Consumers, Fans, and Control: What the Games Industry can teach Hollywood about DRM

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Abstract

Digitization and the Internet bring the movie industry essentially free distribution for home viewing but also an increased capability to copy. Through legislation and technology the industry has been seeking to fully control usage of the bits it creates; their model is “restrictive” digital-rights management (rDRM) that only allows the user to view the film rather than copy, edit, or create new content. From a business perspective, this type of digital-rights management (DRM) may be the wrong model.

Recent analyses show a drop in movie attendance and an increase in participatory leisure-time activities fueled by the Internet[25]. One specific such is MMORPGs, massive multi-player online role-playing games. In MMORPGs, players exercise design technologies and tools that further their roles and play. While MMORPGs are relatively new, the role-playing games follow a long tradition of participatory fandom[16]. The wide-spread participatory behavior of MMORPG players is unlikely to be a transient phenomenon. The experience that the Internet generation has of interacting with, rather than consuming, content, could be the basis for a new business for Hollywood: films that enable users to interact directly by putting themselves (and others) into the movie. Increased quality of rendering makes such creations a real possibility in the very near future. In this paper we argue distribution using non-restrictive, or flexible, digital-rights
management could create new business for Hollywood and is in the industry’s economic interest.

1 Introduction

Once upon a time movies and games were truly different entities. In 1935, for example, the Parker Brothers game Monopoly came on the market\(^1\) and the Marx brothers’ “A Night at the Opera” opened. In the dark days of the Depression, they were both forms of entertainment, but there the resemblance ended. Monopoly was a game for the living room, with family or friends all participating. A Night at the Opera was for movie theaters; you bought a ticket, walked in, sat down, and watched the film. Aside from the pleasure of the experience, the two forms of entertainment had nothing in common.

Those distinctions are disappearing. In 1991 Brenda Laurel presciently observed that much of the activity in computer games is actually interactive storytelling [20]. The state of rendering has improved sufficiently much that online games are within five years of being able to create characters that realistically resembles the user\(^2\). The distinction between computer games and the movies will, if not evaporate, slip into not much of a distinction at all. Our interest is how this convergence will affect Hollywood, specifically with respect to digital-rights management.

The combination of the ability to interact with the content and the increased quality of rendering presents the film industry with a serious challenge to audience share. This challenge is occurring in a context in which Hollywood is already threatened by increased Internet participation\(^3\) a cell phone culture which is itself changing the meeting and dating habits of the young [21, pp. 2-3], and changing demographics (specifically flat attendance by the 12-24 age cohort and lowered attendance by the population overall). Meanwhile MMORPGs are changing audience expectations in the U.S. and even more greatly in the Asia/Pacific region (defined as the Hong Kong, Korea, Malaysia, the People’s Republic of China, Singapore, and Taiwan), with the

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\(^{1}\)Parker Brothers was offered Monopoly in 1934 but turned it down, whereupon its designer, Charles Darrow of Germantown, PA., marketed the game himself, to tremendous success. A year later, he returned to Parker Brothers, and this time they bought the game.

\(^{2}\)Or ones that are taller, thinner, and have high cheekbones!

\(^{3}\)Specifically, “People are watching less and reading fewer books, as a result of being online,” [6],.
result that users increasingly expect to be able to interact with the content that they access.

Hollywood’s reaction to audience use of digitized film has been one of control, pressing for stronger copyright laws and ironclad technological protections. In this, the recording and film industries are following a very different route than MMORPGs. In many cases MMORPGs encourage users to play with the bits: modify the game, create new entities, and otherwise digitally interact and change the developers’ content. In some instances, users have even sold content developed using tools from the game, content that might instead arguably belong to the game developers, whose tools were used to create these tools.

We believe that technology that prevents fans from playing with content by editing and modifying movies to create new content, is technology that is not in Hollywood’s long-term interest; such technology will help erode rather than develop market share. Instead the winning entertainment media will be those in which the user interacts with the media. Enabling the user to do so is in Hollywood’s economic interest. The movie industry needs to take a serious look at the models pioneered by the games industry; there are some lessons to be learned. We believe that Hollywood should favor “optimistic” digital-rights management technology. Such a stance would enable the movie industry to flourish in an environment where user-created content is increasingly grabbing audience share.

