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AN EXAMINATION OF THE EFFECTS OF BROADBAND AND DIGITAL TECHNOLOGIES ON THE DISTRIBUTION AND EXHIBITION OF MOTION PICTURE AND TELEVISION CONTENT

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INTRODUCTION

The Importance of Technology

The media industry is in the midst of radical transformation with broadband and digital technologies playing the starring roles in how movies and television series are created, distributed, and ultimately consumed by audiences.

At their core, technologies are meant to be tools used to achieve human goals. New technologies have always been at the forefront of industrial and societal change since they impact not just how we achieve goals, but also what goals we choose to achieve, thereby fueling opportunities for human beings to reach higher and accomplish more.

As film historians David Bordwell and Janet Staiger argue, developments in technology serve one or more of three basic functions in any industry: production efficiency to augment economics, product differentiation to foster novelty, and adherence to standards of quality to align with accepted aesthetic norms (Bordwell 474-475).

With the agricultural revolution around 10,000 BC, farming technologies created profound production efficiencies to enable surplus food production, which moved our species from hunter-gatherer societies into ones of agriculture and settlement. This led the way for the birth of the first cities and the support of larger populations.
The industrial revolution of the 1700s and 1800s spurred the transition from hand tools to machine manufacturing, the large-scale production of steel, and the evolution of water and steam power, all of which propelled human civilization forward dramatically. This explosion of technological innovation rippled through every facet of culture from construction to textiles to mechanized food production. These efficiencies played a crucial part in influencing stagnant incomes to rise and standards of living to improve, which aided in growing a middle class and increasing life expectancy.

Advances in technology fundamentally changed the way people lived, which in turn created demand for other types of products and technologies. The mass production of crops and livestock, for example, spurred demand for transportation infrastructure like railroads to distribute goods across large geographic areas. These new geographic nodes fueled a demand for other localized products, services, and technologies such as insurance, banking, and utilities.

As technology empowers human beings, it enables more efficient processes, fueling subsequent technological demand and innovation for entirely new modes of operation. This progress occurred dramatically with the agricultural and industrial revolutions and is currently underway with the digital revolution — the process of analog, mechanical technologies evolving
into their digital, computerized counterparts — which is creating new capabilities that are both driving and steering an explosion of activity.

The Digital Revolution

 Though the roots of the digital revolution can be traced back to 1947 when the invention of the transistor launched the era of advanced computing and electronics, it was not until the 1970s with the creation of integrated logic circuits and microprocessors that the true genesis of the digital revolution occurred (Isaacson). This was a substantial development in the history of technology as it allowed computers to be miniaturized and embedded into objects.

 This new revolution began in the service of the previous revolution as business machines accelerated and modified industry, but very soon gave birth to its own phenomenon with the invention of personal computers. No longer were computers exclusive to government and institutional use but were now accessible to the masses, which forever altered the paradigm of how information could be created, stored, disseminated, retrieved, and manipulated.

 Microprocessors and the miniaturization of computer storage paved the way for other technologies such as pocket calculators, digital clocks, cellular telephones and video game consoles. In each case, the change from
analog to digital not only improved the processes already in existence but also spawned new processes and entirely new products and modes of interaction.

Throughout the 1980s the adoption of personal computers rose steadily, with nearly one in three U.S. households owning a personal computer by 1989 (Newburger). Concurrently, a major digital shift was occurring in the business world as companies evolved from typewriters and analog recordkeeping to computerized word processing software and electronic databases.

Personal computers, like other technological innovations, empowered users. These users, however, were not manufacturers and business owners but a larger population previously defined by their consumption of products of industry. Data was now not just something to be accessed but something that could be manipulated, recombined, and repurposed into different types of information and content. The technological revolution was fast becoming an information revolution, as well as a social revolution involving genuine shifts in power equations.

This conversion from analog to digital was affecting not just the hardware and its corresponding outputs and storage, but also file transmission and networking technologies. This led to the birth of the World Wide Web in 1990 which introduced the world to the greatest distribution platform for information ever created. This ability to interconnect computers and share information was the start of the information age, launching human
beings into a new knowledge-based economy and society. What the Internet profoundly demonstrated was that the true power lies in the distribution of content, which could now be both authored and shared on a global scale.

Regardless of the technologies used to create a piece of media, the ability to then distribute that media nearly instantaneously through the power of a vast interconnected distribution web is one of the most significant advancements in human history. From the invention of the Gutenberg printing press in the 1400s that sparked the era of mass communications (Meggs 61) to the invention of the telegraph in the 1800s that ushered in telecommunications (Coe 14), new distribution technologies are integral in influencing advancements in human communication.

In fact, over the course of more than two decades since the invention of the World Wide Web, the innovations spurred by these groundbreaking technologies are numerous, including e-mail, instant messaging, social media, e-commerce, and online banking. These technologies involved the dissolution of the notion that distribution was just a one-way street. Hardware has also become smaller, more portable, and more powerful. Desktop computers transitioned into portable laptop computers, while cell phones evolved into smart phones and tablets.

Today, broadband and digital technologies have permeated nearly every facet of society and across nearly every industry, transforming the ways
people work, unraveling legacy business models, and altering how consumers interact with products and services. From publishing to finance to education to fashion, the world is becoming increasingly more digitized, connected, and interactive, with more and more control shifting to the end user.

