

The Impact of Digitization on
Business Models in Copyright-Driven Industries:
A Review of the Economic Issues

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I. INTRODUCTION

Copyright is a form of intellectual property right that protects an author’s manifestation of an original work. According to the U.S. Copyright Office, “Copyright protects ‘original works of authorship’ that are fixed in a tangible form of expression.”¹ These manifestations ultimately impact all aspects of the economy. Nevertheless, the majority of copyrighted material is produced in a handful of industries—art, music, film, books, publications, software, architecture plans, and so on.

Simply put, the purpose of copyright is to create a legal mechanism that allows the producers of creative works to collect revenues from those who enjoy the benefits of creative production (usually consumers). This legal protection is intended to solve the “public good” problem associated with copyrighted works—*i.e.*, once such works have been created, the cost of creating additional copies is *de minimis* and because it is very difficult to exclude anyone from consuming these very low cost (if not free) copies, the producer has little incentive to create the original works.²

Economists have identified two standard solutions to public good problems like the one described above: (i) either the government produces the socially desirable amount of the public good, or (ii) legal property rights are created to eliminate free riding by consumers, thus allowing producers to obtain adequate compensation for their work through market transactions. In the social solution, the government must somehow determine the optimal

¹ United States Copyright Office. “Copyright Basics,” August 2010. Found at: <http://www.copyright.gov/circs/circ01.pdf>. pp. 3-4. It continues: “Copyrightable works include the following categories: 1 literary works, 2 musical works, including any accompanying words, 3 dramatic works, including any accompanying music, 4 pantomimes and choreographic works, 5 pictorial, graphic, and sculptural works, 6 motion pictures and other audiovisual works, 7 sound recordings, 8 architectural works.” These categories should be viewed broadly. For example, computer programs and most “compilations” may be registered as “literary works”; maps and architectural plans may be registered as “pictorial, graphic, and sculptural works.”

² Of course, there are also economic costs associated with copyright. These costs include transactions costs associated with defining and enforcing rights and the possibility of more limited diffusion of the copyrighted work, despite the fact that it costs relatively little to produce additional copies. For further discussion of the economic costs and benefits of copyright, see Landes, William and Richard Posner. “An Economic Analysis of Copyright Law,” *Journal of Legal Studies*. June 1989.

amount of the public good, which creates another problem – how does the government get citizens to honestly report the level of public good that they want and how much they are willing to pay? In the market solution, copyright protection is granted to eliminate the availability of unauthorized copies, allowing producers to reap the profits that provide them with incentives to produce.

By establishing legal rights to the intellectual content of these works, copyright solves the market failures associated with these public goods. However, this approach works only if producers are able to capture adequate compensation to produce at the socially desirable level. If a copyright scheme fails to create enforceable ownership rights, producers of intellectual works will not receive adequate compensation for their initial investment and will therefore face reduced production incentives. This is the situation that digital distribution threatens to create (or may have created already in some industries). Unless addressed through novel business models, the resultant market failure could require legal innovation (perhaps in the form of compulsory blanket licenses) to ensure that producers have adequate incentive to create original works.

Our paper focuses on three industries, music, film and books, where the industry structure evolved under a long-term regime of robust copyright protection. However, in all three of these industries, digitization and the internet have led to a precipitous decline in distribution costs, as well as an enormous increase in piracy that has likely diminished the economic rewards afforded by copyright.³ These radical changes have forced

³ A 2011 report estimated that 23.76% of internet bandwidth was being used for copyright-infringing traffic including movies, tv, music, and software (report excludes pornography). In the U.S., 17.53% of traffic was copyright infringing. Further analysis showed that Bittorrent is the most common P2P protocol and that of the 10,000 most popular pieces, 63.7% was infringing content, with 35.2% of that 10,000 being film. See pp. 2-4 & 10 of Envisional Ltd. “Technical report: An Estimate of Infringing Use of the Internet,” January 2011. Found at: http://documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf.

However, it is important to note that a relatively small segment of the population receives its content illegally. A 2010 study indicated that the rate of users who pirate content on P2P networks in the US dropped to 9% from 16% in 2007. See Mick, Jason. “With Fall of LimeWire, U.S. P2P Piracy Rates Plunge.” March 24, 2011. Found at:

<http://www.dailytech.com/With+Fall+of+LimeWire+US+P2P+Piracy+Rates+Plunge/article21214.htm>.

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fundamental shifts in the supply chain and the underlying business models of industry participants. New distribution entities have emerged, traditional vertically integrated intermediaries have suffered, and creative producers of copyrighted works have entered a brave new world. Some producers may benefit from closer connections to ultimate customers but others are under economic threat because they cannot capture the economic rewards from their creative work. Copyright law can theoretically create property rights but whether digitization and the internet have eliminated the ability of producers to receive adequate compensation for their work under the current system of rights is now a fundamental social and economic question.

This paper addresses that question by providing an economic summary of how the markets for music, film and books have changed. Sections II, III, and IV consider the impact of digitization on the music, film, and book publishing industries, respectively. Within each section, the paper first describes the industry's traditional supply chain. Second, it addresses the impact of digitization on this traditional supply chain, particularly with respect to distribution of copyrighted material to customers. Third, it considers the new business models for generating profits from copyrighted material, paying particular attention to companies such as Apple and Amazon that currently play a leading role in two or even three of the sectors at issue. Fourth, it discusses how digitization is affecting traditional intermediaries (*i.e.*, record labels, movie studios, and publishing houses). Fifth, it assesses the impact of digitization on the producers of copyrighted works, as distinct from the traditional intermediaries that have dominated each industry. Section V, our conclusion, presents research questions that might be pursued to obtain a better understanding of how these different industries will evolve over time and whether the current copyright system can elicit the socially desirable level of creative works in a digital world.

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Worldwide, OECD estimates that in the number of simultaneous users on P2P networks was 10 million in October 2004. Of these, 50% of users were in the U.S., 10% in Germany, and another 8% in Canada and France. *See* Vickery, Graham and Sacha Wunsch-Vincent. "Digital Broadband Content: Music," OECD. December 13, 2005. (Vickery *et al.* (2005))

II. MUSIC INDUSTRY

A. TRADITIONAL SUPPLY CHAIN

The traditional music industry supply chain prior to digitization and the internet was largely controlled by the major record companies, of which there are currently three worldwide: Universal Music Group, Sony Music Entertainment, and Warner Music Group. These dominant companies, along with numerous, smaller labels, played the role of talent scouts, record producers, and music promoters and distributors.⁴

The record companies were able to play the role of talent scout because they had the scale necessary to support the costly effort of dispatching scouts to live venues across the country. Until very recently, it was not easy for individuals interested in music to identify interesting new artists on their own.

Once artists were signed to recording contracts, the record companies would help them produce albums by identifying and licensing songs to record⁵ and by paying all recording costs, including fees for studio time, backup musicians, post-production mixing facilities, and producers. Record companies were needed to defray production costs because high-quality multi-track recording equipment was beyond the reach of most artists until relatively recently.

Once the music was produced and organized into an album, including single song albums or ‘singles,’ the record company physically produced the music product. The traditional physical music products were vinyl records, cassette tapes, and CDs (now the most popular physical medium for music products). The physical music products were then distributed through retail distribution channels including record stores, other retail

⁴ For additional detail on the traditional music industry value chain, see Knopper, Steve. *Appetite for Self-Destruction – The Spectacular Crash of the Recording Industry in the Digital Age*. Free Press. 2009 (Knopper (2009)); and Vickery *et al.* (2005).

⁵ As discussed in greater detail below, the right to the song is held by the song’s composer. Although the right to the song is separate from the right to the performance of the song, it may be the case that the person recording the music is also the composer of the song.

establishments, and, more recently, internet retailers such as Amazon. The record companies also had a primary role in promoting the album to consumers through a variety of means including radio, music videos, branding tie-ins, print advertisement, in-store positioning, and concerts.

In addition to being heavily involved in every stage of the traditional music industry value chain (except retail), record companies reaped the lion's share of profits from sales of recorded music. Several studies have examined the allocation of revenues from CD sales during the early 2000s and have produced fairly consistent figures.⁶ In general, they indicate that for every sale of an (undiscounted) \$18 CD, the retailer would receive about \$7 and the record label would receive the remaining \$11. In theory, the recording artist might receive a 20% royalty on the record label's \$11 share of revenues. In 90% of cases, however, the artist received nothing at all because the record company deducted from this amount all of the artist's recording costs, about half of the promotional costs, and various other charges.⁷

B. THE IMPACT OF DIGITIZATION

Digitization and internet distribution have profoundly changed the underlying economic relationships in the music industry. Each of the three main functions of record companies—finding talent, recording music, and promoting/distributing songs—has been affected by the new technology:

- Finding talent. With the advent of internet distribution of digital music files, combined with low production costs (see next item), it is now substantially easier and less costly to seek out new talent. Although record companies still create value by scouting new talent and collecting a talented group of artists, they are not the only entities to do so. Crowd-sourced curating websites such as FreshScouts and

⁶ See, e.g., Slater, Derek, Meg Smith, Derek Bambauer, Urs Gasser, & John Palfrey "Content and Control: Assessing the Impact of Policy Choices on Potential Online Business Models in the Music and Film Industries," Berkman Center for Internet and Society at Harvard Law School January 7, 2005, (Slater *et al.* (2005)) at p. AI-4, Vickery *et al.* (2005), and Knopper (2009).

⁷ Note that for each CD sale, the music publisher traditionally received about \$0.76, which it typically split with the song's composer.

RecordScout exist to assist individual listeners in discovering new artists, sometimes before they have been signed by a recording studio.

- Recording music. The price of high quality digital recording and mixing equipment has come down dramatically in recent years. This is due to a drop in the cost of both high-quality studio equipment and of manufacturing digital content. The drop in the expense of studio equipment is largely an expression of Moore’s Law. Once music is in a digital format, the cost of computer processing determines the physical cost of music production. As the price of computer-processing has dropped, so has the price of creating high-quality recordings and performing post-production editing of music. The combination of more affordable equipment with relatively inexpensive editing software allows for much cheaper recording. Today, even many home computers ship with pre-installed software that allows digital editing of music more advanced than that permitted by studio equipment thirty years ago. For instance, Apple pre-installs “Garage Band” software on all of its personal computers. This software allows a home user to record and edit his own music and then upload it on websites such as YouTube, MySpace, or Facebook.⁸
- Promotion, physical production, and distribution. The key change in this stage of the value chain is that digitization has made production and distribution of recorded music dramatically cheaper than it had been traditionally. At the same time, record companies, as well as the traditional wholesalers and retailers they had long-standing relationships with, have lost much of their control over music distribution.⁹ While record companies retain a significant role in promoting and marketing music, the rise of the internet has enabled other entities to contribute to marketing and promotion as well.

The changing economics of finding talent and recording music can be expected to have an important impact on the music industry. If the reduced talent search and recording costs were the only changes in the industry, there would still likely be more independent or smaller labels emerging¹⁰ as has been the case over the last decade.¹¹ Musicians would likely have more record labels to choose from and, as a result, could be in a better

⁸ See “Garage Band,” Apple Inc. Found at: <http://www.apple.com/ilife/garageband/>.

⁹ Vickery *et al.* (2005).

¹⁰ Lower talent search and production costs would imply lower barriers to entry for record labels, which would likely lead to greater entry. With more record labels, artists would have more opportunity to find a label and negotiate contract terms.

¹¹ Waldfogel, Joel. “Bye Bye Ms. American Pie? The Supply of New Music Since Napster,” NBER Working Paper 16882. March 2011.

position when negotiating contracts to record and distribute their music.¹² However, it is the change that digitization has brought to the production and distribution of music that is most radically altering the underlying business model of the music industry, as discussed in detail below.

C. WHAT ARE THE NEW BUSINESS MODELS FOR GENERATING PROFITS FROM MUSIC SALES?

Digitization has revolutionized the traditional music industry distribution network in at least three important ways. First, the ability to distribute digital music files over the internet has significantly reduced the costs associated with manufacturing and distributing physical CDs.¹³ Second, the wide availability of illegal “free” music on the internet has forced music sellers to develop a model that makes it more attractive for at least some consumers to listen to legally copyrighted music recordings rather than to pirated substitutes. Such a model may involve using low cost (or even free) music to drive sales of other, higher margin goods. Third, the ability to download individual songs has greatly diminished the importance of the traditional, lucrative industry product, the full-length album.¹⁴

Below, we describe six approaches that have been used to generate profits from music in the face of these constraints: (i) digital music stores; (ii) advertising and/or subscription-based music services; (iii) sales of complementary products; (iv) sales of artist-specific complementary products; (v) crowd-based funding and (vi) payment through a compulsory blanket license.