2 The Economics of Computer Games: Who Pays and Who Owns What

Computer games are almost as old as computers; Turing machines predate the first computerized tic-tac-toe game by only fifteen years\(^4\). But even fifteen years is too big a number: while the Turing machine was a theoretical construct, the tic-tac-toe game was a real working program.

Interesting computer games require speed, memory, and graphics capability. Thus the first computer videogame did not arrive until 1971; this was Magnavox’s *Odyssey*, a tennis game played on a TV screen. Two years later, Atari, founded in 1971, created the Pong arcade game and computer gaming

\(^4\)Turing machines were first described by Alan Turing in 1937; Tic-tac-toe was first programmed on the EDSAC in 1952 by A. S. Douglas.
began to take off. The development of the Apple II in 1977 with color graphics and floppy disk drive, furthered that explosion. Dropping cost, increasing speed, the PC, networking, and mobility all played a role in the growth of the computer games industry.

It is rapidly growing. In the US, the video games industry surpassed ten billion dollars in 2005[25]. Of the entire gaming population, roughly 19% are online gamers. Video-games are present in 40-50% of U.S. households and players average ten-and-a-half hours per week [11]. In the Asia/Pacific region there is essentially no console penetration; instead computer games mean online games. The online gaming market in Asia/Pacific generated $1.09 billion in subscription revenue in 2004, representing a 30% increase over 2003. Korea remains the biggest online gaming market in the region, followed by China. Two attributes fuel this rapid growth: Internet cafes open round the clock in the PRC and rapid broadband adoption in Korea. Gamers in Asia/Pacific spend between nine to fourteen hours a week on online games [14].

From a business-model perspective, computer games can be divided into three categories: those you buy, those you buy and then play on the network, usually with a subscription fee, and those you “rent,” e.g., games played purely through subscription. The first and third type of games have well-known business models; it is the second type of game, MMORPGs, that provide interesting mixes of who controls what. It is on this type of game we will concentrate in this paper.

MMORPGs have their genesis in the 1974 game Dungeons and Dragons, a non-computer fantasy role-playing game. The on-line follow on to Dungeons and Dragons was Multi-User Dungeon (MUDs) games, non-graphical computer games; these were developed in 1978. In MUDs, the players played themselves; there were no avatars, characters that assumed the role of the player.

The first MMORPG, on-line computer role-playing games in which a large number of players can interact and play against one another, came about in 1984 in the Islands of Kesmai game that CompuServe users could access at $12 an hour. As the Internet developed, so did MMORPGs. Until the Internet went public and allowed commercial use, MMORPGs were confined to such online services as AOL and CompuServe, and all players in a particular game had to subscribe to that service. In 1994 the Internet changed to permit commercial use and MMORPGs began to appear on the public network.
The face of MMORPG’s has changed dramatically in the past several years. For many years, MMORPG’s were dominated by experiences rooted in the fantasy genre. This types of gameplay lent itself to certain types of individuals and required large time investments. Games like *EverQuest* and *Lineage* were dominant forces of this era and garnered a large population of the MMORPG community. Many people in the industry started to feel that this corner of the game market was saturated due to the overall community size stagnation.

This was not true. The problem was the type of play. These games required a lot of time investment to learn the game and even more time to advance in the game. On average, players were playing these games over twenty hours a week. In order to grow the market, the style of gameplay had to change to accommodate players with less time to devote to the games. The first game to do so was *City of Heros*, which allowed players to advance relatively quickly without investing too much energy in the roleplaying aspects of the game. *City of Heros* also allowed players to jump in and out of the game as time allowed.