The Digital Revolution in Content Post Production

While broadband and digital technologies are creating seismic shifts across numerous industries, this thesis endeavors to examine the specific effects these technologies are having in the motion picture and television industries. The motion picture and television content supply chain involves a workflow that begins with the creation of raw media with camera and audio recording devices (production), followed by the assembly of a narrative from those pieces (post production), the dissemination of the completed narrative (distribution), and its ultimate presentation to audiences (exhibition). The recent marriage of digital technologies and the Internet is having significant effects on content in the distribution and exhibition phases, though the front half of the supply chain – production and post production – has long been entrenched in the world of digital disruption.

For decades, the creation of filmed motion picture and television content remained largely unchanged, maintaining a consistent workflow of shooting on film stock and editing on film stock. Though this analog process
of working directly with reels of chemically-coated celluloid experienced improvements in production and post production technologies over the years, the overall mechanics — and, therefore, politics and economics — of filmed content creation remained relatively stable. Notwithstanding, the 1980s brought with it the first real drivers of what digital technologies could accomplish in an analog post production world: non-linear computerized editing.

Though invented in the 1970s, non-linear editing technology advanced significantly in the 1980s with systems such as Lucasfilm’s EditDroid, Ediflex, and AVID Media Composer. These technologies took the principles of mechanical editing and turned film stock into digital files, allowing these digital counterparts to be easily organized, assembled, and manipulated into a final edit without the destruction of the source footage.

When this final edit was complete, the actual film negative could then be physically cut based on these edit decisions, with color correction and other imaging effects still largely chemical processes done prior to the creation of film prints for theatrical distribution. Today, the post production process is routinely undertaken entirely within the digital realm. By 1985, 80 percent of filmed series on broadcast television were edited non-linearly, and a few years later the scales had tipped on the feature film side, transitioning from mechanized film editing to non-linear computerized editing (Jones; Herman).
A significant advantage of digital technology is in its binary language of zeroes and ones, which allows digital information to be easily replicated and manipulated almost instantaneously. This makes all-digital workflows advantageous since files can exist in an environment where the final output maintains the initial level of fidelity. This conversion of image information to a database of binary numbers carries the additional advantage of allowing algorithms to be created that can alter the image by addressing individual pixels.

Digital editing technologies proved to be a significant advancement in streamlining the post production process and in digitizing numerous image processing and manipulation tools. Moreover, these technologies paved the way for new visual narrative styles involving not just sequencing, but layering and compositing as well. The processes involved in digitizing footage brought with them advancements in video and image compression formats, graphics card technology, computer interfacing standards, and faster and higher-capacity file storage. Over time, as with any maturing technology, the costs of post production and image editing tools declined significantly, making them ubiquitous features of most personal computers and mobile devices today.
The Digital Revolution in Content Production

The seismic shifts in post production resulting from digital technologies soon began to be felt in raw footage acquisition as well. The development of workable digital video (DV) compression formats in the 1990s delivered more cost-effective tape stock and cameras. Filmmakers and news gatherers embraced this new digital videotape format, which was less expensive to shoot than film stock, and utilized camera equipment that was smaller and more portable. These factors fueled experimentation as content creators felt less restricted and began to shoot higher quantities of raw footage.

Digital video acquisition continued to advance, with High Definition (HD) tape formats invented initially for professional applications, and then eventually evolving into more cost-effective consumer formats. Today, acquisition systems such as RED cinema cameras offer resolutions far beyond High Definition specifications and even traditional 35mm film, storing footage onto digital storage drives and eliminating the need for content to ever enter the analog world of physical film or tape stock.

With the proliferation of digital still and video cameras, especially those embedded into phones and other mobile devices, footage acquisition technologies are accessible to more people than ever before, empowering a greater number of artists, storytellers, journalists, and filmmakers.
The Digital Revolution in the Nature and Aesthetics of Content

Ultimately the very nature and aesthetics of content have changed as production and post production technologies have evolved over time. The reduction of physical camera size, for example, has spurred shakier handheld cinematography, creating a different visual aesthetic than the fluidity of heavier mounted cameras. Moreover, with cameras embedded into mobile devices, tighter framing and talking head content has become a more commonplace visual style. This type of quick, short-form content is not only easy to shoot, but easy to manipulate with the proliferation of simple tools and algorithms found in software such as iMovie and Instagram.

The plethora of image manipulation algorithms has been an empowering development in content creation since amateur users can leverage the power of mathematics and automation to enhance their storytelling. Images that traditionally required optical filters and numerous pieces of expensive professional technology can now be accomplished digitally through software with the push of a button. An image with suboptimal exposure and color depth can now be instantly analyzed through algorithms to automatically produce a more professional aesthetic quality, and traditional chemical processes can now be simulated by digital filters to create stunning visual effects.
Though one could argue that the widespread use of automated algorithms in image manipulation degrades and impugns craft and technical expertise, these tools have birthed an entirely new craft and have ultimately enhanced storytelling. Technology has empowered storytellers to create content with an aesthetic quality that would formerly have been impossible without prohibitively expensive equipment and the technical acumen required to accomplish it. The almost infinite malleability of digital images has also encouraged the development of an entirely new visual aesthetic that is free of the limitations and costs of the film stock process.

Content is still all about storytelling, however, and technologies exist only to enable storytellers to realize the stories they endeavor to tell. Great images do not always correlate to great content. While form describes the means by which content is communicated, and tools are necessary to realize form, the ideas — the essence of what is being communicated — remain paramount to great storytelling. While much of the same storytelling language remains similar to what existed decades ago — such as camera angles, framing, and movement — the convenience and economics of digital technologies have naturally spawned different storytelling conventions, approaches, and grammars.