¹² See Vickery *et al.* (2005).

¹³ Even prior to internet distribution of digital music files, the traditional record industry had been profoundly impacted by online sales of physical CDs, which eventually resulted in the demise of a large number of traditional brick-and-mortar record stores.

¹⁴ Elberse, Anita. “Bye-Bye Bundles: The Unbundling of Music in Digital Channels,” *The Journal of Marketing*. May 2010. As discussed by Elberse, the effect of the decline of the album likely varies depending on other quality measures of music sold.

i. Digital Music Store (DMS)

In this model, musicians and record companies allow internet music stores like Amazon.com and Apple's iTunes to sell their works at online outlets. Customers search for music at internet storefronts and download the stores' products.¹⁵ The very ease and economy of distributing digital files online that enables these stores to work, however, also presents a challenge for the DMS model; given the increased ease of piracy in the digital world, DMSs must find ways to convince customers to purchase music that they might otherwise obtain for little or nothing.

DMSs, along with other music industry groups interested in curbing piracy, can do so either by increasing the costs of downloading pirated material (as discussed in detail in Section IID below) or by ensuring that their storefronts add value to consumers' experience of purchasing music. In pursuing the latter strategy, DMSs often take on marketing and promotion functions, advising consumers about new artists or popular songs. Amazon's suggestion features provide recommendations based on past purchases, as well as a list of songs that other consumers who bought a given song also downloaded. iTunes alerts customers when artists they have previously purchased release new music. Stores work to ensure that they offer user-friendly and reliable music downloads. The music industry also has a variety of options for discouraging piracy, discussed further below.

ii. Advertising and/or Subscription Based Music Services

One new model that has emerged replaces sales of music with free online distribution funded by advertising. For instance, on Pandora, listeners specify what artists or songs they enjoy listening to, and similar music is then streamed to them over the internet. While listeners are not able to access a full album from an artist, the site serves as a customized radio service. The music is interrupted occasionally by commercials and there are banner ads on the website. Spotify, another popular service, does allow listeners to stream full discographies as well as playlists and singles from its library with occasional

¹⁵ As discussed further below, Amazon and Apple have also become major players in the distribution of digital movies and books through their online stores.

commercial interruptions. Both services also offer a premium pay version, which removes commercials and allows the customer to listen to music uninterrupted for hours.¹⁶

These services and others allow for the targeted marketing of new music. Music services can use a listener's specified music preferences to incorporate new, similar music into customer "playlists" at low cost. By introducing new music to consumers who are most likely to be interested in it, this model may also lower promotion and marketing costs. While extremely popular with listeners, both Pandora and Spotify appear to be generating large losses at the present time. This is because the fees that each service pays to license music far exceed the revenue that it earns through subscriptions and/or advertising.¹⁷ It remains to be seen whether services using the advertising and/or subscription-based business model can operate profitably.

iii. Sales of Complementary Products

This business model attempts to profit from the wide availability of low-cost digital music by selling a complementary product that is not subject to the economic challenges of digitization and internet distribution. Currently, Apple has employed this model with the greatest success, promoting online music sales as a way to market its iPod, and vice versa.

As discussed in detail by Steve Knopper in his book *Appetite for Self Destruction*, Apple initially entered the music business with the release of its iTunes music software in

¹⁶ Other ad-supported services include Grooveshark (http://latimesblogs.latimes.com/music_blog/2012/03/grooveshark-ads-monetization.html), Songza (<http://www.pcmag.com/article2/0,2817,2402283,00.asp>), and Slacker (<http://www.pcmag.com/article2/0,2817,2340016,00.asp>). Other examples of subscription services include Rhapsody (<http://www.rhapsody.com/what-is-rhapsody/what-is-rhapsody.html>), Last.fm (<http://www.last.fm/subscribe>), and Rdio (<http://www.rdio.com/pricing/>), many of which also include free listening options as well.

¹⁷ See e.g. Dillet, Romain "Pandora's Q2 2013: \$101.3M in Revenue, 54.9 Active Users, And A Net Loss Of \$5.4M" August 29, 2012, found at <http://techcrunch.com/2012/08/29/pandoras-q2-2013-101-3m-in-revenue-54-9m-active-users-and-a-net-loss-of-5-4m/> Also see e.g., Zetlin, Minda "Can Spotify Stem Its Losses" October 9, 2012 found at <http://www.inc.com/minda-zetlin/can-spotify-stem-its-losses.html>.

2001.¹⁸ Although this software allowed Mac users to rip music from physical CDs and organize and play that music on their computers, it was not linked to an online music store. Later that year, Apple released the first iPod, a small device that allowed users to take their iTunes library with them. Sales of the first generation iPod were strong, but the product was not the enormous success that it is today. This is because users still had to buy expensive CDs in addition to an expensive player to access the music.¹⁹

Similar software and hardware were available to PC users. Thus, as Knopper points out, Apple's major innovation was to provide consumers with cheap digitally distributed music. In the two-years following the release of iTunes and the iPod, Apple began to negotiate with the record labels to distribute music through the iTunes store at a price of \$0.99 per song. The labels would receive \$0.67 of that price to divide between artists, publishers, and themselves; while Apple would receive the remaining \$0.32.²⁰ The \$0.99 price point represented a major loss for companies accustomed to earning \$18 for a physical CD, especially considering consumers' tendencies to favor downloaded singles over full-length albums. But the record labels decided going with Apple was better than fighting pirates.²¹ Furthermore, they felt that in the long-run new entrants into the market would allow them to renegotiate a more profitable deal.²²

In April 2003 Apple opened the iTunes music store with 200,000 songs, many of which were from major artists.²³ Within a few years, Apple had 70% of the online market.²⁴ Moreover, Apple was able to realize huge profits as consumers flocked not just to iTunes but also to iPods. Apple could sell the devices for upwards of \$300 and not share any of that profit with the record labels. Apple changed the music industry with its easy online

¹⁸ Knopper (2009).

¹⁹ *Ibid*, p. 171.

²⁰ *Ibid*, p. 172.

²¹ *Ibid*, p. 172.

²² *Ibid*, pp. 175-176.

²³ *Ibid*, p. 177.

²⁴ *Ibid*, p. 179.

distribution store and low single-song pricing, and in doing so, made a great deal of money by selling a popular product that depends on both innovations.

iv. Sales of Artist-Specific Complementary Products

In this model, recorded music is viewed as a low margin product that can be used to drive the sales of other more lucrative products associated with an artist. This model is being used by the record labels, which are increasingly requiring artists to sign 360 (or full rights) deals. Under such deals, record labels pay considerable amounts up front (for marketing, for example) in exchange for a percentage of artists' revenue from merchandising, concerts, and other associated goods whose profits traditionally went exclusively to the recording artist.²⁵

In November 2008, former Warner Music Group CEO Edgar Bronfman announced that his label now requires all new artists to sign 360 deals and that about a third of his company's signed artists are under those contracts. In defending these deals, Bronfman noted that it did not make sense for record labels to pour money into artist development when CD sales, their primary source of revenue, continue to decline. Bronfman also said that 360 deals give labels the ability to give away music for promotional purposes to spur event and merchandise sales.²⁶

Although the 360 model has not launched many big stars, there are a few exceptions, including the world's biggest pop star, Lady Gaga. According to a recent Wall Street Journal article, Universal Interscope Records has a 360 deal with Lady Gaga, under which it collects a portion of her revenues from each concert performance, as well as from her appearances on behalf of Polaroid, Estée Lauder's MAC and other corporate partners. While Lady Gaga receives relatively less money on tour, Interscope arguably invests more heavily in her marketing than it would have under a traditional arrangement.

²⁵ Knopper (2009).

²⁶ Arrington, Michael. "'360' Music Deals Become Mandatory As Labels Prepare For Free Music," November 8, 2008. Found at: <http://techcrunch.com/2008/11/08/360-music-deals-become-mandatory-as-labels-prepare-for-free-music/>.

As noted by Gaga’s manager: “Would she be in the position to play in front of 20,000 people a night if the record company had not put up the marketing dollars?”²⁷

It is worth noting that firms outside the traditional record industry have also been successful in offering 360 deals to artists. For example, in 2007, Madonna declined the option to re-sign with Warner Music, her label of 25 years. Instead, she accepted a \$120 million agreement with Live Nation (a live entertainment company) that included sharing revenue for music sales, performances, merchandise, and the rights to her name.²⁸ The rap artist Jay-Z signed a similar deal with Live Nation a year later.²⁹

v. Voluntary Contributions/Crowd-Sourced Funding

In the absence of new business models for generating revenues from recorded music, artists may choose to rely on voluntary contributions from people who download their music.³⁰ This approach was famously – and successfully – tried by Radiohead in 2007.³¹ While this so-called tip jar model has faded in popularity, other crowd funding approaches have become more prominent. For example, Kickstarter lets people with an idea or projects ask other people to contribute toward realizing it. One key difference between the Kickstarter approach and the tip jar model is that there is no guarantee that people that post projects on Kickstarter will deliver on their projects, use the money to implement their projects, or that the completed projects will meet backers expectations.³²

²⁷ Jurgensen, John. “The Lessons of Lady Gaga,” *The Wall Street Journal*. January 29, 2010. Available at:

<http://online.wsj.com/article/SB10001424052748704094304575029621644867154.html>.

²⁸ Knopper (2009).

²⁹ *Ibid.*

³⁰ Helman, Lital. “Pass the Hat: Voluntary Payment as a Complementary Model for Music Copyright,” Working Paper Series – SSRN. August 26, 2010. See also Ilett, Dan. “The Stock Market for Songwriters,” *The Telegraph*. January 26, 2008.

³¹ “Radiohead’s Genius?: Making Music Downloading Pay,” *NYTimes.com*. November 27, 2007. In the case of Radiohead, 38% of downloaders paid something, averaging across all downloads \$2.26 per copy.

³² Chen, Perry; Yancey Strickler; Charles Adler. “Accountability on Kickstarter,” *Kickstarter Blog* September 4, 2012, found at: <http://www.kickstarter.com/blog/accountability-on-kickstarter>

Given these incentive issues, it is unlikely that crowd sourced funding can play more than a supporting role in funding musicians in the digital era.

vi. Compulsory Blanket License

In this model, as in the crowd-sourced funding model, widespread personal copying is accepted as inevitable. Creators of music are instead compensated through a levy or compulsory blanket license, possibly on equipment and devices used to copy and play music or on internet connections.³³ This model is currently used in Finland.³⁴ In the United States, Congress passed the Audio Home Recording Act (AHRA) in 1992 to levy compulsory blanket royalties on the manufacture and import of digital audio or analog recording devices.³⁵ Since AHRA does not cover personal computers, however, it is more or less irrelevant today. As with other compulsory blanket licensing regimes, the royalties collected could be distributed on the basis of relative volume of copyrighted works.³⁶ It is notable that schemes to levy fees on devices mean that consumers would be charged fairly equally, rather than being charged directly based on their level of music consumption.

D. HOW WILL CHANGES ARISING FROM DIGITIZATION IMPACT RECORD COMPANIES

Throughout the digital era, a chief concern of the record labels has been the impact of music piracy on their sales. However, while it is clear that record company sales have

³³ Oksanen, Ville and Mikko Valimaki. "Copyright Levies as an Alternative Compensation Method for Recording Artists and Technological Development," *Review of Economic Research on Copyright Issues*. 2005.

³⁴ Vilanka, Olli. "Rough Justice or Zero Tolerance? - Reassessing the Nature of Copyright in Light of Collective Licensing (Part I)," 2010. Found at: <https://helda.helsinki.fi/bitstream/handle/10227/661/vilanka.pdf?sequence=3>.

³⁵ "Music Piracy and the Audio Home Recording Act," *Duke L. & Tech. Rev.* 0023. 2002. Found at: <http://www.law.duke.edu/journals/dltr/articles/2002dltr0023.html>.

