposal notes, the goal was "to build a model describing and explaining the processes involved in creating digital moving image products and the by-products resulting from the activities, including occasional analogue elements."[1]

Initially intended as a single investigation, this case study continued to develop interest among the InterPARES 2 researchers, and eventually four studies were carried out, investigating the practices of the commercial movie studio[2] as well as those of three additional institutions: a public broadcaster (Public Broadcasting System's WGBH Boston)[3]; a public movie producer (the National Film Board of Canada)[4]; and a private multimedia producer

1 See "Case Study Proposal in Focus 1: Artistic Activities," http://interpares.org/display_file.cfm?doc=turner_moving_image.pdf, (accessed 28 January 2008), p. 1. Completed InterPARES reports for all the moving-image case studies are available at http://interpares.org/ip2/ip2_case_studies.cfm?study=8 (accessed 13 February 2008).

2 Marta Braun, Mary Ide, Randal Luckow, Michael Murphy, Isabella Orefice, Andrew Rodger, and James M. Turner, "Report of the Investigation of Digital Entities in a Commercial Film Studio" (31 August 2004), http://interpares.org/display_file.cfm?doc=ip2_commstudio(complete).pdf, (accessed 28 January 2008).

3 See http://interpares.org/display_file.cfm?doc=ip2(wgbh)_complete.pdf (accessed 28 January 2008).

4 See http://interpares.org/display_file.cfm?doc=ip2_nfb(complete).pdf (accessed 28 January 2008). The National Film Board of Canada (NFB) study was the only case study that focused

(Altair4 Multimedia, a Rome-based company that creates websites and information aids for museums and institutions).[5] The results of the InterPARES 2 case study on moving images showed that the archiving practices employed in the collection of moving images are similar, whether the assets created are physical or digital.[6]

In this article, we concentrate on putting the results obtained in our case study into the context of how commercial movie studios distribute and store their product. We argue that the vision of the studios, which has for many years caused them to focus their energies on immediate profit, deprives them of future profitable options. In light of our study of current archiving practice in the commercial movie studios, we document cases where the studios have lost assets by lack of good archiving practice, and identify markets that might be exploited by the reuse and repurposing of digital entities created and preserved during the course of movie production. We conclude that studios only stand to gain from implementing good archiving practices and involving studio archivists at the time of production; these activities would in turn allow not only for the further studio exploitation of digital assets, but also improvements in the preservation of moving-image, cultural-heritage material.

Background on the Motion Picture Industry

The motion picture industry in Hollywood is just as mean and awful, and glorious and rewarding as any other business. Business can be a ruthless game of strategy. Romantic notions of Hollywood glamour aside, the usual business rules apply. If your product is not profitable, you need to sell something else. If your employees cannot create a product you can sell, you get new employees who can create a sellable product.

Thus it is not surprising that the motion picture studios that create wonderful elements of cultural heritage do not value these motion pictures in the same way media consumers do. Motion picture studios create their products to make money, and from their point of view, any warm feelings consumers

on Canadian production. Since there is no studio system in Canada, and since NFB production tends to focus on non-fiction and techniques of animation, its situation is not comparable to that of the Hollywood-studio system.

5 See http://interpares.org/display_file.cfm?doc=ip2_altair(complete).pdf (accessed 28 January 2008).

6 James M. Turner, Mary Ide, Randal Luckow, and Isabella Orefice, "Improving Access to Audiovisual and Multimedia Materials: The Moving Image Case Study of InterPARES 2" (paper presented at World Library and Information Congress: 71st International Federation of Library Associations and Institutions [IFLA] General Conference and Council, Oslo, Norway, 14-18 August 2005), http://www.ifla.org/IV/ifla71/papers/133e-Turner.pdf (accessed 17 February 2008).

get from spending time in a darkened theatre watching iconic films such as *The Wizard of Oz* are incidental.

In order to exploit a motion picture to the fullest, various versions of a title (sometimes called different *cuts* or *edits* of a title) are created and released. Usually, these versions are tailored to suit a specific media window, such as a theatrical release version, an airline version, or a television version. The term *media window*, which we discuss in more detail later, designates a particular market (such as a theatre, television, home video, etc.) in which media is made available to consumers. The release of their product to the various media windows is how the studios generate profit.

Historically, after the studios have exploited their product to the fullest, they have either sold it or simply incinerated it to reclaim the silver in the negative. While this may sound horrifying to archivists, it is the result of good economic reasoning. Storage costs money, and titles that do not earn their keep are either sold to a new owner or discarded.

In 1949, as Horak notes, Universal Studios burned their entire nitrate (nitrocellulose) holdings, some 5,553 silent-film titles, to reclaim the silver contained in the film emulsion.[7] These destroyed films consisted of titles made between 1912 and 1930. The reasoning was most likely that the cost of storing flammable nitrate stock (including many titles which no longer had any ability to generate revenue) did not make economic sense. Nitrate was usually stored in special fireproof bunkers, each with a ventilation chimney. To help minimize the risk of complete loss, prints and corresponding preprint materials were distributed among various bunkers, sometimes far apart (for example New York and Los Angeles). Thus if there were a fire in one of the storage bunkers, the studio could still use the material in the other bunker to make and distribute more prints.

By 1952, safety stock (cellulose triacetate) replaced nitrate stock as the preferred stock for both negatives and prints in the motion picture industry. Safety stock was much cheaper to store because storage costs were lower since, unlike nitrate stock, triacetate was not designated as a hazardous material. Because safety stock did not have to contend with a reputation of being combustible, it did not require the special fireproof bunker storage that nitrate did.