Returning to David Bordwell’s position that developments in any technology serve one or more of three basic factors: 1) production efficiency
(economics), 2) product differentiation (novelty), and 3) adherence to standards of quality (aesthetic norms), digital video has better served the economics of production over traditional celluloid for most of its existence. For just as long, however, the debate regarding digital video’s aesthetic parity to celluloid has been fiercely contested.

Celluloid had traditionally been approached as the superior artistic medium for its higher resolution, contrast range, and color depth, as well as its dreamlike aesthetic partly attributed to the motion blur of its lower frame rate. It also carried the cachet of being only available to the professional elite due to the cost of all aspects of film production.

Video, on the other hand, is a medium that has traditionally been viewed as too sharp and crisp, devoid of the grain found in celluloid, and having a much smoother “real life” aesthetic with its higher frame rate. It also carried a stigma deriving from its use by amateurs and segments of the production world with less need for the highest of production values, most notably broadcast entities. Moreover, the distribution and delivery channels for these practitioners were themselves so limited relative to theatrical projection that high definition quality acquisition was not the highest priority.

While digital video has better served the economics of production, it has only been within the past decade that the advancement of production values in digital video has made it a viable alternative to the celluloid
aesthetic. Scripted storytelling formats traditionally shot on celluloid have rapidly migrated to digital video technologies, which have also engendered a flowering of a wide range of different narrative forms, from experimental documentary to vlogs (video web logs) to reality television series.

Before the wider acceptance of digital video acquisition for motion picture and premium television content, numerous post production algorithms existed with the sole purpose of mimicking the aesthetic norms of celluloid in video footage such as grain, motion blur, and scratches. Today, movies and television series are shot almost exclusively on digital video formats. Celluloid has become a niche medium reserved for larger format footage acquisition — such as IMAX — and an ilk of filmmakers like J.J. Abrams, Christopher Nolan, and Quentin Tarantino who evangelize its unparalleled artistic virtues (O’Falt).

Digital video, therefore, was now also able to serve another of Bordwell’s three factors: the adherence to a standard of quality and aesthetic norm once traditionally reserved only for celluloid. In turn, a separate digital video aesthetic has developed that breaks the bonds of the technological limitations of film and proposes an entirely new technical standard of image quality.

Traditional filmmaking borrowed conventions from live theater, utilizing wide, static framing with minimal cutting, which continued with the
invention of widescreen formats in the 1950s (Gazetas 17). Television’s smaller aspect ratio and reduced resolution encouraged a grammar of closer framing and more frequent cutting between shots. Economically, it was more cost-effective to film long continuous shots in movies since they required fewer camera angles and setups, as well as less time to physically cut the film reels in post production. As an electronic medium, video was less expensive to shoot than celluloid and easier to assemble.

With the economics of production simplified with digital video, content creators are able to shoot significantly more raw footage in relation to the final edit. It can be argued, therefore, that this higher shooting ratio affords a substantial level of content authorship in the post production process as opposed to the moment of actual footage acquisition. Unlike the static nature of shooting an entire scene in one continuous take, the ability to inexpensively shoot a large volume of footage in the digital realm affords a greater level of story sculpting in post production, from extensive cinematography and image manipulation to the meticulous crafting of an actor’s entire performance.

The higher shooting ratios afforded by these digital video technologies have influenced an altered narrative style constructed with more frequent cutting, with shot durations becoming increasingly shortened. These higher shooting ratios have also been beneficial to certain content types, such as
comedies, that rely more on adlibbing from actors and production environments that frequently go off script.

In the 2015 film *Mad Max: Fury Road*, for example, 480 hours of digital footage was shot in order to assemble a final two hour cut (Gray). At a shooting ratio of 240:1 this far surpassed typical feature films shot digitally at 25:1 or those shot on celluloid at 12:1. The 1979 film *Apocalypse Now*, shot entirely on celluloid, finished with a shooting ratio of approximately 100:1 and represents one of the highest shooting ratios of any film in history (Koppelman 71). Documentary films usually involve much higher shooting ratios given the more unpredictable nature of footage acquisition, while animated feature films usually yield the lowest since every frame must be physically animated.

Manohla Dargis, chief film critic of the New York Times, argues that increased cutting and image manipulation in the digital world is “changing the integrity of the shot,” (Dargis) though I would submit that visual storytelling is an amalgamation of numerous elements that are manufactured together to create a string of emotional responses. Whether the vast majority of the elements encompassing a final shot occur within the acquisition or post-production realms is largely a matter of authorship philosophy. If advances in technology provide greater choice, then the process by which a media author
approaches content should be conducive to whatever best serves the storytelling.

The Digital Revolution in Content Distribution and Exhibition

While digital technologies have substantially impacted the first two pieces of the content supply chain — footage acquisition and post production — it is the combination of both digital technologies and the Internet that has set the stage for transforming the final two pieces: distribution and exhibition.

Indeed, to understand where the motion picture and television industries are headed in the future, it is crucial to understand how these technologies have evolved over time to shape the media world of today. I will first examine the key historical events that have led to the current state of the media landscape, most notably the impacts of time-shifting, high speed Internet, and mobile media devices.

Next, I will explore likely outcomes for the motion picture and television industries over the next decade as theatrical motion picture distribution and exhibition continues to shift to new video-on-demand (VOD) models, and television transitions to smaller cable subscription bundles and direct-to-consumer à la carte offerings.