³⁶ McKay, Patrick. "Ending the Power to Say No: The Case for Extending Compulsory Licensing to Cover Digital Music Reproduction and Distribution Rights," September 2010. Found at: <http://ssrn.com/abstract=1692336>. See, also, Oksanen, Ville and Mikko Valimaki. "Copyright Levies as an Alternative Compensation Method for Recording Artists and Technological Development," *Review of Economic Research on Copyright Issues*. 2005.

declined in the recent past, there is considerable controversy over whether music piracy has caused these declines.³⁷ Some researchers find sales declines caused by changes in the industry other than piracy.³⁸ Other researchers see a clear link between file-sharing and declining industry revenue,³⁹ but there is also evidence that the decrease in industry revenues may be offset by an improvement in consumer welfare on the order of more than 2-to-1.⁴⁰ Finally, others find a positive relationship between levels of illegal and legal music downloads.⁴¹

There are a handful of potential methods for preventing piracy, including legal action and DRM. Since the rise of Napster, the record industry has repeatedly sued various peer-to-peer (P2P) file sharing websites in order to shut them down. The Recording Industry Association of America (RIAA) also sued or threatened to sue 30,000 individuals for copyright infringement between 2003 and 2008. Moreover, the RIAA has also tried to encourage internet service providers (ISPs) to help enforce copyright protections by cutting off internet access for consumers who pirate music. At least four countries,

³⁷ Koh, Byungwan; B.P.S. Murthi and Srinivasan Raghunathan. "Shift in Demand for Music: Causal Effect of Online Music Piracy and Digital Music on Album Sales," Management Information Systems Research Center. November 2010.

"Our results show that the availability of iTunes like legal channels for digital music has blunted the effect of online music piracy on physical album sales, and in the presence of those legal channels for digital music, digital music, not online music piracy, substitutes for physical album sales."

³⁸ Oberholzer, Felix and Koleman Strumpf. "The Effect of File Sharing on Record Sales An Empirical Analysis," March 2004. "Downloads have an effect on sales which is statistically indistinguishable from zero, despite rather precise estimates."

³⁹ Liebowitz, Stan. "File-Sharing: Creative Destruction or Just Plain Destructions?" February 2006. "Explanations, other than file-sharing, for the recent decline in record sales seem to have little or no support." Zentner, Alejandro. "File Sharing and International Sales of Copyrighted Music: An Empirical Analysis with a Panel of Countries," Topics in Economic Analysis. 2005.

⁴⁰ Rob, Rafael and Joel Waldfogel. "Piracy on the High C's: Music Downloading, Sales Displacement, and Social Welfare in a Sample of College Students," September 30, 2004. "Our valuation data allow us to measure the effects of downloading on welfare as well as expenditure in a subsample of Penn undergraduates, and we find that downloading reduces their per capita expenditure (on hit albums released 1999-2003) from \$126 to \$100 but raised per capita consumer welfare by \$70."

⁴¹ Chi, Wendy. "Does File Sharing Crowd Out Copyrighted Goods? Evidence from the Music Recording Industry," Johns Hopkins University. November 12, 2008.

including France, Britain, South Korea, and Taiwan, have passed laws to terminate service to customers who engage in piracy.⁴²

In contrast, the DRM approach relies on a technological fix to prevent or complicate unauthorized copying. Such an approach adds costs to the supply chain by requiring software and possibly hardware that can manage the DRMs. As noted previously, the main users of DRM today are services like Spotify and Pandora, which rely on this approach to prevent customers from downloading the music that they stream.⁴³

Even with aggressive legal enforcement and DRMs, the traditional record industry, including music distributors and bricks and mortar retailers, appears to have lost control of the distribution business to industry outsiders such as Apple, as discussed in detail above. Thus, a key question for the record industry is whether it can return to profitability after having lost much of its traditional distribution function. As the number of new players in the music distribution business increases, will the record labels be able to reassert their dominance in the entire music supply chain? Or, alternatively, are the revenues available from sales of recorded music alone or from 360 deals sufficient to support the record companies' non-distribution functions? These are among the most significant research questions for the traditional music industry.

E. HOW WILL CHANGES IMPACT ARTISTS IN THE MUSIC INDUSTRY?

In order to address how changes in distribution will impact the artists in the music industry, it is necessary to consider which of the new business models discussed above are likely to emerge as dominant in the new music industry. As noted above, recording artists saw only a small share of revenue from their music sales under the traditional industry framework; most of their earnings came from concerts and merchandising. Thus,

⁴² For further discussion on these attempts at legal enforcement, see McKay, Patrick. "Ending the Power to Say No: The Case for Extending Compulsory Licensing to Cover Digital Music Reproduction and Distribution Rights." September 2010 (McKay (2010)). Found at: <http://ssrn.com/abstract=1692336>.

⁴³ For a longer discussion on DRMs, see McKay (2010).

as at least one prior study has noted, as long as these artists can continue to rely on revenues from ticket sales and merchandise, the quantity of music produced by these artists may not change significantly.⁴⁴

However, the kinds of artists that are able to obtain contracts with record companies may change. For example, as discussed above, the record labels appear to be shifting to a 360 model in which they make a significant upfront marketing investment in return for a share of revenue from all of the artists' activities, including those that were outside the scope of the traditional recording contract. Under such a model, record companies will have a strong incentive to focus on artist/performers with the ability to sell concert tickets, as well as the potential to receive fees from ancillary activities such as endorsements.

On the other hand, the increased use of compulsory blanket licenses in the music industry could affect the relative earnings of different types of artists in a different way. For example, one analysis suggests that with traditional intermediaries capturing less revenue, record companies will engage in fewer promotional activities, which in turn will lead to an erosion of the power of superstars.⁴⁵ With stars' power on the wane, a larger and more diverse set of artists may benefit. At least some analysts believe that the balance will favor the artists (and consumers).⁴⁶

III. FILM INDUSTRY

A. TRADITIONAL SUPPLY-CHAIN

The motion picture industry can be divided into four stages: (i) production/financing; (ii) distribution/marketing; (iii) exhibition in movie theaters; and (iv) post-theatrical release. Different entities and individuals participate in each of these four stages. For example, in

⁴⁴ Slater *et al.* (2005) at p. AV-8.

⁴⁵ Alcalá, Francisco; Miguel Gonzalez-Maestre. "Copying, Superstars, and Artistic Creation," *Information Economics and Policy*. 2010.

⁴⁶ Graham, Gary; Bernard Burnes; Gerard Lewis; and Janet Langer. "The transformation of the music industry supply chain: A major label perspective," *International Journal of Operations & Production Management*. June 26, 2005.

the United States, the big six studios are vertically integrated into almost every stage of the supply chain.⁴⁷ Outside the United States, the studio system is augmented by public financing of movie production. At the same time, there are a large number of independent entities, including independent producers and independent distributors that compete in only a single stage of the chain. Below, we describe each stage of the traditional movie industry supply chain in greater detail.

i. Production/Financing

The production of a feature film often begins with the acquisition of a draft screenplay by an independent production company or a group of people hired by one of the major studios.⁴⁸ In developing the film based on that screenplay, those producers must coordinate the activities of actors, writers, directors, and other contributors. In some countries, all of those contributors will have a share in the copyright granted for the completed film. In the U.S., however, the producer typically acquires broad rights from all of the film's contributors and is the sole owner of the copyright for the completed film.⁴⁹ Because the development of a film is expensive, independent producers that are not already employed by a major studio will generally contract with a major studio to obtain funds. The terms of such contracts usually require independent producers to cede creative control and provide the studio with an exclusive license to distribute the film.⁵⁰

⁴⁷ Today's "big six" studios are 20th Century Fox, Warner Brothers, Paramount, Columbia, Universal and Walt Disney Studios. The 1948 decision in *U.S. v. Paramount Pictures Inc.* barred studios from owning movie theaters. See Douglas Opinion in *United States v. Paramount Pictures, Inc.*, 334 U.S.D. 131 (1948).

⁴⁸ Eliashberg, Jehoshua; Anita Elberse; and Mark A.A.M. Leenders. "The Motion Picture Industry: Critical Issues in Practice, Current Research, and New Research Directions," *Marketing Science*. 2006. As discussed by Eliashberg, *et al.*, producers that are affiliated with a studio often find it easier to obtain financing.

⁴⁹ See Slater *et al.* (2005). As discussed by Slater, *et al.*, individual contributors typically receive a fixed amount of money, agreed upon at the time of the contract, for participating in the venture and surrendering their copyright interests. A few crucial players such as the lead actors and perhaps the lead screenwriter may also obtain backend participation agreements which entitle them to a share of the net profits of the film.

⁵⁰ Alternatively, an independent producer may try to obtain financing from an independent financier, private equity investors, or an external funding body. However, as discussed in detail by Epstein, recent changes in the industry have made such financing more difficult to obtain. Indies must thus consider new and creative ways to get their pictures funded, as discussed in detail in Section E.

ii. Distribution/Marketing

Once the film has been completed, it must be distributed to consumers. The previously-mentioned big six studios dominate distribution and marketing for films that are intended to reach a nation-wide audience. Each studio has a wholly-owned distribution arm that distributes titles that it finances or co-finances, as well as titles produced and financed by independent production companies. According to Epstein (2010), these six studios dominate because the multiplex owners who book movies believe that only the big six can “open” a movie in 3,000 or more theaters on any given weekend, as well as create a national audience for that movie through their marketing muscle.⁵¹

At least up until 2008, there were also over a dozen so-called specialty distributors handling independent films, including both studio-owned “indie companies,” and truly independent companies.⁵² Recently, however, all of these indie companies have folded. As a result, it has become much more difficult for indie films to obtain distribution and will likely remain so until new models for indie film distribution become economically viable.⁵³

⁵¹ See Epstein, Edward Jay. *The Hollywood Economist – The Hidden Financial Reality Behind the Movies*. Melville House. 2010 (Epstein (2010)). As discussed therein, “The distribution fee varies according to the strength of the players, but is always based on a percentage of gross revenues. Studios usually charge a 30 percent distribution fee on the movies they themselves finance. When it comes to films financed by other people’s money, the distribution fee is the subject of often contentious negotiations. Most outsiders seeking wide release pay about 18%. Since the actual cost of distributing a movie is about 8 percent (a figure which includes the incremental cost of PR specialists, media buyers, customs clearance and lawyers’ time) the studio makes as pure profit 10 percent of the gross revenues on a film that was financed entirely by another party.”

⁵² These studio-owned companies included Miramax, Fox Searchlight, Fox Atomic Films, Warner Independent Film, Picturehouse, New Line, Fine Line Features, and Sony Pictures Classics; Lionsgate Releasing, the Weinstein Company, and Summit Entertainment were actually independent of the studios.

⁵³ As explained by Epstein (2010), independent distributors obtained a significant portion of their revenues from lucrative output contracts with HBO and other payTV channels. PayTV channels paid generously for distributors’ output in order to attract customers with a wide range of movies. However, payTV channels switched tactics with the emergence of competition from DVDs and digital downloads; they bought fewer movies at lower prices and began creating their own programming both to hold audiences and to profit on the sales and downloads of DVDs made from those programs.

iii. Exhibitors

Once distribution services are arranged, the film is sent to exhibitors—*i.e.*, the multiplex owners who show the film in their theaters. Film distributors typically charge exhibitors fees based on a percentage of box office revenue, as opposed to a flat fee. Negotiation between distributors and exhibitors in the U.S. (and many other countries) is on a detailed, film-by-film, theater-by-theater basis. In addition to specifying the division of fees between the distributor and the exhibitor, exhibition contracts typically stipulate weekly session requirements and a minimum number of weeks for which the film must screen.⁵⁴

iv. Post-Theatrical Release

Traditionally, after releasing the film in theaters in the U.S. and abroad, the studios sell retailers VHS cassettes and DVDs for resale or rental. They also license the film to Pay-Per-View channels (PPV), “premium” cable channels, and airlines, followed by cable and broadcast TV. Since the 1970s, the post-theatrical release segment has come to replace the traditional cinema as the economic heart of the film industry.⁵⁵ By 2002, home video sales (VHS and DVD) accounted for 46% of film industry revenues, with approximately another 36% coming from after-market television and only the remaining 18% from theatrical exhibition.⁵⁶ In fact, many movies do not turn a profit until they are released to the home entertainment market. It is estimated that studios keep close to 80% of revenues from DVD sales, with the remaining 20% being paid to the various artists and production unions.⁵⁷ Part of the reason studios rely on the home theater market is that

⁵⁴ See McKenzie, Jordie. “The Economics of Movies: A Literature Survey,” *Journal of Economic Surveys*. June 18, 2009. Variations on the basic exhibition contract mean that the distributor’s share of box office revenues ranges from 55% to 90%.

⁵⁵ Currah, Andrew. “Hollywood versus the Internet: the media and entertainment industries in a digital and networked economy,” *Journal of Economic Geography*. April 2006. p. 451. (Currah (2006)).

⁵⁶ Smith, Michael and Rahul Telang. “Analysis of the Impact of Movie Broadcasts on DVD Sales and internet Privacy,” *Twentieth Eighth International Conference on Information Systems*, 2007. p. 2. (Smith *et al.* (2007)).