The perception that nitrate stock is hazardous is certainly one of the reasons why the loss of motion picture titles is much more pronounced for titles produced before the 1950s. As the use of safety stock replaced nitrate stock in the industry, older titles on nitrate stock were often destroyed and the

7 Jan Christopher Horak, "The Hollywood History Business," in *The End of Cinema As We Know It: American Film in the Nineties,* ed. Jon Lewis (New York, 2001), pp. 33-42.

silver salvaged. Some older titles still considered exploitable assets were copied from nitrate to safety stock, but many others were simply discarded.

Storage costs constitute a major reason why titles commonly exist only in a single version, such as the television version. Some motion picture titles simply do not exist anymore, or exist only in poor condition, and in other cases, only a fragment remains. For example, a nine-minute fragment of Greta Garbo's *The Divine Woman* was discovered in a Moscow archive in 1995. Prior to this discovery, this MGM film was a lost Garbo title.

The question raised here is this: How is it possible that any work of an artist as revered as Garbo could have been lost or destroyed? The answer is that destruction of titles no longer used is intended to be a cost-saving process, without respect to issues of cultural custodianship. Simply put, a Garbo title costs the same amount of money to store and maintain as any lesser-known title. As Horak points out, "for the studios, the exploitation of film history is never more than a short-term goal. The industry is structured only to achieve immediate profits, rather than invest in long-term strategies."[8]

The long-term strategy Horak speaks of here is that of preservation and ongoing asset management. Such a strategy is not one of the "immediate profits" the industry aims to achieve. Long-term strategies of preservation and asset management are, of course, the realm of libraries and archives. The two approaches are thus at odds: corporate business needs to show immediate profitability, and archives need to preserve and maintain access to the documents of that corporate business.

A related notion is that support departments, such as a library or an archive, exist as cost centres. Closing a studio archive may seem like a shortsighted monetary decision, but following the logic of the immediate-profit paradigm, it makes eminent sense. However, along with the unprofitable cost centres (e.g., an archive), also gone are the archivists that protect, manage, and provide for asset discoverability. It should be noted that the studios do not necessarily insist that the person who holds the staff title of archivist (or its equivalent) have a professional qualification specifically (such as a master's degree in information management) as part of the job description. In other words, such an employee is often hired on the basis of other mandatory skills, such as film handling and media identification skills, and any knowledge of archive administration practice they have is a bonus that the studio never anticipated in hiring the employee. In any event, without these professional gatekeepers, assets get misplaced, destroyed, or lost in storage. And lost assets are not available to be exploited. The loss of the possibility of exploiting assets calls into question the profitability of having closed the archive in the

8 Ibid., p. 34.

first place. We note that in the digital world, a misplaced asset is even less likely to be rediscovered than an analogue asset, since there is nothing physical to look through in order to try and find it.

Asset Management and Revenue Streams

The term "essence" is used in many contexts to describe the data comprising digital materials, in opposition to the metadata used to describe these materials. Thus the "essence" combined with its metadata constitutes an "asset." "Asset management," therefore, is the term used in moving-image archiving for what archivists and other information professionals call information management. If the term sounds as if it would be more at home in the realm of finance or banking, this rings true because it resoundingly reflects the approach to managing moving-image materials in the commercial studios. The reason archiving occurs in the world of moving images is that the lucrative "assets" need to be managed in order to generate revenue.

Digital entities created during a movie's production can include anything (character models, artwork, trims and outs,[9] alternate takes, and so on) that was either used to create the master assets, or discarded for whatever reason during the course of production. Once a production has wrapped up and has moved into the distribution phase, all production elements needed to produce a finished product have been finalized to create the distribution masters (from which the theatrical release and all subsequent media windows are derived) and archival masters (these are the masters that are stored in the archive from which all distribution masters are derived); there no longer exists any immediate use and reuse of any of the digital entities saved during the course of production. Since there is currently little reuse and repurposing of these digital entities, there is not enough economic incentive for the studio to provide ongoing access or to attach rich metadata to these entities. Using this logic, this means that there is no value in archiving digital entities as one would archive traditional records. However, there are many currently available ways to exploit these digital assets, and an unknown number of future revenue streams. In our view, these provide enough economic incentive to acquire, archive, preserve, and provide access to digital assets in a systematically organized repository.

Examples of these additional revenue streams can be classified as internal and external. Internally, a digital-asset-management solution[10] that integrates

9 Outs, also known as outtakes, are material shot for a production but not included in the final edit.

10 A digital-asset-management solution is a computer system that allows for the ongoing administration of digital files.

production with marketing and publicity departments, allows the reuse and repurposing of production assets to create campaign materials such as trailers, advertising, posters, and press kits. A digital-asset-management solution integrating production with consumer products departments can reuse production design work in the creation of style guides[11] for the licensing of intellectual property (for example, digital character models can be scaled to create action figures, and other production assets can be reused to create textiles such as bedsheets and clothing, and collectible artwork). Externally, subsequent media windows such as pay-per-view, broadcast television, and cable television can exploit digital assets in creating advertising campaign (promotional) materials. Finally, direct distribution to the consumer is a major opportunity for reusing and repurposing digital-production assets. The phenomenal growth of the DVD market since 1997 is an example of a new revenue stream that created a market for value-added material (most often deleted scenes or alternate takes), distributed directly to the consumer. In 2000, studio revenues generated from the sale of DVDs surpassed revenue generated by box-office-ticket sales. It was expected that by 2007 DVD revenues would be twice that of box-office sales.[12] We envision direct distribution (using either broadband or new media delivery) to the consumer of selected digital production assets, creating a new revenue stream in the process, along the lines of value-added material in DVDs.