Overall, the effects of broadband and digital technologies on how content is ultimately distributed and exhibited are causing the most profound
seismic shifts in the history of media and will radically transform the motion picture and television industries in the future.

**DISTRIBUTION & EXHIBITION: PAST & PRESENT**

In the current media landscape, audiences are rapidly changing their expectations of content, demanding it be available wherever and whenever they want, and on any screen they choose to consume it. Digital delivery and exhibition of content are having significant technological, social, and economic implications in the media industry as the landscape becomes more fragmented and personalized. While traditional content distribution and exhibition were limited to movie theaters and live television, online distribution has allowed audiences a wide variety of ways to access and interact with media.

These newer modes of contact are allowing instant access to movies and television series on demand, and across a variety of screen sizes. Notable examples include online streaming and download services such as Netflix and Hulu; download/upload services like YouTube and Vimeo; mobile devices such as iPhones and tablets; internet-connected television devices like Apple TV and Chromecast; and videogame consoles such as PlayStation 4 and Xbox One. As a whole, digital technologies are causing increased competition for consumers’ time and wallets, forcing traditional distribution and exhibition methods to adapt or become less and less relevant.
Three fundamental paradigm shifts in the history of distribution and exhibition have allowed the current state of the media business to exist: 1) time-shifting of scheduled content, 2) mobile media devices, and 3) the rise of high speed Internet.

The first paradigm shift to occur in this narrative was the time-shifting of scheduled content, the impetus of which was the invention of the Video Cassette Recorder (VCR) in the 1970s. Before examining the effects of the VCR, however, it is important to first explore how the motion picture and television industries operated for decades — before the possibility of time-shifting — as ecosystems of scheduled viewings and exhibitions.

**Motion Pictures and Television Before the VCR**

The media business has always functioned on the principle of scarcity (Christophers 138). For most of the twentieth century, audiences had very limited control of what was created and how, when, and where they could interact with media. The content that ended up being created was tightly guarded by a handful of powerful content creators through distribution networks that were strategically controlled.

The media business operated successfully by controlling the types of content created, where it was distributed, and when and how it could be consumed. Media consumption, therefore, was predicated on the scarcity of
live and first-run exhibition. To watch a motion picture or listen to a radio program, for example, audiences needed to be present for a scheduled exhibition; one could not simply record it for later viewing or access it on demand.

With the birth of the motion picture industry at the turn of the twentieth century, an experience was provided that simulated live theater. Like a live play, movies ran in auditoriums with scheduled exhibitions, with large screens replacing raised stages. The content providers exercised complete control over where and when these experiences could be found.

Moreover, the theatrical experience capitalized on the power of shared, collective escapism. Movie tickets were also relatively inexpensive, making it an entertainment option for the masses. In fact, the movie business in the United States peaked in the early 1930s during the Great Depression, garnering 80 million average theatrical admissions per week, which accounted for nearly 65 percent of the United States population (Krevolin 159).

Core to the distribution and exhibition mechanisms of the movie business at the time was vertical integration, with The Big 5 major studios (Fox, Loew’s, Paramount, RKO, and Warner Bros.) each controlling not only their own production studios, contracted talent and distribution operations, but their own exhibition businesses as well across an expansive network of theaters. From the introduction of sound in 1928 — which transitioned
Hollywood out of the silent era — to the late 1940s after World War II, this vertically-integrated operation defined the Golden Age of Hollywood.

In 1948, however, it was ultimately ruled in the landmark case of *United States v. Paramount Pictures, Inc.* that vertically-integrated Hollywood studios controlling their own exhibition and theater chains was illegal and in violation of the antitrust laws of the United States. This effectively ended the studio system, with the major studios forced to sell their theater chains and causing significant disruption to the distribution and exhibition of motion pictures.

Around this time, after reaching another peak in theatrical admissions, the theatrical movie business started a rapid decline in the 1950s and 1960s, spurred by the invention and mass adoption of television (Bohn 236). As with any new technology, there is ultimately disruption to legacy technologies and established businesses. In 1950, 3.9 million households in the United States owned a television set, which surged to 30.7 million households just five years later (Monaco 56).

The ease and convenience of television viewing proved a significant entertainment competitor for the audience’s attention, and resulted in a decline in the appetite for the event style experience of attending a screening in a theater. From 1944 to 1964, weekly theater admissions plummeted from nearly 65 million to fewer than 20 million, despite the United States
population growing from 138 million to 192 million (Cowden; U.S. Census Bureau).

This model of movies only being accessible in theaters began to change in the 1950s as older titles started to be syndicated on broadcast television. Though this content still needed to be viewed according to a prescribed schedule, audiences were nonetheless given access to an increasingly expanded library of media across a handful of networks, and with added convenience.

The availability of multiple simultaneous entertainments allowed a greater sense of flexibility and control, with technology starting to afford audiences easier access to media in the comfort of their own living rooms. Now library runs of *Gone With the Wind* could be viewed on a television set without the need to travel to a theater, and multiple runs ensured greater flexibility with other audience time commitments.

This was also the first time that motion pictures were exhibited in a format other than film stock and in a venue other than a traditional theater. Television distribution technologies allowed content owners to exploit and monetize existing media in ways that had never been done before.

Television’s primary role is to deliver audiences to advertisers through the use of programming that those audiences will feel compelled to watch. This integration of advertising within content was a borrowed monetization
strategy from the radio industry, which was a departure from the pay-per-view nature of the movie business.