Most recently, a single game has changed basic assumptions that the industry thought were the limits of a MMORPG. *World of Warcraft* has successfully integrated both an easy-to-learn and easy-to-play game with the depth of a true role playing game. New players can be successful quickly in the game even while more traditional players can explore its depth. Introduced in 2004, *World of Warcraft* has grown the games market by expanding the number of players willing to play a MMORPG. Its membership is currently approximately six million players.

In the Asia/Pacific region, roughly 40% of online gamers prefer MMORPGs (the exception is Taiwan were MMORPGs are preferred by over 50% of online gamers). In the PRC, the average gamer spends over 20 hours a week playing MMORPGs while those in the other five countries of the regions spend half as much time\(^5\). It is interesting to note that recently the Chinese government has instituted limits on the amount of time players can spend continuously on online games, an indication of the popularity of the media in the PRC [2]. Internet cafes have aided in promoting such establishments as entertainment centers.

The online gaming market in Asia/Pacific has been growing at roughly 25% year over year since 2003. Last years online gaming revenue was es-

\(^5\)The PRC government has given tax breaks to promote online gaming.
estimated at roughly $1.3 billion with MMORPG accounting for 38% of the total, or $503 million [13][12]. Assuming that MMORPG maintains this level of the revenue share, we can estimate MMORPG revenue at one billion dollars by 2009. Other sources are even more optimistic [9].

There are also emerging online game markets in India, Indonesia, and Vietnam. Market research indicates that MMORPGs are popular in these emerging markets for many of the same reasons they are in Asia/Pacific [15], and, “The significance of Internet cafes in developing countries continues to be substantial as it addresses, to a certain degree, low PC penetration and ownership. The Internet cafe factor is also applicable to otherwise prohibitive broadband costs, as users can simply rely on the pay-per-use basis rather than monthly subscription packages” [15]. MMORPG is likely to continue its huge popularity — and substantial growth year after year — in all regions of Asia.

In the US the numbers are considerably different. The economic makeup of the players — and especially the economic differences between the two regions two decades ago when console gaming (but not Internet gaming) was introduced — means that console gaming is the predominant choice. Of the online gaming taking place, roughly 9% is dedicated to MMORPGs [7, p. 10].

The technology of MMORPGs is a standard client-server model. The game is on the server; players run client software on their machines that enable them to assume the role of their avatar. The gamer seeks to interact with fellow players and “level up,” increasing their power and skills. Players level up in a variety of ways: through succeeding in certain tasks, such as by slaying dragons (metaphorical and real ones in game) or defeating enemies, by acquiring new skills, and by acquiring items of value (magic cloaks and the like).

There are many reasons that MMORPG players are passionately committed to their games, including the interactive nature of the online gaming world [10, p. 3]. Another is the role that players have in creating their characters and their tools. They work to make the world their own. This connection is a two-way street: MMORPGs rely heavily on players for the success of the game and, in particular, on their creativity. Game designers rely on users to create goods of lasting value in the games [18, p. 1]. Will Wright, developer of the popular Sims games, puts it this way, “[Y]ou give the player a tool so that they can create things . . . I try to keep focused on enabling the creativity of the player,” [27].

Wright calls players “conducers” — a hybrid of consumer and producer.
The role of these conducers is critical and enabling their success is important to the future of a game. Thus Ralph Koster, former lead designer of *Ultima Online* and *Star Wars Galaxies*, argues for giving conducers even greater capabilities, “We can do what Lego did and give them [the players] the blocks” [18, p. 1].

Conducers have given rise to a new economy. People sell — and people buy — avatars and tools in an out-of-game economy [31]. In 2004, an Australian game player bought a virtual island from Project Entropia for twenty-six thousand dollars [22]. The sale of virtual gear for game characters, such as weapons and clothing is considered a fast growing business in China [26]. Bill Bishop, a chief executive for Chinese game developer Red Mushroom Studios suggests that, “unlike [the] U.S. consumers who may pay $50 or more for a game, consumers in China, where software piracy is rampant, are unwilling to pay high prices for virtual gear for game character.” As a result, companies in China have had to find different and new new sources of revenue from the game players. One such is selling virtual items, which has grown into a major market [26].