The InterPARES Commercial Studio Case Study

Case Study 09 (Digital Moving Images – Inputs, Processes, and Outputs) investigated the preservation and management of digital assets created during the production of moving images. One section of this study focused on the visual assets made in the creation of an animated feature in a major commercial motion picture studio; the study was limited to visual assets to keep the research manageable, as audio is created with its own asset-management processes and results in a group of creative assets separate from visual ones. The researchers concentrated on documenting the workflow of visual assets from inception to production of the final output TIFF images.

As with all InterPARES 2 case studies, the researchers were required to respond to a set of twenty-three questions at the completion of each case

11 Style guides prescribe the parameters allowed for reproducing artwork in the creation of licensed consumer products.

12 Subhankar Bhattacharya and William Comerford, "DVD Supply Chain: The Emerging Challenge to Media Profitability," *Infosys Technologies Limited, White Paper* (April 2006), http://www.infosys.com/industries/media-entertainment/studios-network/white-papers/DVD_Supply%20Chain.pdf (accessed 13 February 2008).

study.[13] In this way, comparison of the results across various contexts and situations was fostered. In our own case, this method also helped us compare the results of our four studies.

The case study examined the concept of digital-asset management (DAM) within studios, which is considered a workflow/disaster recovery process, the sole purpose of which is to bring assets to a completed state, that state being an individual frame of film or its equivalent. Once the master negative is struck for the completed film (or its equivalent), all assets supporting that master are no longer considered current and are either deleted or written to ADSM (Adstar Distributed Storage Manager) backup tapes. The backup tapes exist for disaster recovery purposes only, and are intended only to support the current production. Once production is complete, the backup tapes are put into storage.

Assets are written to backup tape without the benefit of a structured finding aid to recall any specific asset. If the exact file name is known, then that particular file may be retrieved from storage by choosing an ADSM backup tape that was created in a date range likely to include the file. The tape can then be loaded and searched for a file name match. However, if an exact file name is not known, it is unlikely that the file will be found quickly, if ever. Because very little value is attributed to the digital assets used to create the final product, very little effort is put into managing these assets once they are written to backup tape. Such an approach means that easy discoverability is not possible, since there is no way to browse assets stored offline in a quick or meaningful way.

The InterPARES study found that digital-asset management is carried out in the studios for a single purpose: to fill traditional media windows.

Media Windows in a Nutshell

As mentioned earlier, a media window is a particular market in which media is made available to consumers. A *release window* is simply the length of time media is distributed to a market for the purpose of returning revenue. For example, when a motion picture title is released to theatres, there is a *theatrical window* for that particular title. How long the title is held in that window (how long the film is shown in the theatre or cinema) is more specifically referred to as the *theatrical release window*.

Subsequent media windows include home video (VHS, DVD, etc.), cable television, broadcast television (network television), and new media. *New*

13 These can be consulted at http://interpares.org/ip2/ip2_23_questions.cfm (accessed 13 February 2008).

media is a term used to refer to any emerging technology such as broadband (this is media accessed via the Internet, for example, podcasting) or other new distribution and exhibition devices outside of the currently defined media windows. This also includes hand-held devices such as video iPods and video-capable cell phones.

The order in which the media windows are exploited is not canonical. The release of titles to theatres currently remains the initial release window, but the amount of time a title is exclusive to any particular media window continues to shrink as a result of consumer demand, technology, and piracy concerns. These factors continue to put pressure on how titles are scheduled for release to all subsequent media windows. The sequencing of media windows is likely to be defined on a title-by-title basis, based on contractual agreements, which have the sole purpose of maximizing revenue returned to the studio.

So, while the entertainment industry invests meaning in the media-window model, and has structured its business units around it, the model is neither obvious nor of interest to consumers. For example, network broadcast television is available to most consumers via their cable or satellite providers. For these consumers, network television is perceived as simply another cable-network channel. "It's a fact that buzzmachine.com's Jeff Jarvis believes has changed the meaning of TV. 'Just as our kids don't understand the difference between broadcast and cable,' he says, 'the line between TV and Internet TV is about to disappear'."[14]

There is much more. Technology is rapidly redefining media windows, as we shall see in the sections following. This list of media windows is not exclusive and they are presented here without implied order.

The Theatrical Window

Prior to the 1948 breakup of studio control of production, distribution, and exhibition, the studios operated under a model of full vertical integration[15] of the market. The studios were ruled to be a monopoly and this vertical integration model was for the most part prohibited by the *United States vs. Paramount Pictures, Inc.* ruling of the US Supreme Court.[16] The vertical integration of production, distribution, and exhibition was broken apart, the studios were divested of their theatre chains, and effectively put out of the

14 Bob Garfield, "YouTube vs. Boob Tube," *Wired* (December 2006), http://www.wired.com/wired/archive/14.12/youtube.html (accessed 13 February 2008).

15 Vertical integration is the process by which all steps are controlled by a single company in order to increase its power in the marketplace.

16 *United States v. Paramount Pictures, Inc.*, 334 US 131 (1948).

exhibition business. Despite this, the studios, distributors, and exhibitors of motion pictures continued to hold their audience captive until television reached competitive penetration of the consumer entertainment market.