This continued in the 1970s with the introduction of cable television which, in its early years, was little more than a repository of old movies and re-runs of older television series. As Marshall McLuhan stated, the content of every new medium comes from a previous medium: “the content of a movie is a novel or a play or an opera” just like the “content of writing or print is speech” (McLuhan 38). The content of cable television, as a new medium, initially borrowed its content from prior media: film and broadcast television.

Cable television brought with it the promise of offering significantly more channels than traditional terrestrial broadcast could manage at a fidelity that over-the-air television transmission could not match. No longer was television restricted to just a handful of broadcast networks. Despite a wider array of programming options, there was resistance by many consumers to the idea of pay television since broadcast television had been free of charge. As the Internet would demonstrate years later with online content, consumers were able to see sufficient value in the cable model to begin paying for media that was traditionally free.

Most importantly, what cable television afforded audiences was choice, and with choice came increased personalization as an expanded range of programming options allowed viewers to create their own customized, virtual
channel lineups. There existed a rigidity to the theatrical movie business that could not match the fluidity and immediacy of television, which was exacerbated by the explosion of cable programming.

This personalization was taken a step further with the invention of remote control technologies. Though a relatively simple device, it afforded audiences even more control of their television viewing experience by allowing easy switching between channels and the ability to avoid commercials. Though invented by Zenith in the 1950s as initially a wired remote, the cumbersome nature of traversing wires in a living room led to the invention of wireless infrared remote controls shortly thereafter.

Up to this point, viewers could still only watch movies and television series in a scheduled environment. This was about to change, however, when the invention of VCR technology finally allowed audiences the ability to record their media for later playback. This birth of time-shifting started a profound ripple effect that is one of the key driving behaviors of media consumption today.

**VCRs - The Birth of Time-Shifting**

The recording of audiovisual material on magnetic videocassette tape dates back to the 1950s with the invention of professional Video Tape Recorders (VTRs) that freed broadcasters from the dependence on live
performance. This process advanced further in the 1970s with the consumer availability of Videocassette Recorders (VCR). While VCR technology evolved over several years by a variety of consumer electronics companies, it was not until the late 1970s that VCRs hit a mass-market appeal sufficient to cause a rapid acceleration in adoption.

At the time, two dominant videocassette formats existed in the marketplace: Sony’s Betamax and JVC’s VHS (Video Home System). Though similar, the quality of Betamax was technically superior to VHS and the tape cassettes were a smaller physical size. VHS cassettes, however, afforded longer recording times and were less expensive. Notwithstanding, the average consumer could not discern the difference in visual quality between the two formats and JVC’s VHS format ultimately won the mainstream format war. By 1980, only 1 percent of U.S. households owned a VHS-format VCR, though penetration surged to 69 percent by 1990 (Television Bureau).

VCRs were a substantial force in the media business since they empowered audiences to have greater control of their viewing experience, allowing them to record films and television series for later playback on demand. No longer did one need to be present at 9 o’clock on a Monday night to watch a scheduled telecast of *M*A*S*H* or a feature film. This profound technology began to alter audience behavior and constituted a major power
shift in their relationship with media, sowing the seeds for Digital Video Recorder (DVR) technologies two decades later.

This ability to time-shift scheduled television programming was the primary impetus for VCR ownership in the late 1970s and early 1980s. A byproduct of VCR technology, however, was the creation of a home entertainment market. Video rental businesses were born, allowing additional distribution and monetization opportunities for motion pictures outside of their primary theatrical windows. The first video rental store opened in Los Angeles in 1977, and by 1985 more than 15,000 video rental stores existed in the United States (De Atley). In the latter part of that year, Blockbuster Video was born in Dallas, which rapidly became the largest video rental business in the country.

Since studios sold copies of pre-recorded cassette tapes of motion pictures to rental stores for roughly $100 each, the rental business became a lucrative revenue stream for studios over time, even surpassing theatrical box office grosses in 1987 (Herbert 17-18). Physical video sales (sell-through) also became part of the equation, with consumers now able to purchase pre-recorded videocassette copies of their favorite films.

Although VCRs were still predominantly used to record live television, the technology was perceived by Hollywood as a significant threat, with studios arguing that copying content infringed copyright laws and fueled
content piracy. Once a piece of content was recorded, that physical copy could then be shared between individuals, eroding the necessity to purchase a legitimate copy.

Meanwhile, the music industry was more entrenched in the business of transactional sales since that was a cornerstone of its business model for decades. The movie and television businesses had always operated in a much more restrictive distribution and exhibition system that was less about content ownership and more about content access. A theatrical admission, for example, afforded one the ability to watch a movie “live” with no right to physical ownership, while television was a “live” stream that one could only access.

The paradigm of owning copies of these works was a game-changing mindset that fueled the creation of technology that could both play back pre-recorded cassettes and record live television programming on blank cassettes. These capabilities meant that the VCR was a direct risk to home entertainment rentals and sales.

In 1982, before the House Judiciary Subcommittee in Washington D.C., Jack Valenti, president of the Motion Picture Association of America (MPAA), testified that “the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone.” At the time, 67 percent of VCR owners owned no pre-recorded cassettes and 48 percent had
never rented a pre-recorded cassette. The major source of content on VCRs was home-recorded material, which negated the need to purchase pre-recorded cassettes, and bypassed a potentially lucrative revenue stream for studios (Nmungwun 211-213).