As Edward Castronova has detailed, in some cases whole businesses have emerged [3, pp. 163-164]. BlackSnow Interactive Inc. developed high-level characters from the Mythic game, *Dark Age of Camelot*. Mythic threatened to keep these characters out of the game, whereupon Blacksnow sued. This case was inconclusive, as it was thrown out of court because Blacksnow missed its court dates. Another company, Yantis Enterprises, bought and sold items from *EverQuest*. Yantis enabled players to deal with a broker rather than buying and selling from another player in the game. There is even a company that sells items for several games: Internet Gaming Entertainment Ltd. (IGE). Calling itself the “leading MMORPG Service Company,” IGE offers for purchase items from over a dozen games, including *Anarchy Online*, *City of Heroes*, *Dark Age of Camelot*, *Dungeons and Dragons*, *Ever Online*, *EverQuest*, *EverQuest 2*, *Guild Wars*, *Final Fantasy XI*, *Lineage 2*, *RF Online*, *Second Life*, *Star Wars Galaxies*, *Ultima Online*, *World of Warcraft US*, and *World of Warcraft EU*. IGE has offices in Los Angeles and Miami, and subsidiaries in Hong Kong. IGE is big business, dealing in multiple games, multiple currencies, both in game and out of game.

Selling assets can be a source of revenue for the game developer if the assets are offered as a service within the game (and another advantage for the developer is that this revenue can enable lower — or no — subscription fees). This is the model that Shanda, a Chinese publisher, is developing [8].
Otherwise, selling assets has primarily been undertaken by small businesses other than the gaming company, or by the users themselves.

Some games — *Second Life* is one such — emphatically permit an out-of-game economy to purchase in-game items [30]. "Linden Labs [creator of the virtual world Second Life] doesn’t mind having its currency bought and sold, and even grants Second Life members ownership of the intellectual property rights to whatever they create in the world,” reports the *New York Times* [30]. This out-of-game economy is part of the attraction for some players, who have gone into business based on services they provide for the game[4]. Linden estimates that just in January 2006, the out-of-game economy was about five million dollars — or $38 per *Second Life* players [4]. But while some cultures favor trading — the vast majority of Koreans, who are big game players, are an example [31] — the opinion is not universal for gamers.

From a legal standpoint, the typical situation is that a player buys the software and, in accessing it, agrees to the End User License Agreement (EULA) and Rules of Conduct (ROC) that govern the use of the software. In 2000 Sony, publisher of the popular *EverQuest*, changed the EULA for *EverQuest* prohibiting players from selling their accounts or in-game items [28]. Sony made this change for a variety of reasons, but an important one included the unhappiness of players who didn’t like the out-of-game economy affecting the in-game one. The company risked losing some players because they were dismayed by the “cheating” of players who purchased their way through the levels [10, p.p. 7-8].

While the question of whether out-of-game auctions for items developed using in-game tools represents copyright infringement is unsettled, there are, in fact, strong reasons to believe that the created works do not infringe copyright. Lewis Galoob Toys developed the tool “Game Genie,” which enabled a gamer to change up to three features of a Nintendo game (such as increasing the number of lives of their character, increasing the speed at which the character moved, or enabling the character to fly above obstacles). The tool functioned by blocking a single data byte sent by the Nintendo game cartridge to the CPU in the Nintendo Entertainment system and was inserted between the cartridge and the system. Nintendo sued, arguing that Game

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6While certainly some of the elements sold in *Second Life* simply go into “playing the game,” the sales are not a pyramid scheme; there are genuine applications to the “real” world and these generate income. For example, one of *Second Life*’s customers is, through a contractor, the Center for Disease Control, which is using the site to develop virtual clinics that can train emergency workers for setting up sites in a crisis [4].
Genie was a derivative work and thus infringed on Nintendo’s copyright. The court held otherwise. In *Lewis Galoob Toys v. Nintendo of America, Inc.* 964 F. 2nd 965 (1992), the Court ruled that because Game Genie is an enhancement and “cannot duplicate” Nintendo’s game, Game Genie was not a derivative work (and therefore not infringing of Nintendo’s copyright).