Before the antitrust breakup of the studio-owned theatres, a motion picture release could be held in the theatrical window until it turned a profit. Remember that the studios owned the theatres as well as the distribution hubs, and thus controlled the shipping and delivery of prints. However, once ownership of the theatres was divested from the studios, the studios were forced to negotiate the length of the release window (how long the theatres had exclusive rights to generate revenue on a motion picture title) with the theatre owners through distributors, some of which are independent distributors and some of which remained vertically integrated with the studios.

More importantly, the studios had to negotiate their percentage of box-office sales. Again, this was actually done contractually between the exhibitors and the distributors. Part of the antitrust ruling instructed that the negotiations were to be on a title-by-title and on a theatre-by-theatre basis. An individual contract would be written to reflect the agreement for the exhibition of each title in each individual theatre.

After the studio-owned theatres were sold, the new theatre owners had to be able to generate the cash necessary to pay the bills (the new owners had to pay for all overhead house costs out of their share of the box-office sales). This negotiation of deals with the distributors in order to generate acceptable profit-sharing partnerships remains the model today.

Theoretically, theatre owners and the distributors (again, most distribution remains integrated with the studios) take approximately a 50/50 cut of box-office sales (although independent distributors and independent films exist, the bulk of films in release are studio products distributed by same studios' own distributors). However, in practice, the distributors negotiate for more of the box-office during the first few weeks of a release window (seventy to ninety percent) and progressively less for each week a film stays in the theatre. In this way, a very popular film is lucrative for everyone as consumers continue to patronize a popular film long after the initial release weekend. And this model offers an incentive for theatre owners to hold a title in exhibition longer, because their cut of the box office grows larger each week.

On the other hand, a poorly performing film is a disaster for everyone and is subsequently removed from theatres quickly, to be replaced by another film, hopefully one that is more popular and more lucrative. How quickly a poorly performing film is held in the theatrical release window is based on the contract between distributors and exhibitors. However, it is important to understand that nearly half of the total theatrical profit on each individual title is made during the first week or so of release, and that a studio will realize almost complete box-office profit within a month of theatrical release. As Einav observes, most of the revenues are concentrated in the first few weeks, with the first week accounting, on average, for almost forty percent of the eventual box-office revenues, and the first four weeks accounting for about eighty percent of them.[17]

An interesting side effect of the antitrust ruling against the studios' vertical integration model is the growth of the popcorn business. The explosion of snack bars and concession stands in theatres after 1946 is a testament to the revenue-generating power of popcorn. Theatre owners know that the real money is in concession stand sales; from their point of view, the movie itself is simply an *added value* for consumers.

The Broadcast Television Window

Television began commercial broadcasting in the United States in the early 1940s, but penetration into the consumer market did not take off until the mid-1950s. In 1950, nine percent of US households owned a television set, but by 1955 this figure had leaped to 64.5 percent. The growth of the post-war suburbs, funded and fuelled by the GI Bill, was accompanied by the penetration of television into the consumer market. Large numbers of returning GI's wanted to own a home in the suburbs, and they wanted to have a television set in that home.

This phenomenon was largely responsible for a downturn in box-office receipts, which generated the motion picture industry revenue. Consumers were more likely to stay home and watch their new television sets than to spend the evening at the theatre. Fortuitously, however, the studios quickly learned to supply product to the television market. The paradigm of the single-media window of theatrical release now shifted, and television became a new media window.

The Hollywood studios initially viewed television as competition for the same consumer demographic, but eventually they learned to use television as a new revenue stream to exploit their titles. This was especially true for older titles that either did not perform well theatrically, or had simply run their course of exploitability. Seemingly, the major studios (MGM, Warner Brothers, Paramount, RKO, etc.) were more reluctant than the minor and other much smaller studios (Universal, Republic, etc.) to take advantage of the new television market for their exhausted titles (although a major studio, RKO, sold its catalogue to television in 1955).

Walt Disney was one of the first of the Hollywood moguls to truly understand that television was both a new revenue stream for theatrical titles and an

17 Liran Einav, "Seasonality and Competition in Time: An Empirical Analysis of Release Date Decisions in the US Motion Picture Industry" (Palo Alto, CA, 2002), http://www.stanford.edu/~leinav/Seasonality.pdf (accessed 13 February 2008).

ingenious new marketing tool to be exploited. In 1954, the *Disneyland* anthology series hit the ABC airwaves as a thinly-veiled advertisement for the Disneyland amusement park and for the Disney brand. Indeed, the first episode, broadcast on 27 October , was entitled *The Disneyland Story* . How many American children were thus indoctrinated into the notion that the best reward for good behaviour was a family trip to Disneyland?

In 1958, Universal moved into the production of television content when MCA's *Revue TV* moved to Universal City . The Music Corporation of America (MCA) would eventually fully merge with Universal in 1962 to form MCA/Universal. In the 1960s and 1970s, MCA/Universal clearly supported television-specific production, offering a good example of how television as a media outlet was eventually exploited by the motion picture industry.

What did television mean for consumers? They could now pick from a number of choices of what they wanted to consume at any particular moment. They could go out to see one new movie at one location, or they could just sit in their own homes and pick from the many choices on TV. On any given day, most chose to stay home and watch TV rather than go out to the movie theatres. For the studios, then, television was both a competitor and an additional revenue stream.

The television media ownership model can be represented in this way: the studio creates (produces) a television programme (medium) containing content (a title), which is exhibited to a consumer . The consumer watches the program, but does not own anything afterwards. Both the theatrical experience and the television experience can be considered as *passive* consumer experiences, but there is one notable change with television: consumers no longer needed to leave their homes and go to a physical place (a theatre or a cinema) to purchase and consume the media content.