A few years prior to Mr. Valenti’s testimony was the landmark case of *Sony Corp. of America v. Universal City Studios, Inc.*, most colloquially referred to as the “Betamax Case.” The decision, handed down by the Supreme Court of the United States, ruled that recording individual copies of television shows for the purposes of time-shifting was not a form of copyright infringement. This case popularized the concept of fair use and also established that manufacturers of recording technologies could not be held liable for infringement. Though this pivotal ruling was handed down a few years prior, Jack Valenti’s subsequent statements to Congress distilled the growing concern among content creators that the growth of VCR adoption would destroy the economics of the media business regarding rentals, sell-through, and even cable television subscriptions.

These fears, however, proved unfounded. In fact, VCRs did more to help than hurt the motion picture and television industries. Consumer desire to purchase pre-recorded cassettes of films rather than record them at home increased as sales prices decreased, causing video sell-through to rise as consumers amassed their own film libraries at home. Additionally, movies
airing on television were the most commonly-recorded type of content, which fueled cable subscriptions. VCRs didn’t cannibalize cable subscriptions but rather complemented them. In fact, households with a VCR were twice as likely as non-VCR owners to also subscribe to cable (Nmungwun 211-213). VCRs proved to be a technology that ultimately augmented the media business.

Most importantly, VCRs continued to evolve the idea of media personalization. Time-shifting scheduled content was on the rise in not only the television industry but in the music industry as well with the invention of portable cassette players and audiocassette recorders. Music from a scheduled broadcast on the radio could be easily recorded, mix tapes could be created, and the added capability of playing music on demand through a portable device further unshackled audiences from the restrictions of traditional media distribution and exhibition.

The paths of Hollywood studios, deregulated telecommunications companies, and consumer technology firms in Silicon Valley and abroad converged more and more, fueling the continued globalization of media at a rapid pace. By the end of the 1980s, the practice of time-shifting was firmly established in mainstream media culture. The magnetic reel-to-reel tape technology that allowed the possibility of this type of consumption behavior to exist, however, fell prey to the digital revolution as well with the invention
of digital disc formats, first with audio and music, and then ultimately with video.

**DVDs – Videotapes Evolve Into Digital Discs**

In the late 1980s, the music industry started shifting to compact discs (CDs) as an optical digital storage format to store audio files for distribution, which gradually replaced the traditional analog formats of vinyl records and audiocassette tapes. CDs offered high fidelity digital audio that was less affected by the shortcomings found in legacy analog audio formats such as dust, scratches, warping, age and generation loss — the degradation of quality from master to copy. Moreover, navigating a CD was easier than a vinyl record or an audiocassette given the near immediacy and precision of selecting a specific track or location.

CDs naturally spawned optical disc formats for video such as Laserdisc, Video CD, CD Video, Multimedia Compact Disc (MMCD), and Super Density (SD) Disc. Though none of these formats were widely adopted, the Digital Video Disc (DVD) format was eventually born in 1995 as a marriage of technologies from MMCD — backed by Sony and Toshiba — and SD, backed predominantly by JVC.

Not wanting to wage another format war akin to what occurred in the videocassette world with Betamax and VHS a decade earlier, these companies
unified to create a single optical video disc format. Similar to the benefits of the analog to digital revolution in the music industry, the transition from magnetic analog videocassette tapes to their optical digital disc counterparts delivered higher audio-video fidelity, were less prone to the physical shortcomings found in videocassettes, and were easier to navigate. Most importantly, however, DVDs were also interactive.

This interactivity was a revolutionary aspect of the media experience that had been impossible in the linear storage of reel-to-reel videocassettes. DVDs, by their very nature, could be accessed in a non-linear way, with graphic menus used to easily navigate the content and instantly jump between chapters. This allowed one to effortlessly author their own experience of the narrative, which marked another major step in the shift of control to the audience. Though the VCR also afforded one the ability to navigate through linear content, the DVD simplified the process substantially, providing near immediacy in the audience’s decision making process.

Additionally, since significantly more video content could be stored on a DVD than on a VHS cassette, bonus material could now be included such as behind-the-scenes features, trailers, interviews, and image galleries. Just changing the distribution technology radically changed the nature of the content, as more storage space and interactivity created a thirst for special features. This type of interactivity was also present in the earlier format of
Laserdisc, though proved to be too cost-prohibitive for mainstream adoption since the price point was approximately $100 per disc.

Not only did DVDs provide higher quality audio and video than VHS cassettes, but they were cheaper to produce and could employ digital anti-piracy protections. Discs retailing for only $20 to $25, coupled with an improved user experience, caused a rapid adoption of DVDs, with studios embracing this enhanced format for home entertainment distribution.

DVD players became available for consumer purchase in early 1997. By 2000, 10 percent of U.S. households owned a DVD player. Adoption rose rapidly over five years, with nearly 65 percent of U.S. households owning a DVD player by 2005 (Kirsner). By June of 2003, DVD sales and rentals surpassed VHS for the first time ever, and in 2004-2005, electronics retailers Circuit City, Best Buy, and Walmart started to discontinue sales of VHS cassettes in favor of the more popular DVD format (Chediak).

DVD players also evolved into not just players but recorders as well, which offered complete digitized replacements for the VCR. Standalone DVD players capable of recording television content, however, remained costly because of low demand. DVD players and VCRs coexisted in the home for very different purposes, with the vast majority of consumers continuing to record television content on VHS cassettes for later playback. Even with the proliferation of DVD recording drives built into computers, the primary use
for such devices was as a high capacity data storage format or as a duplication
method for pre-existing DVD discs.

With the rise of Internet usage, along with the compact size and
portability of DVDs, it was inevitable that a new media service would soon
arrive that would marry these two technologies, radically altering the
landscape of the home entertainment business in the process.