⁵⁷ *Ibid.*

luring a customer into a theater often costs the studios more than their share of box office revenues.⁵⁸

B. THE IMPACT OF DIGITIZATION

Thus far, digitization has had its greatest impact in the post-theatrical release segment of the industry, which has been dominated by physical DVDs for the past 8 to 10 years.⁵⁹ Online distribution of digitized movies has been possible since 1997. Nevertheless, revenues from online distribution have been relatively modest for the past five years due to both low sales volumes and relatively lower prices for online content. For example, in 2008 North American revenues from theatrical box-office distribution were \$9.6 billion, and revenues from home video were \$25.8 billion, while revenues from online distribution were only \$227 million.⁶⁰

Online distribution is becoming increasingly important to the industry at the same time that TVs are increasingly integrated with internet connectivity.⁶¹ For example, as of the end of 2010, Netflix alone had revenues of over \$2.1 billion dollars⁶², and the majority of Netflix subscribers viewed more of their TV shows and movies via streaming than they did by DVD.⁶³ Similarly, in January 2011, Hulu, a website discussed below, streamed an

⁵⁸ As discussed in Epstein (2010), “(I)n 2007, for example the six major studios spent, on average, \$35.9 million on advertising and prints per movie, but got back \$26.6 million per title. Even if the studios had made the movies for free — which of course they didn’t (the average cost was \$70.9 million) — they would have lost \$9.3 million per film on the theatrical run...”

⁵⁹ Digital technology is also having an important effect on film production because it eliminates the need for costly film and significantly reduces the cost of film editing and assembly (*see* Zhu, Kevin. "Internet-based Distribution of Digital Videos: The Economic Impacts of Digitization on the Motion Picture Industry," *Electronic Markets*. 2001.) Digitization can also reduce the cost of exhibiting movies in the theater but increases the pressures on movie theaters to differentiate the experience they provide from improved video-on-demand options.

⁶⁰ Cunningham, Stuart; Jon Silver and John McDonnell. “Rates of Change: Online Distribution as Disruptive Technology in the Film Industry,” *Media International Australia*. August 2010, p. 121.

⁶¹ “Internet-connected TV Set Sales Takes Off in January,” *TVB Television Broadcast*. February 25, 2010. Found at: <http://www.televisionbroadcast.com/article/95394>.

⁶² Netflix Inc. 10-K Filing for Fiscal Year ending December 31, 2010, p. 21.

⁶³ *Ibid.*, p. 1.

estimated 434 million minutes of video and generated almost 1.1 billion ad impressions.⁶⁴ These sites, and the others that have been added since, allowed 171 million US internet users to watch some form of streaming video in January 2011, with the average viewer watching 14.5 hours of video per month.⁶⁵ Although these numbers include all types of video content, it is clear that online distribution has become a major segment of the film distribution business. Meanwhile, internet-enabled TVs, as well as set-top boxes and other TV peripheral devices with internet connectivity, have been gaining popularity in 2010 and 2011.⁶⁶

C. WHAT ARE THE NEW BUSINESS MODELS FOR MOVIE DISTRIBUTION?

The remainder of this section describes three business models that have been used for the digital distribution of movies: (i) online subscription rentals; (ii) online video stores; and (iii) advertising-based services. It concludes with a brief discussion of how traditional models for distribution have evolved alongside and in response to these purely digital distribution models.

i. Online Subscription Rentals

The business of online subscription rentals for movies is currently dominated by one company: Netflix. Since its founding in 1997, Netflix has grown into one of Fortune

⁶⁴ comScore Press Release. “comScore Releases January 2011 U.S. Online Video Rankings.” February 15, 2011, Found at:

http://www.comscore.com/Press_Events/Press_Releases/2011/2/comScore_Releases_January_2011_U.S._Online_Video_Rankings.

⁶⁵ comScore Press Release, “comScore Releases January 2011 U.S. Online Video Rankings.” February 15, 2011, Found at:

http://www.comscore.com/Press_Events/Press_Releases/2011/2/comScore_Releases_January_2011_U.S._Online_Video_Rankings.

⁶⁶ In December 2010, Nielsen Co. announced that it would begin including homes with internet enabled TVs in its rating samples. Nielsen’s press release stated “With the expected growth of internet-enabled TVs, we believe the continued exclusion of this increasing number of homes would no longer enable us to fully represent consumers’ TV use.” See Mandesse, Joe. “Tis the Season To Be... Golly, Nielsen Adds Web-Enabled Sets to TV Ratings,” Media Daily News. December 8, 2010. Found at:

http://www.mediapost.com/publications/?fa=Articles.printFriendly&art_aid=140867.

Magazine's "50 most admired companies"⁶⁷ with over 20 million subscribers. Under its original business model, Netflix charged its customers a monthly flat fee for the right to view as many movies on DVD as desired, subject to the restriction that customers hold no more than an agreed-upon number of DVDs at any one time. Netflix delivered the customers' selected DVDs through the mail, and the consumers mailed them back when finished, with no late charges. In 2011 Netflix offered nine different physical DVD rental subscription options for U.S. customers, ranging from a one-DVD-per-month limit for \$4.99/month to an eight-DVD-per-month limit for \$55.99/month.⁶⁸

Netflix is also expanding into the content streaming business.⁶⁹ First introduced in January 2007, Netflix's streaming option allows consumers to watch television shows and movies on their computers and internet enabled TVs without any physical media.⁷⁰ Consumers could purchase a subscription option that includes unlimited streaming of digital content for \$4.99/month.⁷¹ This feature is very popular. In the first two months of 2011, 61% of movies procured online, whether streamed or downloaded, came from Netflix. The next closest competitor was Comcast with only 8%.⁷² Subsequently, Netflix began offering its streaming service on a stand-alone basis, a move that has been very successful thus far.

For Netflix, the average licensing cost of streaming is substantially less than for DVD rentals. In 2010, Netflix had close to \$1.3 billion in obligations for the long-term licensing of film and television content. One analyst estimates that by 2012 this figure

⁶⁷ Netflix, Inc. "Press Kit," 2011. Found at: <http://www.netflix.com/MediaCenter?id=5379>.

⁶⁸ *Ibid.*

⁶⁹ See discussion in Netflix, Inc. "Q1 2011 Letter to Shareholders," Netflix, Inc. April 25, 2011. p. 6.

⁷⁰ Netflix, Inc. "Press Kit," 2011. Found at: <http://www.netflix.com/MediaCenter?id=5379>.

⁷¹ *Ibid.*

⁷² Wolford, Josh. "Netflix Crushing the Competition," March 15, 2011. Found at: <http://www.webpronews.com/netflix-crushing-competition-2011-03>.

will exceed \$1.9 billion as Netflix expands its digital content offerings.⁷³ With the average Netflix consumer renting eight discs of material per month (including streaming content), and approximately 20 million Netflix subscribers in total, it is estimated that in 2011 Netflix paid about \$0.68 per disk rented for its content.⁷⁴ Netflix also pays for bandwidth to serve streaming customers and for postage to serve its traditional DVD rental market. As Netflix's streaming business overtakes its traditional physical delivery business, its postal costs will decline. While its cost of providing the bandwidth for streaming content will rise, this increase will likely be offset by the falling price of bandwidth. For instance in 2009, Netflix paid an estimated 5 cents to stream a movie; in March 2011 it paid only 2.5 cents to stream a movie, a 50% decline in two years.⁷⁵

In fiscal year 2010, Netflix earned revenues of over \$2.1 billion and had a total net income of approximately \$160 million—a profit margin of more than \$4.50 per subscriber.⁷⁶ With substantial profits, Netflix will likely inspire competitors. Currently, Netflix's greatest competition is the growing number of online streaming-only models.⁷⁷

ii. Online Video Store

The technology behind the online video store model is very similar to that utilized by Netflix in its streaming content option. A movie or set of movies is licensed from the

⁷³ Gruenwedel, Erik. "Analyst: Netflix Content Costs to Top \$1.9B by 2012." April 18, 2011. Found at: <http://www.homemediamagazine.com/netflix/analyst-netflix-content-costs-top-19b-2012-23696>.

⁷⁴ Assumes 8 disks per month x 12 months per year x 20 million subscribers = 1.92 billion discs sent out. 1.3 billion/1.92 billion = \$.68 per disk rented. See Gruenwedel, Erik. "Analyst: Netflix Content Costs to Top \$1.9B by 2012." April 18, 2011. Found at: <http://www.homemediamagazine.com/netflix/analyst-netflix-content-costs-top-19b-2012-23696>; for assumptions regarding disks per subscriber. Note that Netflix pays different licensing fees for new releases versus older films versus television shows, so its average cost per disk can only be viewed on aggregate.

⁷⁵ Rayburn, Dan. "Netflix's Streaming Cost per Movie Drops 50% from 2009," March 16, 2011. Found at: <http://seekingalpha.com/article/258564-netflix-s-streaming-cost-per-movie-drops-50-from-2009>.

⁷⁶ Netflix, Inc. 10-K Filing for Fiscal Year ending December 31, 2010, pp. 22 & 26.

⁷⁷ For a discussion of Netflix in comparison to these new competitors see: "Hulu, Redbox and Amazon: Can They Topple Netflix?" February 18, 2011. Found at: <http://seekingalpha.com/article/253734-hulu-redbox-and-amazon-can-they-topple-netflix>.

major studios that hold the given copyright. It is then provided in a library for users to download on a permanent, semi-permanent, or streaming basis for a fee. While the permanent and semi-permanent downloads are akin to buying or renting a DVD, the streaming basis offers a less expensive mode of viewing.

The features of these three key online movie formats can be summarized as follows:

- **Permanent Downloads:** In a permanent download the consumer downloads the entire file for unlimited viewing, regardless of an internet connection at the time of viewing. The ownership is equivalent to the consumer buying a DVD; in fact, depending on the decoding of the film, the consumer could actually burn the file to a DVD and watch it on a traditional DVD player. These files are typically the most expensive.
- **Semi-Permanent Downloads:** For a semi-permanent download, the user downloads the entire file and can watch it over a given timeframe or for a certain number of viewings.⁷⁸ The file is deactivated once the limit is reached. Again, the user does not have to be connected to the internet to watch the movie, as it is downloaded onto some form of physical media. These files are analogous to renting movies without a physical disk and are generally less expensive than permanent downloads.
- **Streaming:** Finally, the streaming option utilizes a technology similar to that employed by Netflix, in that the film is not permanently stored on the end-user's physical media.⁷⁹ Instead it exists only over the internet, and the user must maintain an internet connection to watch the film. This form of digital media is generally the least expensive.

Since the early 2000s, several companies have opened online movie stores. The current leader is Apple's iTunes. Initially launched to sell music, iTunes began selling digital videos in the fall of 2005, although its offerings were confined to music videos and a

⁷⁸ Note that with increasingly sophisticated technology, the consumer can begin to watch a movie prior to the completion of the movie download. Earlier technologies required the user to download the complete movie before being able to watch any portion of it. Later technology allowed for sequential downloading, so that the consumer could begin watching the movie shortly after starting the download. This is somewhat of a hybrid between download and streaming content.

⁷⁹ Note that this ignores the fact it is stored briefly on the computer in short-term memory; the stored files cannot be accessed through normal use by the consumer and so can be effectively ignored.

limited number of TV shows.⁸⁰ By January 2008, iTunes made movies available for between \$2.99-3.99, allowing users to download the movie, store it for 30 days, and have 24 hours to finish watching the movie once they started it.⁸¹ Furthermore, the consumer could start watching the film on a computer and finish watching it on another Apple device.⁸² Since then, Apple has come to dominate the online sale of movies and TV shows. In 2010 it accounted for 64.5% of all electronic sell-through and internet video-on-demand revenues.⁸³

Despite Apple's success, however, other businesses are beginning to catch up. Microsoft increased its share of the video on demand (VOD) business from 11.6% in 2009 to 17.9% in 2010. Companies such as Sony, Amazon, and Wal-Mart are also making headway in this sphere and are expected to grow as consumers switch over from more traditional physical formats to digital downloads.⁸⁴

Interestingly, several studio versions of the online movie store were unsuccessful, despite the fact that the studios' control of film distribution licenses allowed them to deal more directly with consumers than their rivals.⁸⁵ For example, Movielink, a 2001 joint venture among five of Hollywood's major studios, began with \$150 million in start-up capital,⁸⁶

⁸⁰ One expert estimated that iTunes' annual revenues were below \$8.5 million, which was not even enough to cover the high-setup and operating costs of a centralized architecture. "iTunes Offers 'Lost' on Video iPod," Techtree. October 13, 2005. Found at:

http://www.techtree.com/techtree/jsp/article.jsp?article_id=68587&cat_id=615

⁸¹ Hackingnetflix. "As Expected, Apple Launches iTunes Movie Rentals." January 15, 2008. Found at: <http://www.hackingnetflix.com/2008/01/as-expected-app.html>.