The Home-Video Window

The emergence of home-videotaping technology in the 1980s created a new media window in which to exploit titles. Home video occurs sequentially somewhere between theatrical release and broadcast television. Titles are sold to consumers in the form of pre-recorded videotapes, DVDs, and as of 2006, downloadable files.

In 1984, the US Supreme Court ruled, in *Universal vs. Sony Betamax,* that there was no copyright infringement when consumers videotaped television programming for personal use. This paragraph of the ruling details the then current media-window model:

> The two respondents in this action, Universal City Studios, Inc., and Walt Disney Productions, produce and hold the copyrights on a substantial number of motion pictures and other audiovisual works. In the current marketplace, they can exploit their

rights in these works in a number of ways: by authorizing theatrical exhibitions, by licensing limited showings on cable and network television, by selling syndication rights for repeated airings on local television stations, and by marketing programs on pre-recorded videotapes or videodiscs. Some works are suitable for exploitation through all of these avenues, while the market for other works is more limited.[18]

The ability of consumers to legally own programming was upheld by the US Supreme Court. Thus the real consumer revolution that home-video recording created was not that of simply time-shifting television programs and skipping commercial advertisements, but rather that of owning media. They could record programming, then keep the tapes and build up a library of their own. It is important to note that off-air recording does not result in revenue for the studio, while selling pre-recorded videotapes, or videodiscs (now DVDs, etc.) *does* result in studio revenue. The studios had by now realized that in addition to distributing motion pictures and television programs, which are exhibited to consumers in very specific ways (through theatres or broadcasters), pre-recorded videotapes could be sold much more broadly and directly to consumers in any retail setting.

Just as the theatres do not have to share concession-stand sales with the studios, the studios did not have to share home-video sales with the theatres. Home video was the first new revenue stream to be exploited by the studios' distribution arms since the advent of television. It is a conundrum that the only competition to home-video sales is consumer ownership. Just as it is unlikely consumers would own more than one copy of a book title, consumers were unlikely to own more than one copy of a home-video title. While home video was a new revenue stream, the sale of a home-video title occurred once per consumer. And whether a title had been recorded off the air (or off cable television or satellite), it most likely existed as a single exemplar in a consumer's video library.

While the Sony Betamax ruling considered consumer recording of content as *fair use*, the studio was still acknowledged as the owner of the work recorded by the consumer. So, off-air consumer recording was legally permitted, but consumers were forbidden to profit from having recorded copyrighted material.

However, the home-video revolution is such that by 2000, the sales of home-video titles generated more revenue for the studio than theatrical box-office returns (home-video sales of US $8.3 billion compared to box-office returns of $7.7 billion). And, title for title, this equation continues to become more lopsided in favour of home-video sales. The theatrical window may now be considered simply an expensive marketing campaign to promote the home-video release of studio titles.

18 *Sony Corp. of Amer. v. Universal City Studios*, 464 US 417 (1984).

Cable Television and the Pay Window

The number of choices available to broadcast television consumers is limited to the number of channels available. And the number of broadcast channels available to consumers is restricted by a combination of regulations and geography. Cable television, however, is not limited to the same extent by the restrictions placed on broadcast television.

Cable-television technology increased the number of channels available to consumers, and thus the number of choices. More importantly, this new distribution technology redefined the television media-window revenue-stream model as a pay model for consumers. Broadcast television remained free, but cable television became available only for a monthly subscription fee.

In addition to the cable subscription fee, another pay service available through cable is the premium channel. This is where HBO, Showtime, and their cohorts squeeze additional revenue out of a release of a studio title prior to the basic cable-television window. The premium-channel window may follow or compete directly with pay-per-view (PPV) channels. PPV usually makes movie titles available a month or two after a title has been released on home video, and is not to be confused with video-on-demand (VOD). PPV offers titles shown at a scheduled time, while VOD offers consumers the option of *when* they wish to view the title.

Consumer Choice and Control

It is difficult to pin down the current "revenue-stream model" in an industry in which change is accelerating due to the availability of new consumer technology. The change is driven by technology, but technology is driven by consumer demand. Technology has allowed consumers to own media that previously could only be experienced in a linear fashion (theatrical and television programming), and has firmly given them the same sort of ownership and library-building capabilities with motion pictures they have had since the book reached the consumer market.

Looking at the history of the entertainment industry, starting with the Hollywood-studio system, at least two commonalities are apparent: new technology replacing old, and the shift of programming control (choice) to the consumer. This shift of power and control toward consumers began with the advent of television, and continues today at an ever-increasing rate. Coupled with consumer drive to build video libraries (whether legally or illegally) and the technology in their hands to do it, the question is: How will the studios fight to retain ownership? Has the horse left the barn?

Consumers do not want to simply watch movies at home, as is evidenced by the fact that theatrical release persists as the initial media-release window. However, in addition to the possibility of consuming the media in a movie theatre, consumers want the possibility of ownership and control of that media. And *control* means media must be supplied in a way that gives consumers the ability to decide when, where, and how they use it.

The challenge for media providers, the studios, is to find a way to profit from that model. Cable television and direct-broadcast satellites have chosen to compete (as exhibitors) for consumer attention by offering nearly unlimited choices, and a modicum of control through PPV and VOD. But how can a single motion-picture title offer *choice* to the consumer and yet also offer *control*?