This is a ruling with interesting implications for conducers. Garlick argues that under the Galoob decision, which focused on the innovation in Game Genie, “out-of-game auctions should survive an allegation of derivative works because . . . they do not supplant demand for the original game but instead increase demand and market for the original game” [10, p. 29].

Of course, the legal issue does not need to be fully resolved in order to argue the benefit of non-restrictive digital-rights management technologies for the movie industry. There are several lessons for Hollywood from the games world:

1. Gamers create items within the game using tools provided by the game.
2. These items have value. They increase the value of the game to *all the players* and they are part of what keeps players connected to the game.
3. Within the game, the gamers “own” these items.
4. In some games, the items created in the game may be sold in an out-of-game economy.

Regardless of whether court rulings eventually result in (4) being true for the game industry, the movie industry needs to consider (1) and (2).

3 Fandom: Not Only a Computer Games Phenomena

At heart, gamers are fans. They form a “fan culture,” communicating, participating, contributing to the game they enjoy. The contributions that they make are investments, tying them ever more more tightly to the game. Gamers are just one example of ardent enthusiasts of modern media; there are many others.

There are, of course, the ardent devotees of the soaps and of Oprah, but for our purposes, what counts are participatory fans, fans who engage in
creating media that interacts with the content. This includes fan fiction, fiction based on the characters of the content, and it might include films that are either based on the content or are, in fact, pastiches of the content mixed in new ways.

Henry Jenkins, an MIT professor who has studied fan culture for several decades, has observed, “Fans respond to [the] situation of an increasingly privatized culture by applying the traditional practices of a folk culture to mass culture, treating film or television as if it offered them raw materials for telling their own stories and resources for forging their own communities,” [17, p. 6]. This participatory culture “might well [have] start[ed] with the photocopier, which quickly became the ‘people’s printing press,’ . . . [then] the VCR . . . to re-edit television footage,” [17, p. 5]. Other tools include the camcorder, the cell phone, and the digital camera.

Participatory culture includes the Trekkies, the Star Trek fans, who wear Star Trek uniforms, hold Star Trek conventions, and create fan shows by cutting and splicing old episodes of Star Trek. So well known is their devotion that they themselves were parodied on Saturday Night Live. Fans of anime, Japanese animation, serve an important role in anime culture. They help the industry by subtitling episodes for distribution. They create fan fiction and develop a community; many high schools and colleges have anime clubs that show the films for free. 

Participatory culture includes devotees of Star Wars, who have cut and pasted the film, creating spoofs and parodies, zines (small circulation, self-produced publications). Members of such participatory cultures are valuable to the content creators; they are devoted conducers who create new content whose work draws in additional viewers. Media owners take advantage of such a base; Jenkins notes that, “Media producers are consciously building into their texts opportunities for fan elaboration and collaboration — codes to be deciphered, enigmas to be solved, loose ends to be woven together, teasers and spoilers for upcoming developments,” [17, p. 9].

The level of devotion in fan culture is really quite impressive. Many fans spend hundreds of hours on fan fiction, parody, and making films for which

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7 Permission to do so is typically based on the fact that there is no admission charge. See http://demaagd.com/anime/animeclubs.html (last visited 8 March 2006), which is a site that lists Japanese anime companies willing to have their content shown free at fan clubs. The site includes whom to contact for permission for free viewings.

8 The zines included sexually-explicit stories that Lucasfilms objected to. Lucasfilms did not object to other non sexually-implicit zines, thus implicitly giving those approval.
they receive no form of compensation except admiration and connection to their “community.” Until now the dedicated fan has been able to take what is there and weave it together to create something new, and that has been its own reward. But what higher form of participatory culture is there than for the fan to weave herself, or someone she knows, into the story? That is what nonrestrictive DRM would enable such a fan to do. This has not been the approach taken by Hollywood as it releases new films on DVD.