⁸² *Ibid.*

⁸³ Lawler, Ryan. "iTunes Tops Online Movie Sales, But Competition Is Heating Up," February 7, 2011. Found at: <http://gigaom.com/video/itunes-est-ivod/>.

⁸⁴ *Ibid.*

⁸⁵ Note that as of 2005 six Hollywood studio companies controlled approximately 90% of revenues in the US film industry. See Currah (2006).

⁸⁶ Olsen, Stefanie. "Movielink ready to roll," November 10, 2002. Found at: http://news.cnet.com/Movielink-ready-to-roll/2100-1026_3-965194.html?tag=mncol.txt. Although an anti-trust suit was brought against Movielink, the venture was approved by the Department of Justice on the grounds that it attempted to harness a disruptive technology and to formulate a common approach to a new market. See Currah (2006). See also, Department of

Continued on next page

failed miserably, and was sold in 2007 to Blockbuster for less than \$20 million.⁸⁷ Movielink’s failure may be partially attributed to high prices and the site’s consumer-unfriendly features. For example, as a result of the studios’ long-term contracts with PPV providers, Movielink did not offer movies any sooner than they could be obtained from alternative providers.⁸⁸ Movielink’s timing may also have been an important factor. Today an increasing number of televisions are integrated with the internet through direct connections or video game consoles. Furthermore, it takes much less time to download a full-length movie today than it did in the early 2000s. Had this been the case five years ago, consumers might not have abandoned Movielink, which had a large film catalog and a jumpstart in the industry.⁸⁹

iii. Advertising-Based Services

The advertising-based business model uses the same technology and method as the online video store but relies on ad revenues rather than a subscription or pay-per-view model to sustain itself. In this model, videos are streamed rather than sold. Retailers sell ad space in the form of both banner ads on the site and commercials between video clips. Numerous entities have entered this arena and have been able to raise significant capital. For instance, in 2008 eight companies—including Hulu, Veoh, Vuze, DailyMotion and Metacafe—raised over \$350 million dollars in capital to support websites that aggregated video in the form of movies and TV shows and relied primarily on advertising revenue.⁹⁰

Continued from previous page

Justice. “Justice Department Closes Antitrust Investigation into the Movielink Movies-on-Demand Joint Venture.” June 3, 2004. Found at:

http://www.justice.gov/atr/public/press_releases/2004/203932.htm.

⁸⁷ The Economist. “Hollywood and the internet: Coming Soon,” The Economist. February 21, 2008.

⁸⁸ Currah, Andrew. “Hollywood versus the Internet: the media and entertainment industries in a digital and networked economy,” *Journal of Economic Geography*. April 2006, (Currah (2006)) at p. 454.

⁸⁹ *Ibid.*, pp. 453-454.

⁹⁰ Richmond, Will. “Video Aggregators Have Raised \$366+ Million to Date,” June 5, 2008. Found at: <http://www.videonuze.com/blogs/?2008-06-05/Video-Aggregators-Have-Raised-366-Million-to-Date/&id=1867>.

Other sites that offer streamed video free of charge to consumers include YouTube, which has specialized in user-provided clips, and individual network websites such as ESPN.com and NBC.com. The sheer number of such sites may present a problem for long-term prospects for the advertising-based business model. Aggregating sites, like Hulu or Veoh, only generate ad revenue if they have a high volume of users. On the one hand, large number of fragmented sites may make it hard for sites to build a base of viewers or to differentiate themselves.⁹¹ On the other hand, when sites can more specifically target ads to a particular group of viewers, ad values and revenues might increase. In either case, there have been some notable success stories.

Perhaps the most successful ad-based site to date has been Hulu. Hulu allows consumers to rely on a single site to provide all of the content they seek, rather than requiring them to switch sites to view various networks' shows. In commenting on this model, Hulu's CEO stated that "(a)ggregation works for consumers, it makes it easier to find and discover and enjoy premium content, and it works for advertisers, because with that aggregation you get greater reach."⁹² The example of Hulu provides insights into how the advertiser-supported business model is evolving over time.

Hulu was founded in March 2007 and initially generated all of its revenues from sales of ad space on its website, as well as ad clips inserted between its shows. Consumers could watch both recent TV shows and TV and movie classics. A 2010 article notes that Hulu had over 200 content suppliers at the time, who received between 50-70% of the advertising revenue generated on the site. Further, in January of 2010, consumers streamed over 903 million videos from the site.⁹³

⁹¹ For further discussion of these issues see "2009 Prediction #4: Ad-Supported Premium Video Aggregators Shakeout," December 18, 2008. Found at: <http://www.videonuze.com/blogs/?2008-12-18/2009-Prediction-4-Ad-Supported-Premium-Video-Aggregators-Shakeout/&id=2035>.

⁹² Stetler, Brian and Brad Stone. "Hulu, the online-video hub, contemplates its future," The Seattle Times. April 4, 2010. Found at: http://seattletimes.nwsourc.com/html/business/technology/2011517934_bthulufuture05.html?syndication=rss.

⁹³ *Ibid.*

A few years ago, Hulu announced a premium subscription model called Hulu-Plus in addition to its ad-supported service. In the subscription model, consumers pay \$9.99/month for access to a full season's worth of a TV show as well as to past episodes. The decision to push for a subscription model as well as an ad-supported model was in part due to pressures from the content providers, who were seeking greater revenues.⁹⁴ Ad-revenues on Hulu are as much as 60% lower than they are for the same program on network television.⁹⁵ Although online ad revenue is expected to increase in the future as more users turn to online-only viewers, for the time being it is not enough to satisfy the TV networks and film studios.

The subscription service is an example of the "Freemium" business model that is increasingly becoming popular in the emerging technology sphere. In this model, the company gives away a service free and acquires a large customer base through various means, including word of mouth, referrals, and marketing. The business then offers a premium service for a price.⁹⁶ Aside from Hulu, notable examples of this model include Skype, Flickr, and Trillian. Recently YouTube implemented this model when it began offering movie rentals on a pay-per view basis.⁹⁷ Hulu's utilization of this model makes it a hybrid in that it is utilizing the ad-sponsored video service as its main service, while also allowing consumers to purchase a subscription for streaming content similar to that offered by Netflix. Hulu demonstrates the potential for success of ad-supported video providers and serves as a possible sign of what is to come in the online film distribution market. Consumers receive standard content free but may pay for premium content.

⁹⁴ Sandoval, Greg. "Hulu unveils \$9.99 premium service," June 29, 2010. Found at: http://news.cnet.com/8301-31001_3-20009174-261.html.

⁹⁵ Cunningham, Stuart; Jon Silver; and John McDonnell. "Rates of Change: Online Distribution as Disruptive Technology in the Film Industry," Media International Australia. August 2010, p. 122.

⁹⁶ This model was first defined as "Freemium" in a blog run by venture capitalist Fred Wilson. He wrote about the model on his blog and it was tagged as "Freemium" in the comments section. For the original blog post and further discussion see: Wilson, Fred. "My Favorite Business Model," March 23, 2006. Found at: http://avc.blogs.com/a_vc/2006/03/my_favorite_bus.html.

⁹⁷ Hatmaker, Taylor. "YouTube adding 3,000 streaming movie rentals, including new releases." May 9, 2011. Found at: http://news.yahoo.com/s/yblog_technews/20110509/tc_yblog_technews/youtube-adding-3000-streaming-movie-rentals-including-new-releases.

Remarkably, this seems similar to the way TV has evolved; consumers can get broadcast television for free but must pay a premium for additional content.

iv. Evolution in Traditional Post-Theatrical Distribution Models

a) Kiosk Rental

One new business model that is based solely on physical DVDs is the kiosk rental model. A single kiosk may be located in a gas station, grocery store, or any major pedestrian area. This model still relies on the rental of DVDs and does not depend on the internet more than a standard video store would.⁹⁸ Indeed, the underlying economics of this model are almost exactly the same as those of the video rental store, but the model is likely to be more convenient and cheaper for consumers than the old video rental model. The consumer selects a movie from the kiosk, rents it for a 24-hour period, and then returns the movie to any kiosk owned by the rental company. The kiosk companies are able to charge a significantly lower fee due to their low overhead, with overnight rentals costing only \$1.⁹⁹ Major companies in this sphere include Redbox, The New Release, DVDplay, and Blockbuster Express.¹⁰⁰

b) Cable/Satellite

Cable and satellite television are other media of home distribution that are evolving in the changing landscape of film distribution. These two media have long been the haven of the film industry, providing ample margins to studios while serving a wide range of

⁹⁸ This means that the kiosk might still have an internet connection, but that it only uses this connection to process transactions and possibly to control inventory. It does not stream the content to the user or require the user to make purchases online through a mobile application or internet browser. Note that some recent innovations in this market do allow the consumer to check which titles are available at a given kiosk and to reserve titles ahead of time, see www.redbox.com.

⁹⁹ West, Joel. "Commoditized video rentals," August 11, 2009. Found at: <http://blog.openitstrategies.com/2009/08/commoditized-video-rentals.html>.

¹⁰⁰ "Redbox," available at: <http://en.wikipedia.org/wiki/Redbox>. The growing popularity of this model sparked litigation when the movie studios, feeling that Redbox's sales in particular were hurting their DVD sales, refused to sell their newest releases to Redbox. In response to Redbox's successful legal action, Sony and Paramount negotiated new deals with Redbox in which the company agreed to destroy its DVDs after their rental term, rather than reselling them on the used DVD market.

customers.¹⁰¹ These services have also benefitted from the growing importance of premium content and programming provided by channels such as HBO and Starz, which generate original programming as well as offer new releases that consumers for which consumers are willing to pay.

However, these services are facing increased competition for customers from online digital content providers such as Netflix and Hulu. In response to this competitive threat, the services are also starting to move online. For instance, Comcast provides its subscribers with an option to stream certain channels to their home computers online, regardless of location.¹⁰² Thus far, cable and satellite providers have been able to retain customers through their ability to cover live sports and events, a service that streaming video providers have yet to provide. Nevertheless, these companies will need to continue to adapt to the changing marketplace and to consumer needs in order to stay relevant as TVs, game consoles, and video devices become increasingly online-enabled.

D. HOW WILL CHANGES IN POST-THEATRICAL DISTRIBUTION AFFECT MOVIE STUDIOS?

The new business models and post-theatrical distribution supply chain have placed enormous economic pressures on the studios as they struggle to make strong margins in an increasingly commoditized distribution market. Furthermore, the studios now must compete with pirated movies. To address how changes in post-theatrical distribution will affect movie studios, we will first look at the effects of piracy on the studios and then examine how the studios fit into the new paradigm of online video distribution.

Prior to the development of digital technology, it was difficult to copy and mass produce films without serious losses in quality.¹⁰³ Today, however, this is easy to accomplish. If a pirate distributor can gain access to a master copy of a film, that distributor can mass-

¹⁰¹ Epstein, Edward Jay. "Hollywood Demystified." Winter 2005. Found at: <http://www.scribd.com/doc/5885934/How-film-studios-make-money>.

¹⁰² See details at <http://xfinitytv.comcast.net/>.

¹⁰³ Smith *et al.* (2007).

produce copies with little loss of quality and sell them for slightly above the cost of burning and packaging a DVD.¹⁰⁴ Studios often complain that they are losing substantial profits due to piracy. For instance, in a 2005 report, the MPAA claimed that the movie industry lost \$1.2 billion in the U.S. alone due to piracy.¹⁰⁵ Another report cited by the MPAA puts world losses due to piracy at close to \$6.1 billion.¹⁰⁶ Of this \$6.1 billion, it was claimed that \$2.4 billion was lost to bootlegging (purchasing an illegally copied DVD), \$1.4 billion was lost to illegal copying (copying someone else's DVD), and \$2.3 billion was lost to internet theft (illegal downloads through mostly P2P).¹⁰⁷

Despite these claims of large losses, the dollar effect that piracy has on the industry is unclear. As discussed in the context of music piracy, it is not appropriate to measure economic losses due to piracy at a one-to-one ratio; the sale of one pirated movie for a dollar does not necessarily imply that the industry lost \$15 in sales. It is likely that the consumer purchasing the film for one dollar would not purchase the same film for \$15. There exist certain substitution and elasticity effects that are difficult to quantify and vary across countries.¹⁰⁸ Further, piracy may bring economic benefits to intermediaries and content creators in certain circumstances. For example, studies have shown that in some cases piracy can be useful in establishing a user base, speeding up diffusion, acting as a “free sample”, and reducing price competition.¹⁰⁹

Beyond the effects of piracy, studios face increasing pressures to find an alternative to the new distribution supply chain of online video distribution. As discussed above, the

¹⁰⁴ “Quivering On The Edge of the Digital Abyss.” January 10, 2010. Found at: <http://www.edwardjayepstein.com/Quivering.htm>.