Home video (Betamax, VHS, etc.) offered consumers the control they desired and the ability to build libraries. However, DVD enhanced the consumer experience by offering better non-linear control (that is, the possibility of random access as opposed to winding a tape until reaching the desired place), and multiple version *choice* (DVD branching, which offers decision points at which viewers can indicate what path they wish the story to take). Furthermore, the added-value material commonly contained in DVD releases created an incentive to consumers to repurchase titles they perhaps already owned in obsolete formats (Betamax, VHS, Capacitance Electronic Disc, or CED, etc.). In addition, the heightened image quality of DVD helped consumers feel they were purchasing an item of greater value than that of the formats it replaced, rather than merely getting a replacement copy.

But what effect have changing media windows and revenue streams had on studios and their archiving practices? Beginning around 1950, asset destruction by the studios slowed down because the studios found that they could exploit those assets; as a result, titles stopped disappearing from studio vaults at the same rate as they had prior to then. In this regard, the addition of the television window as a new revenue stream after the initial theatrical-release window is no coincidence. We can hope that the history of asset destruction has reached a turning point, but arguments that are much more solid need to be made for the preservation of digital assets for future exploitation. The arrival of DVD with its capacity to include additional materials is one such argument. Market demands (new media revenue streams beyond the theatrical release window) and the uncertainty of the future may be two more.

Is it reasonable to ask whether the advent of new media windows (such as broadband) and advancing technology will require studios to make a closer examination of the current state of their asset management? More specifically, what does the studio create that could constitute added value material that would entice consumers to make repeated purchases of the same title? Is there a way to leverage these assets to create multiple versions or packages of titles that can be sold to consumers over and over again in new and inventive ways? Perhaps the time has come for studios to take stock once again of what they throw away, and to involve archivists in those assessments.

Providing for the Reuse and Repurposing of Digital Assets

Many studio digital-asset management policies follow the traditional "put it in a box, put it on a pallet, put the pallet in a cave" preservation model. This means after the media windows have been fulfilled, the studios "preserve" their digital assets on removable media, which is then put into storage. The inability to refresh or reformat a digital asset in storage ensures its obsolescence, and in many cases obsolescence occurs within a few years.

The problem with this traditional approach is that there is no provision for reuse and repurposing of digital assets *after* the initial release-window cycle is exploited. In fact, it is more accurate to say that in this model, digital-asset management is solely a function of production, and production ceases after the media-window release schedule is begun. Any digital asset ceases to be tracked once the media-window release schedule begins, whether or not the asset is incorporated into a product that will subsequently feed other known media windows.

Additionally, if a need arises during the media-window release schedule that requires access to the original digital assets, this need will very likely go unfulfilled. In the current model, it is easier and cheaper to create new assets to satisfy a need than it is to spend the time necessary to scour for assets written off into storage.

As Horak summarizes, the function of the studio archive has not been to "make history visible" or assist in generating revenue, but instead to "bury it," thus making history and assets inaccessible for reuse and repurposing.[19] However, what the studios are burying is not only cultural history, but surely their own corporate history as well. Also buried alive are added-value material assets and other content, which the studios are currently unwilling or unable to exploit fully, due to either neglect or short-sightedness: unwilling because of the effort required to get beyond the inertia of the present system and study trends in an attempt to strike out for new revenue streams, and unable because most people working in the studio-system archive are not directly involved in production (asset creation). Archivists need to be directly involved in the production pipeline if they are to have the necessary clout to evangelize, to institute ongoing change to asset-management processes, and to keep collection and storage policies sufficiently current to be able to respond to changes in media windows.

Selling the Same Title to the Same Consumers, Repeatedly

In the US, analogue standard definition television (SDTV) is mandated by the

19 Horak, p. 41.

Federal Communications Commission (FCC) to go off the air on 17 February 2009. In Canada, the date fixed by the Canadian Radio and Telecommunications Commission (CRTC) for this is 31 August 2011.[20] Broadcast technology marches on. How long will it be before a more technologically advanced format replaces high-definition television (HDTV)? In September 2006, Ultra HiDef TV (with a resolution about sixteen times that of HDTV) was shown at the International Broadcasting Conference (IBC) in Amsterdam by the Japan Broadcasting Corporation (NHK). It is certain that technology will continue to advance and that studios will continue to generate revenue by re-releasing titles in new, improved formats. Consumers want media. They crave to collect it. It is a bright, shiny, coveted object that must be owned, enjoyed, and fetishized as a symbol of wealth.

Perhaps by continually revising the content, media providers can encourage additional purchases of the same title, as the studios have already discovered with special editions and director's cuts, for example. The advertising and packaging of many DVD titles feature eye-catching, marketing-driven words such as *restored* and *uncut.* These releases are often the result of costly and Herculean efforts to recreate an approximation of the original work. However, such works could have simply been archived properly in the first place. The results of our InterPARES study suggest that in respect to digital assets, studio history is repeating itself.

Studios need to come to see archived digital assets as potential commodities just as the finished movie products are already viewed, and ask themselves what they can collect, manage, and preserve that consumers may one day find of interest. New productions can be created economically by repurposing and reusing content (as has been done by television productions such as *Sealab 2021* and *Harvey Birdman, Attorney at Law*). By properly managing digital assets over time, the studios can keep them ready to be recontextualized as added value material, thus preparing for additional revenue streams not yet identified. Perhaps here more than in other contexts, archivists need to do a good selling job on their employers. Supporting their arguments with data and sales figures, archivists need to demonstrate that the studios stand to increase their profits if they initiate good archiving practice. Not every digital asset is golden, but given the mentality of the studios, archivists might argue more forcefully on the basis of how much money the studios stand to lose by *not* adopting well-considered, digital-asset collection policies.