4 The Current State of the Movies

According to the Motion Picture Association of America, box office revenue is roughly $9.5 billion, and has been stagnant at this level since 2002[24]; indeed, admissions trends are on a slight decline since 2002, from 1.64 billion tickets sold in 2002 to 1.54 billion in 2004. (Note that the scale of the decline is so small that it may not be significant). These numbers reflect the domestic U.S. market only; international markets for U.S. film products have been steadily increasing.

The economics of movie release are interesting. Movies are first released exclusively to theaters for approximately two weeks to four months; there are no video releases during this period. Approximately 26% of the studio take on a film is generated from the box office, generally in the first two weeks (often on opening weekend). Approximately another 46% is made from the sales of videos and DVDs (including to rental stores). Then approximately 28% comes the various TV distribution types [1].The next stage is premium pay channels such as HBO and Showtime. Note that exclusivity is misleading at the latter stages of the life-cycle. The movie is shown concurrently on both the premium cable channels and pay-per-view for approximately eighteen months, and channels pay based on the success of the film in the theater (but the average is six-eight million dollars per picture). Following this, distribution is network and cable TV, and then finally, syndicated TV, each with their own revenue stream returning money to the studio.

rDRM is the tool that is being sought as a way to preserve this business model. Restrictive DRM that leaves the user in the position of consumer — view, view once, view through next Thursday, view three times — but not creator can, in the presence of trusted clients, help preserve the business model described above. But by limiting what users can do with content, the movie industry may be cutting themselves out of lucrative businesses. In the
next section, we explore that issue.

5 What are the DRM implications for Hollywood?

“Videogames and Hollywood have been colliding in slow motion for two decades” is the claim [23, p. 1]; is the collision about to happen?

Five years ago a revolution began in interactive experience (i.e., game) rendering techniques. For the previous twenty-plus years all interactive hardware rendering was done with fixed function pipelines, meaning that all the rendering functionality was fixed. There were lots of different modes and switches which could be combined to create lots of interesting graphics, but in the end, there were only a finite number of combinations. Now hardware graphics is programmable.

Looking at how special effects in the motion pictures industry has evolved over this time, interactive technologies and special effects are becoming more alike than different. From the very beginning of computer graphics special effects, the software rendering packages used a programmable model. This allowed visual effect creators to have unlimited flexibility when creating their illusions. The only thing limiting their creativity was the amount of time needed to render the final image. When they started, a single image took between an hour and twenty-four hours to compute. To facilitate this programmability, it was recognized that a standard programming language that met the needs of computer rendering was needed. This language was developed by Pixar Studios (previously the computer graphics division of Industrial Light and Magic). The language is known as Renderman.

In its simplest form, Renderman is a language designed to describe the color of a pixel. Today, Renderman is still the most popular shading language for computer graphics special effects. In the film industry, special effects are created much the same way they were over twenty years ago. The tools have changed dramatically and the amount of data has grown, but the rendering techniques remain quite similar. One thing that has not changed significantly is the time it takes to render a single image: between an hour and twenty-four hours. The image complexity is drastically different though.

In games there is now quite a difference. At first, the programmability and number of program instructions was quite limited, but now the languages
are much more fully featured, coming very close to the Renderman shading language. The number of instructions for the programmability is now effectively infinite. This enables essentially an infinite number of visual effects to be rendered on modern graphics hardware.

The question is when interactive graphics and film special effects will converge. The answer is that they are likely to get a lot closer but will probably never fully converge. Nonetheless, from an image perspective, interactive graphics are becoming quite good. The images of *Fight Night Round 3* are quite close to truly realistic. Many game companies are now using the same production techniques and tools as their film counterparts. In some games, the models that were used by the film are being reused by the game.

Although the techniques are getting closer, they are likely not to merge. This is due to scale. The data used by films to render their effects are now in the several gigabytes for a single image, while interactive graphics is still limited to a few hundred megabytes. And, films still spend hours rendering while games spend only a thirtieth of a second on a single image.