**Netflix – Marrying the Internet With Home Entertainment**

The arrival of the World Wide Web in 1990 would quickly begin the
process of indelibly weaving the Internet throughout our daily lives, helping
fuel the present state of the media world. The early World Wide Web at the
start of the 1990s possessed only sufficient bandwidth for rudimentary
webpages that were much less media-intensive than the environment we
consume today and, thus, more presentational than interactive.

As a distribution platform for information, the seeds were sown that a
potentially limitless amount of information from anywhere on the planet
could be quickly accessed from the comfort of one’s personal computer at
home. Not only could other people’s content be accessed, but anyone could
now be a content creator, manufacturing their own webpages to share with
the world. Information could now be a two-way street, which changed the
very nature of communication. The general population was quick to adopt e-mail, instant messaging, weblogs, and chat rooms.

Over time, consumers also became increasingly more comfortable transacting business through the Internet, from online banking to purchasing products through online marketplaces like eBay and Amazon. The World Wide Web afforded a level of convenience and, in many instances, cost savings that brick-and-mortar equivalents could not match. This behavior paralleled the evolution of mass media as consumers took control of the availability of products just as they had wrested the reins from the grip of traditional media distributors, deciding what, where, and when they could access products and media alike.

This evolving consumer behavior played a central role in the development of a company in the late 1990s that would prove to be a major disruptive force across multiple facets of the entertainment industry: Netflix. This Silicon Valley startup harnessed the power of the Internet as a transaction platform to allow consumers to rent DVDs through an extensive online catalog and ship them directly to their homes for one monthly subscription charge and no late fees.

This business model put brick-and-mortar rental businesses like Blockbuster at risk, obviating many of the objections consumers harbored with the traditional rental business. Not only could consumers rent DVDs in the
comfort of their own homes, but Netflix developed taste algorithms to
recommend titles based on historical viewing habits. This content curation
and discovery mechanism furthered media personalization for consumers, all
of which was made possible through the technological advancements of
databasing and data analysis as prerequisites of the digital revolution.

The Internet reshaped the home entertainment rental business by
changing its distribution contact points with the consumer. What the Internet
effectively accomplishes is to act as a disintermediator of distribution,
shedding unnecessary layers within a supply chain. Netflix demonstrated that
the traditional method of constructing a network of physical brick-and-mortar
stores for consumers to access was inefficient, instead centralizing the
consumer storefront experience into a Web interface.

Furthermore, since Netflix did not need thousands of physical stores, it
only needed a handful of strategically located warehouses to mail discs to
customers. This “go to them” model was a much different approach than the
traditional “come to me” model and was used not only for home
entertainment but across the entire retail industry as well. While online retail
services like Amazon changed the relationship between consumers and
products, traditional brick-and-mortar businesses like Sears and CompUSA
started to take online commerce seriously, launching online storefronts as
well.
By 1996, nearly $1 billion in online retail sales were generated domestically, which vaulted to $17 billion just five years later in 2001 (Boar 77). Indeed, the Internet as a transaction and e-commerce platform was becoming deeply rooted in the lives of consumers. The Internet evolved from a communications platform and a forum for users to create and consume simple web pages, to a medium to handle transactions. This mindset would lead to the invention of disruptive platforms that effectively enabled users to easily share media files across the Internet, posing a significant threat to the media industry and blindsiding the music business in the process.

Napster and the Birth of P2P Sharing

At the turn of the twenty-first century, audiences were becoming increasingly online savvy, and the power of the Internet was starting to become more apparent as both a friend and foe to traditional media business models. Transfer rates were still comparatively low at the time, with the culture of consuming online video content still in its infancy, rarely extending beyond movie trailers and news clips.

The low storage and transfer requirements of music files and the newly-developed MP3 audio compression format turned out to be ripe for these lower Internet transmission speeds, and the rise of peer-to-peer (P2P)
sharing networks like Napster marked a significant paradigm shift in how consumers approached the value — and cost — of media.

At its height, Napster had more than 80 million registered users on its sharing service (Gowan), with its rapid adoption fueled by its easy-to-use interface. Expectations evolved quickly that the transmission and sharing of music files was a fairly simple process. Though piracy was a concern in the days of the VCR, recording a film on television was still accomplished on a piece of physical media that warranted its physical movement to another individual. DVDs and CDs attempted to stymie those efforts with digital anti-piracy protections. Now the media industry was confronted with a different problem: virtual digital files, on computers, that could be easily transferred through the Internet without the need for physical media.

This digitization of music, and its ability to be easily transferred given its relatively small file size, was one of the first dominos to fall in a profound sea change in the music business. Consumers started to target only the specific music tracks they wanted, shifting the mindset away from the profitable bundling techniques of albums.

Long an economic cornerstone of the music business, bundling ensured that even if a consumer desired only one or two specific tracks, it was necessary to purchase an entire album of a dozen tracks at a higher overall price. This is analogous to the cable industry in which consumers are forced to
subscribe to a bundle of networks for a fixed price even if only a handful are desired.

With P2P networks and Napster, consumers not only downloaded solely the tracks they desired but at no cost. As a result, Napster is often credited as one of the main impetuses for the fall of the “Album Era” in the music industry (“When Albums Ruled the World.”). As history had demonstrated, advances in technology afforded consumers greater flexibility and control of their media experience, and the rise of the Internet as a media sharing platform augmented this further.