¹⁰⁵ Karganis, Joe (ed.). “Media Piracy in Emerging Economies,” Social Science Research Council. 2011. p. 12.

¹⁰⁶ Stwek, Stephen E.. “The True Cost of Motion Picture Piracy to the US Economy,” Institute for Policy Intervention. September 2006. p. 5.

¹⁰⁷ Bayley, Patricia. “What Does Piracy Really Mean to the Movie Industry?” IESE Business School. November 11, 2009, p. 6.

¹⁰⁸ For a further discussion of this see, Karganis, Joe (ed.). “Media Piracy in Emerging Economies,” Social Science Research Council. 2011. pp. 16-18.

¹⁰⁹ Smith *et al.* (2007).

business models of online distribution are increasingly removing the studio from the distribution sphere, relegating them to licensing and financing intermediaries. Furthermore, with the decline in the DVD sales that have been the “cash cow” for studios over the last 10 years, the major studios may be forced to change their business model.¹¹⁰ How the studios are to survive in this new paradigm is a question at the center of many executives’ and analysts’ minds.

One prominent executive noted that in current new business models the companies are “trading digital pennies for analog dollars.”¹¹¹ Studios have tried to resist this trend by forcing companies to sell their downloaded content for prices similar to those of DVDs, despite the obviously lower cost of online versus physical production.¹¹² The problem is two-fold for the studios. First, by allowing online stores to charge less for online-distributed movies, studios encourage further cannibalization of DVD sales as consumers flock to the cheaper alternatives. Second, big-box stores like Wal-Mart and BestBuy will demand that they be able to purchase and sell the DVDs for lower prices to preserve their physical sales. Both forces limit sales margins, leaving studios caught between an emerging technology on one hand and the large retail outlets on the other. To make matters worse for the studios, some companies are willing to operate at a loss on the sale of the movie to encourage consumers to either buy their product, in the case of Apple and the iPod, or shop in their stores, in the case of Wal-Mart. This puts even further downward pressure on prices.

Although studios face many obstacles, they are still profitable, major players in the industry. Films are still breaking box office records, and DVD and Blu-Ray sales were

¹¹⁰ The Economist. “Hollywood and the internet: Coming Soon,” The Economist. January 7, 2010.

¹¹¹ Wallenstein, Andrew. “Was Jeff Zucker Really So Bad For NBC Universal?,” January 28, 2011. Found at:
<http://paidcontent.org/article/419-was-jeff-zucker-really-so-bad-for-nbc-universal/>.

¹¹² “Quivering On The Edge of the Digital Abyss.” January 10, 2010. Found at:
<http://www.edwardjayeinstein.com/Quivering.htm>.

close to \$2.1 billion for the first three months of 2011.¹¹³ Furthermore, major studios still exert control over the financing and distribution of movies to the cinema market. However, it is clear that the traditional distribution channels have begun to change and studios must adapt to remain relevant players in the downstream market. More research is needed to assess how the studios can remain profitable in this changing landscape and how their recent licensing agreements with online distributors will play out in the future.

E. HOW WILL CHANGES BROUGHT BY DIGITIZATION IMPACT INDEPENDENT PRODUCERS?

With the advent of the new digital distribution channels and business models in the film industry, the independent artist has the opportunity for greater autonomy in the ability to distribute independent movies, albeit autonomy limited by the clout that major studios hold in the market. Prior to these changes artists had to rely on selling either their unfinished film (in the form of a screenplay) or finished film to a studio in order for the film to reach a wide audience. As previously discussed, this was because of the large upfront expense of first marketing and then distributing a film, both to the cinemas and via physical media. Only major studios generally had the capital to finance this venture as well as the contacts and technical expertise to properly market and distribute the film. Therefore, they had the power to dominate any negotiation with the filmmaker, which in return allowed them to control both the licensing terms and the curatorial terms of any agreement.¹¹⁴ Today with the advent of online distribution, the cost for both the marketing and distribution of a film is significantly reduced. In return, the independent filmmakers who can finance the production of their own films no longer have to rely on selling it to a studio, allowing them to negotiate their own licensing terms with distributors and create their art free of any studio influence.

¹¹³ Snider, Mike. "Home video sales slide; more opt for Blu-ray players," USA Today. May 3 2011. Found at:

http://www.usatoday.com/tech/news/2011-05-02-dvd-movie-sales-continue-slide_n.htm.

¹¹⁴ For a discussion of the history of how the film industry in relation to negotiations with filmmakers has changed see Garon, Jon M. "Content Control and the Socially Networked Film," University of Louisville Brandeis School of Law – Second Annual Conference on Innovation and Communication Law. August 2009.

One key reason that independent filmmakers now face lower costs is that it is much cheaper to mass-produce an online digitally streamed movie than it is to produce a DVD. An online movie can reside on a server and does not have to be stamped, packaged, and shipped. Instead, a digital copy just has to be provided to the distributor, which can then host the film on its site. Furthermore, the filmmaker can sign agreements with multiple distributors that can all host the movie, allowing the filmmaker even greater access to the market.¹¹⁵ Although this prevents the filmmaker from showcasing the product in a cinema, if the movie achieves success through online distribution, independent cinemas might contact the filmmaker to license the film directly. One limitation to this model is that if the film is not shown in theatres first will not be considered for an Academy award.¹¹⁶ Given that many independent filmmakers desire the accolades of the Academy to further their careers, this could be a serious limitation. However, with the advent of social media and ad-supported sites there are still opportunities for filmmakers to get their movies in cinemas—and onto Oscar nomination—without relying on the major studios.¹¹⁷

Filmmakers are also using the internet as a tool to help finance and/or market their films. For example, a filmmaker might first prepare a preview or short of his film and distribute it on the internet in order to gain attention through user's reviews and word of mouth. Having generated positive feedback, the filmmaker might then be able to gain additional

¹¹⁵ See discussion in Garon, Jon M. "Content Control and the Socially Networked Film," University of Louisville Brandeis School of Law – Second Annual Conference on Innovation and Communication Law. August 2009, pp. 19-21.

¹¹⁶ "Academy of Motion Picture Arts and Sciences, 80th Academy Award Rules for Distinguished Achievements in 2009, Rule 2 (3.)," Academy of Motion Picture Arts and Sciences. Found at: http://www.oscars.org/awards/academyawards/rules/82aa_rules.pdf

¹¹⁷ One loophole in the Academy's rules regarding films eligible for an Oscar is that ten minutes or 10% of the running time is allowed in a non-theatrical setting prior to the film's release. This means filmmakers can post extended previews or shorts related to the film on video websites such as YouTube, or social media networks such as Facebook without compromising the film's Oscar eligibility. "Academy of Motion Picture Arts and Sciences, 80th Academy Award Rules for Distinguished Achievements in 2009, Rule 2 (3.)," Academy of Motion Picture Arts and Sciences. Found at: http://www.oscars.org/awards/academyawards/rules/82aa_rules.pdf

financing for distribution from non-studio investors. This process of marketing through making a direct connection with the consumer is at the heart of several new internet-based business strategies and is an emerging option for filmmakers.¹¹⁸ The filmmaker can employ a similar strategy by showing short films, or discussing ideas on videos and then offering consumers a chance to either donate money to make the film or buy a credit in the film, similar to the way that crowd-sourced funding works in the music industry. Websites that offer this feature, such as buyacredit.com, have achieved mild success.¹¹⁹

Although the aforementioned models do allow greater autonomy to small independent filmmakers, the advent of online distribution has limited potential for filmmakers who want to make big-budget films. With a major film costing over \$200 million on average¹²⁰, of which \$39 million is spent just on marketing the film¹²¹, it is hard to imagine that selling credits or garnering attention in social media sites will ever be able to cover the costs or inspire investors to back such a large undertaking. Instead, these films must rely on the traditional studio financing and supply chain for their distribution. Granted, social media creates increased opportunities to reduce marketing costs; the director and stars can give interviews on social media sites attracting the attention of fans, or post previews on ad-sponsored video sites. However, such marketing techniques cannot reduce costs enough to make putting out a major movie affordable for independents. In this sense the studios will still maintain some control over the licensing and artistic output of the movie industry for the time being. However, as the industry changes, the relationship between filmmaker and studio will continue to evolve.

¹¹⁸ See discussion at Garon, Jon M. "Content Control and the Socially Networked Film," University of Louisville Brandeis School of Law – Second Annual Conference on Innovation and Communication Law. August 2009, p. 19.

¹¹⁹ *Ibid*, pp. 31-32.

¹²⁰ Currah (2006) at p. 451.

¹²¹ Epstein, Edward Jay. "Hollywood Demystified." Winter 2005. Found at: <http://www.scribd.com/doc/5885934/How-film-studios-make-money>.

IV. BOOKS

A. TRADITIONAL SUPPLY-CHAIN

In the traditional book supply chain, authors first create their product, a book manuscript or proposal.¹²² Authors then seek a publisher willing to buy their product, sometimes by sending manuscripts to various publishing houses to pique their interest or by working with a book agent who looks for a publisher on behalf of the author. Typically publishers compensate authors on a royalty basis, with the publisher determining what percentage of the overall sales the author may receive.¹²³ Royalties fall within the range of 7% to 15% of the list price set for the physical book.¹²⁴ Good publishers find and groom writers, including those who do not show much initial commercial promise. Publishers give advances on royalties, which writers of nonfiction need in order to afford research for new books.¹²⁵

The publishing house covers the production costs of the book, which include the editing and reviewing of the manuscript and the marketing and promotion, printing, and distribution of the finalized book. A printer produces a number of copies of the book, perhaps storing the books until they are sold if an especially large print run is requested. Printed books are then sent through distributors and wholesalers to booksellers and retailers who sell the books to the end consumers.¹²⁶

Traditionally, publishers have sold books to stores, setting the wholesale price for hard covers at 50% of the cover price.¹²⁷ Profit margins for publishers are slim. For a

¹²² Elliott, Amy M. “(R)Evolution in the Information Industry: What the Information Industry Can Learn from the Music Industry,” Library Faculty Publications and Presentations, The Albertsons Library, Boise State University. January 1, 2010. pp. 4-5.

¹²³ Muravskiy, Daniil. “The Digital Book as a Disruptive Innovation,” St.P. State University Graduate School of Management Master’s Thesis. 2010. (Muravskiy (2010)) pp. 71-73.

¹²⁴ *Ibid* p. 76.

¹²⁵ Auletta, Ken. “Publish or Perish,” *The New Yorker*. April 26, 2010. (Auletta (2010)).

¹²⁶ Muravskiy (2010) at pp. 71-73.

¹²⁷ Auletta (2010).

hardcover book sold for \$26, with 50% as the retailer's margin and the remaining 50% covering the publisher's costs, the breakdown of publisher's costs is as follows: 15% for author royalties; 7% for the costs of paper, printing, and binding; 4% for marketing; 7% for distribution; and the remaining 18% to cover rent, editors, a sales force, and any write-offs of unearned author advances. Book vendors return 35% of the hardcovers they buy, which are costs publishers must write off.¹²⁸ Often, the hardback version of a book comes out months before the paperback version, which is sold for much less. This model has persisted more or less unchanged for decades, but the arrival of e-books has introduced a new distribution method.¹²⁹

B. THE IMPACT OF DIGITIZATION

In the digital era, the industry has an alternative step at the end of its traditional supply chain: digital conversion. Consumers can now access digital versions of books, or e-books, over the internet. Though the first versions of e-books evolved 40 years ago, e-books gained a large stake in the mass market around 2007.¹³⁰ At the end of 2010, e-book sales constituted about 10% of total book sales, with the expectation that this figure would rise to 25% in the next two to three years.¹³¹ Publishers expect that e-book sales will surpass traditional book sales by 2018.¹³² By 2015, sales of e-books are expected to reach \$3 billion.¹³³ The availability of e-books has affected how books are made available to consumers for purchase from vendors. E-books can be purchased online

¹²⁸ Muravskiy breaks the costs up as 45 percent as the retailer's margin, 5.5 percent as the publisher's profit, and the remaining 49.5 percent covering the publisher's costs: 12.5 percent for author royalties; 12 percent for shipping and printing costs; 5 percent for marketing costs; 10 percent to the wholesaler; and 10 percent for editing and reviewing manuscripts. See Muravskiy (2010) at pp. 71-73.