In any case, we will see interactive experiences start to approach the quality of film special effects and this is very likely to move some consumers to spend more time playing games if the quality of the stories can match that of film. As mentioned earlier, we are within a few years of having MMORPGs that can produce characters that resemble the player. Indeed, of the two things are needed for this to happen in MMORPGs, one, technological capability, is already there, and the other, mass adoption, should occur quickly.

In 2005, for the first time, computer games revenue surpassed movie revenue [25]. Now this data is all types of computer games and includes hardware as well as software, but the trend is in the predictable and expected direction: participatory media.

User-created content and participatory media are large drivers of the Internet. Ten years ago, as the U.S. government pushed for the Information Superhighway, the image was of five hundred channels of television. Instead we have gone in a completely other directions: blogs, wikis, sites like de.li.cio.us, which enables users to create and share lists of favorite websites, music, books, etc. (http://de.li.cio.us), and Flickr, which enables users to share photos. We have Creative Commons (www.creativecommons.org), which has created copyright licenses that enable content owners to allow sharing of their

\footnote{Looking at *Fight Club 3*, http://www.easports.com/fightnightround3/xbox360.jsp, already has this.}
content while maintaining some control over its usage. MMORPGs enable the user as creator; indeed, its very business model relies on user creativity.

So here we have it: film industry revenues are down, game industry revenues — revenue for participatory media — are climbing and have overtaken the film industry for the first time. The MMORPG segment of the game industry allows, indeed encourages, users to interact with the content; in some cases, the consumer/producer, the conductor, is even allowed to sell in the out-of-game economy materials produced in the in-game one. Improvements in game rendering enhances the user experience and the tremendous improvements expected in the next decade as a result of Moore’s law and increased bandwidth will increase rendering capabilities. All these are likely to cause gaming to increase market share, an increase that comes at someone else’s expense. By decreasing the time available for other leisure activities, games’s technological improvement poses is a direct threat to the film industry.

Now Hollywood has diversified and is producing games, including MMORPGs, that are based on movies [23]. The film industry already enjoy economies of scale (e.g.: rendering technology, movie adaptation to game) that lays a foundation for creating immediate market share in the gaming community. And certain players (particularly Sony) are creating new business models for MMORPG that are less flexible than current models. But Hollywood has, in its back pocket as it were, a product that can be immediately transformed into a new business.

A viewer might take a copy of Casablanca, for example, and with editing aids, replace Humphrey Bogart with Ronald Reagan (the original actor slated to play Rick). Given Reagan’s subsequent roles, this could be a very interesting political commentary. Or a user, seeking to send an ambiguous message to her lover, could replace Humphrey Bogart with her boyfriend. A user might take two productions of Hamlet and intersperse them, weaving scenes from the Kenneth Branagh version with that of the Lawrence Olivier version. A user might add scenes of his own to the movie. The film would not achieve the interactivity of a computer game, but it would enable the interactive storytelling that Brenda Laurel described over a decade ago [20].

Imagine four versions of Harry Potter and the Half-Blood Prince on DVD for sale, with differently-varying capabilities to manipulate the bits:

- View only;
- Cut and paste; no other editing possible;
• Editing using the tools provided;

• The film with no digital-rights management restrictions save watermarking (so as to enable tracking). Thus all types of editing are permitted, including techniques not envisioned by the studio.

Such controls, while more complicated to implement than a restrictive digital-rights management system that only permitted viewing, are certainly technically feasible.

These different versions would be sold with different price tags, of course (or a single version with varying rights each of which can be licensed upon payment of a fee). Some users might buy several versions with different editing capabilities. A customer might view *Harry Potter and the Half-Blood Prince*, and realize that she sees her high-school English teacher in Professor McGonagles — and decides to get an editable version to put the teacher in.