20 Conseil de la radiodiffusion et des télécommunications canadiennes (CRTC), "Décisions portant sur certains aspects du cadre de réglementation de la télévision en direct." Avis public de radiodiffusion CRTC 2007-53, (Ottawa, 17 May 2007), http://www.crtc.gc.ca/archive/frn/notices/2007/pb2007-53.htm (accessed 17 February 2008), p. 13, section 61.

Media Marches On

As conservative businesses, the studios continue to operate defensively as the media windows continue to evolve. In some ways the change and the shuffling of media windows is slow, but the pace of technological change is fast, as evidenced by the rhythm at which video-on-demand, broadband, the iPod, and movie downloads for purchase and then for rental arrived on the scene. Rather than investing their efforts in trying to legislate change away, the studios need to be at the forefront of exploiting new technology to generate additional revenue. Here the model changes from one of adding new media windows to existing products to one of exploiting completely new types of revenue streams by creating new types of media.

Historically, entertainment has been enjoyed by displacing consumers to a venue such as a theatre. The long-playing (LP) record, radio, and television changed this situation, permitting consumers to enjoy entertainment at home. Interestingly, the growth of consumer choice has blossomed in the home as broadcast television offered ever-changing choice. In a way, the exhibitors of motion pictures can be said to have followed the television model when they started building multiplex cinemas, which allowed consumers to pick from a number of titles currently in release. Ironically, this meant smaller screens, reversing one of the features originally used to compete with television. Still, these screens were larger than television screens, although with the arrival of Panasonic's 103-inch screen in 2006,[21] and the announcement of its 150-inch screen in 2008,[22] we can imagine that the concept of building small-screen multiplex theatres might be of little interest to consumers today. Furthermore, we wonder whether the advance of such technologies will mean that the big-screen cinema will simply move into the home.

Meanwhile, television shows sold for home consumption without the commercials have become akin to movies, packaged season by season on DVDs and made available in the same places movies on DVD are purchased. Many aficionados of such products much prefer to watch the shows this way, consuming several episodes in a singleviewing session. As Cauchon notes, this new market seems to be without limits, and television networks that have erased their old holdings must be pulling their hair out because older television shows have become a gold mine in this context.[23] Who knew this was

21 "103-inch Plasma to Ship in December 2006," iTech News Net, http://www.itechnews.net/2006/04/22/103-inch-plasma-to-ship-in-december-2006/ (accessed 13 February 2008).

22 "Gigantic 150-inch Panasonic Plasma Flat Screen Television," Planet Apex, http://planetapex.blogspot.com/2008/01/gigantic-150-inch-panasonic-plasma-flat.html (accessed 13 February 2008).

23 Paul Cauchon, "La télé à l'heure du sandwich," *Le Devoir* (20 novembre 2006), p. B7.

going to happen? Who could have predicted it forty years ago? Once again good archiving practice would have paid off, but unfortunately the television networks have not had any more foresight than the movie studios.

Cable television is feeling the heat previously felt by the broadcast networks, and before that the motion picture studios. The DVD-release window is moving closer to the theatrical release date, and competing with pay-per-view television and the premium cable channels. Indeed, the movie *Bubble* was released theatrically, on DVD, and on high-definition television simultaneously on 27 January 2006.[24] It was the first of six films contracted to use this model. Many theatrical exhibitors refused to play the film, ostensibly because of how threatening this pattern of release is to their continued existence as the first media-release window.

As Todd Wagner (involved in financing and releasing the movie *Bubble*) states about the media-window model, "I don't want to go so far as to say broken, but (it) certainly doesn't align with the way people want to consume entertainment today." Steven Soderbergh, the director of *Bubble*, adds, "I'm convinced that five years from now, everything is going to go out like this."[25] It is entirely plausible, even likely, that the current media-window model will become a single-media-window model of a simultaneous multiple-format release.

In addition, the broadcast networks are upping the ante by trying to have cable operators compensate broadcast stations for the retransmission of their signal. In December 2006, the Canadian broadcast television networks petitioned the CRTC to allow them to charge cable and satellite companies for their signals, making broadcast television available only via cable services.[26]

In 1992, the US congress concluded that a local broadcaster could choose to require a local cable operator to either carry the local signal free of charge (this is called "must carry"), or negotiate an agreement with the broadcaster for its consent to retransmit the signal. This choice does not apply to satellite companies, which often charge a separate fee to consumers to provide access to local broadcast stations. Satellite companies already pay local broadcasters a fee for their consent to retransmit local channels. It is likely that the American Cable Association will propose that Congress revisit this matter in

24 "*Bubble:* Another Steven Soderbergh Experience," http://www.bubblethefilm.com/about.html (accessed 13 February 2008).

25 Anthony Breznican, "Movies As You Like Them, on the Same Day!," 2929 Entertainment, http://www.2929entertainment.com/Index.cfm?FuseAction=Page&PageID=1000026&ArticleID=65 (accessed 13 February 2008).

26 "Carriage Fees FAQ: Should Canadians Pay for Local TV?," CBC News, In Depth: Television (1 December 2006), http://www.cbc.ca/news/background/tv/carriage-fees.html (accessed 13 February 2008).

2007.[27] Changes in the US similar to those proposed in Canada would require new congressional hearings.

Media distributors continue to find new revenue streams and new ways to squeeze money out of old revenue streams. They also continue to find new ways of exploiting new media products. While the motion picture has become the value-added material to the theatrical experience (the money-maker being the snack bar), the product is still the blockbuster, the event. The value-added material supports the "packaging" that contextualizes and "brands" the product to a media provider. Whether that provider is the studio, the movie theatre, the network, or the website is immaterial.