¹²⁹ Auletta (2010).

¹³⁰ See Muravskiy (2010) at pp. 71-73. Project Gutenberg was founded in 1971 and is a digital library with the full texts of public domain books that can be read by almost any computer in a variety of digital formats.

¹³¹ "Times Will Rank e-Book Best Sellers," The New York Times. November 10, 2010.

¹³² Loebbecke, Claudia. "The Emergence of eBooks: Just Another Media Industry Joining the Converging Digital World? An Explorative Study on User Preferences and Industry Structure Changes," University of Cologne. 2010. p. 5.

¹³³ Rosenbloom, Stephanie. "Would You Sign My Kindle?," The New York Times. April 13, 2011.

through traditional book vendors, like Amazon and Barnes & Noble, as well as through newer industry participants, like Apple with its iBooks and iBookstore applications.

In order to read an e-book, a consumer must have an internet-connected e-reader. The e-reader may be a multi-purpose device—such as a computer, Smartphone, or tablet—or a device developed specifically for reading e-books. Not surprisingly, the market for e-books has led to the rise of a complementary market for e-readers, and marketing efforts to sell e-books are often closely tied to marketing efforts to sell the required e-reader. The above-mentioned vendors each offer their own e-reader: Amazon offers the Kindle, Barnes & Noble offers the Nook, and Apple offers the iPad, iPhone, and iPod Touch. There are other makers of e-readers in addition to these three big market players, the most notable of which is Sony. Sony beat the others to the e-reader market with its Librie tablet, launched in April 2004 and hailed as “the first successful attempt at a proper electronic book with a display that approximates the look of traditional paper.”¹³⁴

Many e-readers such as the Kindle and Apple’s various devices are integrated with wireless internet. This provides customers with the ability to download e-books and other content directly to their e-readers. For example, when a consumer purchases an e-book from Amazon, the purchase is sent automatically and wirelessly to the selected Kindle or Kindle app. Downloads made to Kindle for PC can be transferred to a Kindle later.¹³⁵ In general, consumers pay a one-time purchase fee, as they do for physical books, and have the right to read the e-book as many times as they would like. As in a physical library, the number of e-books stored on an e-reader device is limited only by space; however, in this case, the limiting factor is memory rather than physical dimensions.

In contrast to the music and movie industries, traditional book retailers adapted to digitization by introducing e-reader devices that integrated Digital Rights Management (DRM) copyright protection from the beginning. To prevent piracy in this business

¹³⁴ Lytle, J. Mark. “Library Without Books,” *The Guardian*. April 22, 2004.

¹³⁵ “Kindle for PC.” Amazon.com. Found at: http://www.amazon.com/gp/feature.html/ref=kcp_pc_mkt_lnd?docId=1000426311.

model, titles are encrypted so that they can only be used on the e-reader device to which they are initially downloaded. This security system means that consumers generally cannot share e-books unless they share the e-reader device to which the books have been saved.¹³⁶

C. HOW WILL COMPETITION EVOLVE IN THE DISTRIBUTION AND SALE OF E-BOOKS?

The operating margins on digital book sales range from 25% to 30%, while operating margins for traditional book sales are in the mid-teens.¹³⁷ In addition to profiting from e-book sales, distributors are also profiting from e-book reader devices. As noted previously, the most popular e-book and e-book reader vendors are: Amazon, the e-book reader Kindle, and Kindle applications; Barnes & Noble and the Nook; and Apple, the iPad, iBooks, and iBookstore applications.¹³⁸ The remainder of this section discusses the current business models of these players and the potential for change in the nature of competition among them.

i. Amazon and the Kindle

Amazon began selling e-books in April 2001, when Amazon teamed with Adobe Systems, Inc. to offer the Adobe Acrobat eBook Reader software in Amazon's e-book store.¹³⁹ Over the last 10 years, Amazon has seen incredible growth in its e-book line; the company has gone from offering two thousand titles in 2001 to nearly one million as of May 2011.¹⁴⁰ In November 2007, Amazon introduced its e-book reader, the Kindle,

¹³⁶ Carreiro, Erin. "Electronic Books: How Digital Devices and Supplementary New Technologies are Changing the Face of the Publishing Industry," *Publishing Research Quarterly*. October 26, 2010, p. 225. (Carreiro (2010)).

¹³⁷ Cheng, Andria. "Barnes & Noble Shares Up on Buy Rating," *The Wall Street Journal*. May 6, 2011.

¹³⁸ Carreiro (2010).

¹³⁹ Adobe and Amazon.com. "Adobe and Amazon.com to Extend Availability of Adobe Acrobat eBook Reader and eBook Titles Worldwide." April 10, 2001. Found at: <http://www.adobe.com/aboutadobe/pressroom/pressreleases/200104/20010410amazon.html>.

¹⁴⁰ Adobe and Amazon.com. "Adobe and Amazon.com to Extend Availability of Adobe Acrobat eBook Reader and eBook Titles Worldwide." April 10, 2001. Found at:

entering the nascent e-reader market. Amazon now has 70% to 80% share in the e-book business.¹⁴¹

Amazon's homepage touts the Kindle as "The #1 Bestselling Product on Amazon." The Kindle was designed to interface with Amazon's online Kindle store, accessed via Amazon.com. It uses a proprietary file format, so owners of the Kindle must buy their e-books from Amazon.¹⁴² The current generation of Kindle can store up to 3,500 titles in its memory and downloads e-books in 60 seconds. One of Amazon's selling points for the Kindle is that it is "lighter than a paperback," with a weight of 8.7 ounces and a depth of 1/3 of an inch. Books that consumers purchase from the Kindle store are automatically backed up online in the consumer's Kindle library on Amazon and can be re-downloaded wirelessly for free at any time.¹⁴³ The Kindle models currently on offer range from \$114 to \$379, with the Kindle 3G priced at \$189.¹⁴⁴

In January 2011, Amazon announced that for the first time, it had sold more Kindle e-books than paperback books, selling 115 e-books for every 100 paperbacks.¹⁴⁵ The number of e-books available has grown from 90,000 at launch to 945,026 in May

Continued from previous page

<http://www.adobe.com/aboutadobe/pressroom/pressreleases/200104/20010410amazon.html>.; International Business Times "Kindle to Generate \$5.42 bn Revenue in 2011 for Amazon." May 10, 2011. Found at: <http://www.ibtimes.com/articles/143318/20110510/amazon-com-kindle-ebook-reader-device-apps-video-book-titles-store-nasdaq-stock-market-wi-fi-114.html>. Amazon currently offers 945,026 titles.

¹⁴¹ Carnoy, David. "Amazon: We have 70-80 percent of e-book market," August 2, 2010. Found at: http://reviews.cnet.com/8301-18438_7-20012381-82.html.

¹⁴² A user may be able to download software to convert files into Kindle-friendly formats, but the Kindle does not readily read any other e-book format.

¹⁴³ Amazon. "Charlaine Harris Passes 1 Million Kindle Books Sold." May 11, 2011. Found at: <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1562816&highlight=>.

¹⁴⁴ "Amazon Kindle Store," Amazon, Inc., available at: <http://www.amazon.com/kindle-store-ebooks-newspapers-blogs/b?ie=UTF8&node=133141011>.

¹⁴⁵ Perenson, Melissa J. "Amazon Kindle Book Sales Soar." January 27, 2011. Found at: http://www.pcworld.com/article/218039/amazon_kindle_book_sales_soar.html.

2011.¹⁴⁶ According to analysts, the Kindle has seen explosive growth since 2008, with estimated Kindle shipments increasing from 240,000 in 2008 to 8.5 million in 2010.¹⁴⁷ Analysts forecast that the Kindle can generate revenue—tied to the Kindle unit, accessories, e-books, and subscriptions—in excess of \$5.42 billion in 2011 and \$7.96 billion in 2012.¹⁴⁸

Since the Kindle has been released, Amazon has become more flexible with certain policies to meet consumer expectations. For example, in November 2010, three years after the Kindle’s launch, Amazon made it possible for consumers to give e-books as a gift to anyone with an email address.¹⁴⁹ In April 2011, Amazon reversed its decision to block Kindle users from borrowing e-books from libraries.¹⁵⁰ Before then, only users of the Nook (either the reader or the app), the Sony Reader, and the Kobo reader could use library e-books.

An analyst notes the way the Kindle enhances Amazon’s profits beyond the business of selling physical books: “We think that Kindle not only helps to remove multiple costs and inefficiencies in the traditional book printing and distribution business (*e.g.*, print and fulfillment costs, back order risk, and inventory management) but also increases propensity to buy books/content and other adjacent products due to convenience and 24/7 access.”¹⁵¹

¹⁴⁶ International Business Times “Kindle to Generate \$5.42 bn Revenue in 2011 for Amazon,” May 10, 2011. Found at: <http://www.ibtimes.com/articles/143318/20110510/amazon-com-kindle-ebook-reader-device-apps-video-book-titles-store-nasdaq-stock-market-wi-fi-114.html>.

¹⁴⁷ *Ibid.*

¹⁴⁸ *Ibid.*

¹⁴⁹ “For the First Time, Give the Gift of Kindle Books (No Kindle Required).” November 19, 2010. Found at: <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1498845&highlight=>.

¹⁵⁰ Bosman, Julie. “Kindle Users to be Able to Borrow Library e-Books,” *The New York Times*. April 20, 2011.

¹⁵¹ International Business Times “Kindle to Generate \$5.42 bn Revenue in 2011 for Amazon.” May 10, 2011. Found at: <http://www.ibtimes.com/articles/143318/20110510/amazon-com-kindle-ebook-reader-device-apps-video-book-titles-store-nasdaq-stock-market-wi-fi-114.html>.

ii. Barnes & Noble and the Nook

Barnes & Noble is the largest book retailer in the United States and is the only brick-and-mortar vendor of e-books of the three largest e-book market participants. In addition to its website, the company at one time operated 705 retail bookstores and 636 college bookstores across the country.¹⁵² Barnes & Noble has claimed about 28% of the e-book business as of May 2011, putting it solidly behind the industry leader Amazon.¹⁵³

Barnes & Noble launched its eBookstore in July 2009.¹⁵⁴ The company then introduced its e-reader, the Nook, in late 2009. Nook in color was launched in October 2010 and was revamped in April 2011, providing users with access to email, web browsing, and a store with software applications.

The Nook operates with a touch screen, and its memory can accommodate up to 6,000 e-books. The Nook Color is currently priced at \$249.¹⁵⁵ Barnes & Noble advertises that Nook users have a reading selection of over 2 million books, with more than one million that are free and most of the rest priced at \$9.99 or less. Nook can be downloaded as an application for the iPad, iPhone, Android, Blackberry, PC, and Mac operating systems. However, owners of a Nook cannot purchase e-books from Amazon or Apple because neither vendor offers a version of its e-reader software for the Nook.

As a brick-and-mortar business, Barnes & Noble faces the challenge of avoiding the path to bankruptcy that its competitor Borders took. Analysts suspect Barnes & Noble has remained a player in the book industry because the company was aware of the pending digital shift: “They went in with both feet, quickly got a device on the market as opposed

¹⁵² Barnes & Noble. “Barnes & Noble Investors Page.” Found at: http://www.barnesandnobleinc.com/for_investors/for_investors.html.

¹⁵³ Cheng, Andria. “Barnes & Noble Shares Up on Buy Rating,” *The Wall Street Journal*. May 6, 2011.

¹⁵⁴ “Barnes & Noble Launches World’s Largest eBookstore.” July 20, 2009. Found at: http://www.barnesandnobleinc.com/press_releases/2009_july_20_ebookstore.html.