Each of the versions of the film that permitted editing would come with a license similar to what exists currently for playscripts: private viewing permitted, public viewing requires permission from the content owner. In no sense could *Casablanca* be shown with General Pinochet playing the part of the German commander unless Warner Brothers, who owns *Casablanca*, agreed to such a public performance. Similarly, these more liberal licenses for manipulating the content would not affect the brand (something that Disney would care quite strongly about, for example), because there is no public viewing of the content *unless* the content owner agrees to the public performance.

The four alternative ways of using *Harry Potter and the Half-Blood Prince* provide interesting challenges in thinking about the business model. The first alternative, view only, is, of course, the current business model. Each of the other alternatives, offering viewers increasing capabilities for participation in the movies, would be priced accordingly higher. They would need to have some form of DRM in order to track content and prevent leakage; such technology is already familiar to Hollywood.

This is a shift in the business model: loosen control of the bits and develop a new market: one in which users put themselves in as directors and change the action, adding themselves in as a character, replacing Humphrey Bogart or Renee Witherspoon with themselves (or a character of their creation), becoming a participant in a movie that was never written to include them. Even when implemented correctly, the DRM would allow some leakage of
content — just as there is now — but the non-restrictive DRM model would not change ownership rights or ability to go into ancillary markets (e.g., toys, online games, etc.). The movie industry’s rights, and more importantly, industry’s business of secondary distribution, would not change. What would change is the addition of a new business: editable films with non-restrictive DRM technologies that would enable editing and creative content addition by users.

Enabling users to play with the bits and modify movies understandably makes Hollywood nervous. Perhaps the industry could start with an experiment, not necessarily one of the prime new films such as something from the *Harry Potter* series, but an older film, maybe one with a cult following, such as a Marx Brothers movie. In some sense, we have already done that experiment. The efforts by Trekkies, and by Star Wars aficionados, are efforts in this direction. But here we are suggesting a full-fledged experiment with Hollywood owning the technology and reaping the profits: release the film on DVD with a variety of editing licenses, watermarking to enable tracking and prevent release of unauthorized copies, and see what happens. Is there a business there? The growing MMORPG audience share indicates that Hollywood might be quite surprised to find it has a new business waiting for exploitation.

These proposed business models would be a far cry from the movie business of 2006, but the movie business has seen radical change before. Hollywood fought VCRs very hard [19], but after the Sony case\(^\text{10}\), the distribution model for movies changed, and now fully three-quarters of movie revenues come from video distribution. (Note: this is new audience share, rather than share as a result of attendance shifting from theaters to video rental.) We would not expect that in 2016 we would have the same film distribution model as we do now. As Justice Louis Brandeis observed (on a very different issue), “time works changes, brings into existence new conditions and purposes.”\(^\text{11}\) Digitization has worked changes in the movies. The digitization enables for film what has always been possible for art, literature, and music: the riffs and variations that create new art, new literature, and new music.

Strength in the MMORPG market is proportional to where participatory media as a social phenomenon is greatest - China, for instance. It is also true that in the Asia/Pacific market, Korea and the PRC specifically, is

\(^{10}\text{Sony Corp. v. Universal City Studios, }446\text{ U.S. 417.}\)

\(^{11}\text{Olmstead v. United States, }277\text{ U.S. 438 (1928), p. 473.}\)
exactly where there is the least tolerance by restrictive licensing terms on who owns the game assets. Serving and capturing the leading position in this target market would require a different business model than the traditional Hollywood fare. It is also a huge business opportunity for someone, if not Hollywood, then maybe Bollywood.

Will Hollywood jump on participatory film-making as a new business opportunity? A model of loosely-applied digital-rights management would, by definition, mean losing control; we believe that it is a trade worth making for the gain in audience and consumption. We believe releasing films under non-restrictive DRM that would enable audience editing would be a major win for the user, for technology developers, and for content producers. Using such technology would mean a different business model than the Hollywood of today has, but the fact is that Hollywood of 2016 is unlikely to be the Hollywood of today. A model of a variety of user-friendly releases of the same film that would enable manipulating the content would put Hollywood in a position to compete with computer games and other forms of interactive media, and could leave the movie industry in a very competitive place indeed.

References


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