The consumer chant of "What you want, when you want it, on the device you want it on" is the manifest destiny of media technology. This notion is borne out by our review of media distribution history. Media providers must allow their archive staff to change collection policies in order to fully exploit value-added material assets for consumer demand and for brand management.

Consumer culture invites consumers to own media. The media industry has moved from a simple model of creator/distributor to a more complex model of creator/distributor/device. It is noteworthy that the evolution has included a loss of consumer control by way of technology, for example digital rights management (DRM) wrapping[28] and devices that do not allow playback of particular media. However, the consumer continues to gain the upper hand on ownership of the media, viewing choices, and the manner in which the media is enjoyed.

Interestingly, as all this unfolds, one of the new media windows involves a return to the theatres. This takes the form of events such as opera,[29] boxing and wrestling matches, hockey games,[30] and rock concerts being broadcast live into movie theatres. Customers pay to attend, making it clear that the experience of going to a public venue to attend an event has not completely given way to consuming media at home, personal ownership, and personal collection of media. For the organizers of such events, live broadcasts represent a way to increase the available audience while shoring up revenues. In addition, these events can of course be recorded and later sold as DVDs, downloads, and so on.

27 American Cable Association, "ACA Supports Congressional Call for Hearings on Retransmission Consent" (2007), http://www.americancable.org/pressrelease/2007/ACA_Statement_Congressional_Retrans_Hearings_Needed-011207-Web.pdf (accessed 16 February 2008).

28 A DRM wrapper is metadata around digital media that locks the content in a way that assures rights are given in order for the content to be used.

29 Daniel J. Wakin, "The Multiplex as Opera House: Will They Serve Popcorn?," *The New York Times* (7 September 2006), http://www.nytimes.com/2006/09/07/arts/music/07unio.html (accessed 13 February 2008).

30 Martin Bilodeau, "La concurrence déloyale du DVD," *Le Devoir* (16 février 2007), p. B3.

Another trend sees the creators of media content moving away from the grip that studio contracts have on them. In October 2007, the music group Radiohead released partial contents of its new album as a download from its website. Fans were encouraged to download the material, and to pay whatever price they thought it was worth. About a third of users paid no price at all for the material. The hard copy, to follow at a later date, contains more songs. In another move, also in October 2007, Madonna entered into a partnership with Live Nation, a company that organizes events. By switching her contractual allegiance from recording studios to events organizers, the singer broadens her exposure, all the while starting yet another new trend in media distribution.

Clearly media, technology for its distribution, and models for distribution are all moving targets. What new opportunities for profit-making may manifest themselves unexpectedly, what future developments in technology there might be, what social and anthropological situations might evolve to create new media-distribution possibilities, and so on, coupled with the unpredictability of it all, mean that holders of media assets have more reason than ever to introduce good archiving practice. The faster they can repackage material to sell it yet again, the faster they can get new product to market. And the better the quality of the preservation and access tools, the faster the material can be found and retrieved to repackage. The victorious players in this lucrative but unstable playing field will be the ones who were smart enough to hire a good professional archivist.

Conclusion

New media represents a technological evolution of distribution which allows the studio product to be sold directly to the consumer. Consumers want ownership, as well as control of the experience. Whether the studio provides this directly to the consumer or not is irrelevant because technological solutions will be found to satisfy consumer demand, illegally if necessary. DRM will prove unworkable, because it goes against the basic principle of a free market society that when you purchase something, you then own it.

In addition, new media will give birth to a new language. Just as the language of television (the way content is presented visually and aurally) is different from the language of motion pictures, the language of new media will be one in which content is presented in ways restricted only by the limits of new media technology.

How the studios will benefit from the new media model has to do with exploiting advances in technology to resell the same title to consumers in a new format, or with value-added material that improves the experience enough to assure another purchase. As a result, digital-asset management with a strong archival presence is necessary now to ensure that the assets created today are available for the variety of formats and technologies of the very near tomorrow.

As the content of YouTube illustrates rather eloquently, new media content is varied, with broadly varying quality levels and targeting a variety of audiences. This reminds us of MacCloud's statement that "each new medium begins its life by imitating its predecessors,"[31] then eventually finds its own language. In the case of YouTube, this may be happening more quickly than "eventually." Hirschorn comments that "DIY [i.e., do-it-yourself] video is making merely professional television seem stodgy, slow, and hopelessly last century."[32]

Consumers now have the tools in their hands to satisfy their demands for ownership and control. The studios are now in a position to stop depending on technological access restrictions and lobbying efforts, and to accept the inevitability of new media and attempt to exploit it as fully as possible. With new media comes the possibility of even more new revenue streams, which generate profit via content manipulation, product placement and partnerships, and new and inventive ways to repackage titles with value-added material that will entice consumers to repurchase titles already in their private collections. Restructuring of the current media-window model is inevitable.

Since many digital-asset management processes can be automated, the studios stand only to gain from implementing good archiving practice at the time of production. By pushing archiving practice back into the realm of production, studio archivists can assure preservation and access, and in turn further exploitation of readily-available digital assets, as new media windows open up and new technology brings new possibilities. And in the process, moving-image, cultural-heritage materials will get better care than they have ever had before.

31 Scott MacCloud, *Understanding Comics: The Invisible Art* (New York, 1993), p. 151.
32 Michael Hirschorn, "Thank You, YouTube," *The Atlantic Monthly,* vol. 298, no. 4 (November 2006), p. 144.