¹⁵⁵ Barnes & Noble. “Nook Color.” Found at: <http://www.barnesandnoble.com/nookcolor/index.asp?cds2Pid=35607>.

to picking someone to partner up with like Borders did, and when the firestorm in 2010 hit, they already had their device ready to go. Borders did not.”¹⁵⁶ An analyst at Forrester research thinks Barnes & Noble has a better than 50% chance of surviving the switch to digital if it becomes even more aggressive about its Nook business.¹⁵⁷ Analysts estimate there are currently about 2 to 2.5 million Nook users.¹⁵⁸ A Goldman Sachs analyst report forecasts Nook-related sales going from \$62 million in 2009, the year the Nook was launched, to an estimated \$1.16 billion in 2012.¹⁵⁹

iii. Apple and the iPad

Apple entered the e-book market in January 2010, when it released the iPad tablet and iBooks application.¹⁶⁰ This application lets users buy and download e-books from the iBookstore, which is fully integrated into the app, directly onto the iPad and then read the e-books on the iPad’s screen. When the iBookstore first opened, e-books were priced between \$8 and \$15. As of the unveiling, five of the largest publishers—Penguin, HarperCollins, Simon & Schuster, Macmillan, and Hachette Book Group—had content on the iBookstore.¹⁶¹

The iPad is not a dedicated e-book reader, but it can be used as one with Apple’s iBooks application, Amazon’s Kindle application, or Barnes & Noble’s Nook application. However, the iBooks application is compatible with only the iPhone, iPod touch, and

¹⁵⁶ Mangalindan, JP. “Why Barnes & Noble Should Go from Bookstore to Nookstore,” CNNMoney. April 13, 2011. Found at: <http://tech.fortune.cnn.com/2011/04/13/why-barnes-noble-should-go-from-bookstore-to-nookstore/>.

¹⁵⁷ *Ibid.*

¹⁵⁸ Cheng, Andria. “Barnes & Noble Shares Up on Buy Rating,” The Wall Street Journal. May 6, 2011.

¹⁵⁹ Mangalindan (2011).

¹⁶⁰ Dolcourt, Jessica. “Apple iBooks e-reader: First Take.” January 27, 2010. Found at: http://reviews.cnet.com/8301-19512_7-10442855-233.html.

¹⁶¹ Michaels, Philip. “iPad to Feature Apple’s iBooks e-reader App,” Macworld. January 27, 2010. Found at: http://www.pcworld.com/businesscenter/article/187897/ipad_to_feature_apples_ibooks_ereader_app.html.

iPad.¹⁶² Apple claimed that as 2011 owners of the iPad had downloaded over 1.5 million e-books from the iBookstore.¹⁶³

D. HOW WILL THE EMERGENCE OF E-BOOKS IMPACT PUBLISHERS?

Between 2002 and 2008, the book industry saw annual sales growth of just 1.6%, and profit margins were shrinking. Publishers had slashed expenditures, laying off editors and publicists and becoming more cautious with unknown writers. In 2009, however, the e-book business began to show signs of great promise. Despite accounting for only 3% to 5% of the market, sales of e-books had increased 177% from the previous year, and analysts forecasted e-books would soon account for 25% to 50% of all books sold.¹⁶⁴

As noted previously, Amazon's Kindle is the leader in e-book sales. In 2009, Amazon was purchasing many e-books from publishers for about \$13 and selling them for just \$9.99, taking a loss on each book to gain market share and encourage sales of its e-reader, the Kindle. By the end of that year, Amazon's sales of e-books accounted for 80% of total e-book sales, and \$9.99 was the established price of an e-book. Publishers panicked, fearing such low prices would decimate their profits. David Young, the CEO of Hachette Book Group USA, said, "The big concern—and it's a massive concern—is the \$9.99 pricing point. If it's allowed to take hold in the consumer's mind that a book is worth ten bucks, to my mind its game over for this business."¹⁶⁵ Generally, under this reseller model, the online bookseller pays the publisher 50% of the list price of the e-book, which then sells at retail for whatever price the bookseller chooses.¹⁶⁶

Publishers recognized the similarity between Amazon's strategy of discounting e-books to build market share in its e-readers and Apple's strategy of discounting music

¹⁶² Apple. iBooks Description. Found at: <http://itunes.apple.com/us/app/ibooks/id364709193?mt=8>.

¹⁶³ Carreiro (2010).

¹⁶⁴ Auletta (2010).

¹⁶⁵ *Ibid.*

¹⁶⁶ Authors Guild. "E-Book Royalty Math: The House Always Wins." February 3, 2011. Found at: <http://www.authorsguild.org/advocacy/articles/e-book-royalty-math-the-big.html>

downloads to build market share in its digital music players. As one publisher noted, “Get market share, and when you get far ahead it is hard to catch up. [Amazon’s founder] Bezos’s game, like [Apple’s founder] Jobs’s before him, is to get the device and get 80% to 90% distribution on the device, and you own the game.”¹⁶⁷ Thus, when Apple introduced the iPad in 2009 as a rival to Amazon’s Kindle, the industry became hopeful that iPad would create more competition in the e-reader industry and possibly spark more interest in e-books themselves.¹⁶⁸

In sum, publishers of e-books face lower costs of production as well as lower selling prices. Thus, it remains to be seen how publishers’ profits will be impacted by the introduction of e-books. Over the last few years, the industry has seen decreasing sales of physical books and increasing sales of e-books. However, it is unclear whether sales of e-books represent shifted sales of physical books or new sales driven by sales of e-readers that piqued consumer interest. It is also unclear how higher profit margins applied to lower list prices of e-books will compare with low profit margins applied to high list prices of hardcovers.

E. HOW WILL THE EMERGENCE OF E-BOOKS IMPACT AUTHORS?

Technological advances have allowed authors to cheaply or freely create and distribute their work without the publishers, editors, or printers.¹⁶⁹ Popular self-publishing packages include Amazon Digital Text Platform (DTP), Lulu, Barnes & Noble’s PubIt!, FastPencil, Publish Green, Scribd, and Smashwords. Amazon was the first major market player to cater to self-publishers. It offered DTP in January 2010, announcing that it would provide authors with a 70% share of the sales of e-books for Kindle customers.¹⁷⁰

¹⁶⁷ Auletta (2010).

¹⁶⁸ Senior, Antonia. “Can Apple’s Jesus Tablet deliver a miracle?” *The Times*. January 22, 2010. *See also*, Auletta (2010).

¹⁶⁹ Elliott, Amy M. “(R)Evolution in the Information Industry: What the Information Industry Can Learn from the Music Industry,” *Library Faculty Publications and Presentations*, The Albertsons Library, Boise State University. January 1, 2010, pp. 6-7.; Rosenbloom, Stephanie. “Would You Sign My Kindle?,” *The New York Times*. April 13, 2011.

¹⁷⁰ Carreiro (2010).

In return, authors had to agree to prices between \$2.99 and \$9.99. One irate publisher fumed that the offer was intended to “pit authors against publishers.”¹⁷¹

The self-publishing company Lulu advertises “free one-click publishing on the iBookstore,” and boasts that there are three easy steps to creating an e-book: uploading the file, choosing the e-book options, and publishing and selling. Lulu’s homepage encourages authors to self-publish e-books by contending that “authors who offer both print and e-book editions sell 30% more than authors with print only.”¹⁷² Authors selling e-books on the iBookstore through Lulu will earn \$5.59 for every \$9.99 e-book they sell. Apple takes a 30% commission on all sales, the author receives 56%, and Lulu takes the remaining 14%. When an author sells e-books through the company Smashwords, the author receives 60% and Smashwords receives 10%. Barnes & Noble has set the royalty rate for authors at 65% of the sale price for titles listed between \$2.99 and \$9.99. The rate falls to 40% if the price is below \$2.99 or above \$9.99.¹⁷³

Ian Freed, the Amazon vice president in charge of the Kindle, speaks to the success of the self-publishing model. He notes that many authors are enticed by the 70% royalty option and that there are more self-published books available on Amazon since the self-publishing option was made available in 2007.¹⁷⁴

One example of an extremely successful self-publishing author is Amanda Hocking, who sells her novels as digital downloads for \$0.99 to \$2.99 on online bookstores and makes an estimated \$2 million a year.¹⁷⁵ She turned to selling her books electronically when she was unable to find a traditional publisher willing to work with her. She went from selling

¹⁷¹ Auletta (2010).

¹⁷² “Lulu-Home Page,” Lulu.com. Found at: http://www.lulu.com/publish/ebooks/?cid=nav_ebks.

¹⁷³ Carreiro (2010).

¹⁷⁴ Carnoy, David. “Amazon: We have 70-80 percent of e-book market,” August 2, 2010. Found at: http://reviews.cnet.com/8301-18438_7-20012381-82.html.

¹⁷⁵ De Leon, Don Michael Acelar. “The Future of Publishing: Novelist Makes a Fortune Selling Kindle eBooks.” March 1, 2011. Found at: <http://www.psfk.com/2011/03/the-future-of-publishing-novelist-makes-a-fortune-selling-kindle-ebooks.html>.

hundreds of copies of her books in May 2010 to 450,000 copies in the month of January 2011 alone, making it into the top 50 of USA Today's Best-Selling Books list.¹⁷⁶ For every \$2.99 book she sells, she keeps 70%, with the rest going to the online bookseller. She keeps 30% for every \$0.99 book she sells.¹⁷⁷

Though an appealing option, self-publishing is unlikely to be the most advantageous path for all authors. When an author forgoes working with a publisher, he assumes the jobs of editing, design, and marketing himself. Another downside to self-publishing is that some brick-and-mortar vendors, like Barnes & Noble, do not stock self-published books and traditional media outlets do not review them. In addition, there is still the stigma in the publishing industry to self-publishing, where one is deemed to not be a "real author" if one is not working with an established publisher.

In light of authors' option to self-publish, publishers are now attempting to define their relevance in the digital world. Carolyn Reidy, the CEO of Simon & Schuster, said her foremost goal was "to prove our worth to authors every day."¹⁷⁸ The CEO of HarperCollins, Jane Friedman, observed, "The publishers are afraid of a retailer that can replace them. An author needs a publisher for nurturing, editing, distributing, and marketing. If the publishers are cutting back on marketing, which is the biggest complaint authors have, and Amazon stays at 80% of the e-book market, why do you need the publisher?"¹⁷⁹

V. CONCLUSION

In this paper, we have focused on three key copyright-driven industries: music, film, and books. In each industry, we first discussed the stages of the traditional supply chain. Second, we discussed the effects of digitization on that traditional supply chain, focusing

¹⁷⁶ Memmott, Carol. Authors Catch Fire with Self-Published e-books, USA Today. February 9, 2011.

¹⁷⁷ *Ibid.*

¹⁷⁸ Auletta (2010).

¹⁷⁹ *Ibid.*

on how digitization has radically reduced distribution costs, while simultaneously increasing the potential for piracy of content. Third, we provided a brief history of how new business models for the distribution of content in each industry have fared thus far. Finally, we considered how the intermediaries and the artists are likely to fare under the new regime. Below, we conclude with a series of research questions that might be pursued to obtain a better understanding of how these different industries will evolve over time.

A. MUSIC:

- Will traditional record companies be able to prosper as content-providers rather than distributors?
- What legal solutions to copyright infringement can the music industry afford to pursue?
- What DRM solutions are available? Which DRMs are most user-friendly?
- Are new copyright schemes (e.g., compulsory blanket licenses) necessary to address the legal issues presented by digitization and the internet?
- To what extent will the music industry be able to leverage or bundle associated goods to increase profits?
- What new channels are there for marketing and promoting of music?
- Will advertising revenues for streaming content increase? Will they be sufficient to fund free content?
- What are the prospects for smaller or independent music labels?
- How will changes to the music industry affect the role of composers and performers?
- What new entities will emerge as the equivalent of talent scouts in the music industry?

B. FILM:

- Will traditional film studios be able to remain profitable as their power over the distribution function declines?

- What legal solutions to copyright infringement can the music industry afford to pursue?
- What DRM solutions are available? Which DRMs are most user-friendly?
- To what extent will consumers view internet downloads of movies as a substitute for going to the movie theater?
- Will consumers continue to demand physical copies of films, say, through film kiosks or subscriptions to Netflix' DVD rental service?
- Will advertising revenues for streaming content increase? Will they be sufficient to fund free content?
- How will cable and television channels remain competitive in a world of streaming video content?
- Will advertising-based services continue or will they shift to paid models? Will we see the evolution of "basic" and "premium" content in the area of online film and video, as we see in the broadcast and television industries?
- What prospects are there for independent film producers to prosper in the digital age?
- What other entities, if any, will contribute the promotion and marketing of films?

C. BOOKS:

- To what extent will consumers view e-books as a substitute for traditional books?
- Will consumers continue to demand traditional books, say, through Amazon or bookstores?
- How will changes to the publishing industry affect the role of authors? Will self-publishing continue to increase in popularity?
- What new entities will emerge as the equivalent of talent scouts in the publishing industry?
- What new channels will emerge for marketing and promoting books?
- Under what conditions will the market for e-books continue to be closely tied to the market for e-readers?

- How would the introduction of “open source” e-books that are compatible with any e-reader affect the marketplace?
- What are the best options for dealing with piracy?
- What are booksellers’ best options for dealing with libraries?

VI. WORKS CONSIDERED

For a detailed list of works considered, please see attachment.