MP3 player sales were increasing, though services selling digital music downloads as a substitute to physical media were slow to adapt to changing consumer attitudes toward music ownership. The release of the Apple iPod in 2001, however, shifted the MP3 player market from devices capable of storing a few dozen songs to a device that promised to hold “1,000 songs in your pocket.”

While portable music players such as Sony’s Walkman and Discman allowed portable music playback on audiocassettes and CDs, there was an inherent storage limit to these formats. The iPod was the first mainstream mobile product that allowed one to carry an entire music library in their pocket for on-demand consumption.
Up to this point, the vast majority of song files on MP3 players were either ripped from CDs or files downloaded from P2P networks, most of which were illegally pirated. With Apple’s release of iTunes in 2003, the next step in the evolution of music distribution was in creating a music service that could potentially diminish music piracy through digital music sales. iTunes, therefore, was a major cornerstone in the foundation of digital media distribution on a massive scale, which provided a natural launch pad for technology to advance toward a loftier goal: digital video distribution.

**iTunes and Music Downloads**

As an opportunistic play, Apple approached music labels and convinced them to sell their tracks individually through their new iTunes music service as a way to combat online piracy. The bet was made that if digital music was available in an easy-to-use elegant interface, at a fair price, consumers would pay for it. At the same time, illegal music downloading was becoming increasingly cumbersome given the amount of corrupted or infected files on P2P networks. This bet started to pay off, with consumers buying into the Apple ecosystem of digital music and, in turn, fueling the sale of Apple’s iPod music hardware from less than one million units in 2001 to almost 40 million units in just 2006 alone (Apple).
Though damage had been mitigated somewhat, the music business was forever changed. The highly profitable sales of albums declined and consumers shifted to purchasing individual tracks à la carte. What made the music business more vulnerable to piracy than the motion picture and television businesses was the smaller sizes of music files. Transferring a feature film online was a process the average computer user was not willing to undertake given the low bandwidth and subsequent time commitment involved.

Apple’s iTunes was significant because it helped break apart the music bundle. The fluid symbiosis between online distribution and mobility on Apple’s iPod shifted digital music consumption over the Internet into the mainstream, no longer just a rogue activity through P2P sharing networks by a younger demographic.

The eventual evolution of the motion picture and television businesses into the digital world would prove to be a strong parallel to the music business and the foundations it built for the Internet as a media distribution platform. In the early 2000s, the possibility of mass digital distribution over the Internet for video content, however, was still about five years away, though the video world was about to be introduced to a new type of digital technology — inspired by the VCR — that would thrust time-shifting into a whole new realm of convenience and flexibility.
Digital Video Recorders – Digitizing the VCR

With the rapid adoption of the VCR throughout the 1980s that allowed home video recording, to the rise of DVD players in the early 2000s that replaced pre-recorded VHS cassettes with digital discs, the mindset of time-shifting and accessing content on demand was now a firmly established consumer behavior.

An inherent drawback to both of these types of formats was that they were physical media. Though DVDs offered benefits that VHS cassettes did not, both were still burdened by the physical space requirements needed to store them, the susceptibility of physical deterioration, and their limited physical storage capabilities. Though the home entertainment market had largely transitioned to DVDs for video playback, DVD recorders were not a widely-adopted technology, thus the time-shifting of television content was still predominantly on magnetic tape systems like the VCR.

In 1999, TiVo released a digital counterpart to the VCR: a digital video recorder (DVR) capable of recording live television onto a hard drive as a digital file for later playback. In addition to traditional VCR controls such as rewind, pause, and fast-forward, TiVo also added new functionality such as pre-scheduled recordings and automatic season recordings of television series. All of this non-linear functionality was controlled through an integrated on-
screen user interface, increasing ease-of-use over the linear reel-to-reel nature of the VCR.

ReplayTV, a competitor to TiVo, was launched at around the same time, but was mired in numerous legal troubles from the onset. Two functions ReplayTV marketed, which were absent on TiVo, were the ability to automatically bypass television commercials as well as send digital copies of recorded shows through the Internet to other ReplayTV users.

Though users with VCRs also had the capability of bypassing commercials and giving a friend a physical copy, the speed and simplicity of this new digital technology posed a major threat to the economic underpinnings of the television business. Not only were there monetization threats from skipped commercial time, but a user who did not subscribe to HBO could easily receive a recorded HBO series from another ReplayTV user.

In 2002, DVR penetration among television households was around 5 percent. Today, roughly 50 percent of television households use DVR technology (Nielsen, “Universe Estimate”), which has advanced over time to include multiple tuners, larger hard drives, and online video streaming capability.

With consumers desiring more control over their television viewing, the DVR took the conventions and behaviors developed by the VCR and simplified them. While VCRs needed to be manually set to record a specific
program, DVRs automated this feature, recording new telecasts automatically. Over time, DVRs added multiple tuners capable of recording numerous programs simultaneously, allowing viewers to worry less about missing a scheduled airing. DVRs quickly became stockpiles of television programming and movies, which ended up fueling overall television viewership. In fact, DVR households watch nearly 30 percent more minutes of primetime television than Non-DVR households (Nielsen, “Time Spent”).

Overall, the average viewer watches around six hours of television per day across all devices, one hour more than in 2005 (Nielsen, “Time Spent”). The effects of the DVR as a piece of technology were not only profound because it enabled viewers to more easily time-shift content, but because it also drove increased viewership through the automatic recording and stockpiling of television programming.

Up until the early twenty-first century, motion picture and television distribution was still largely restricted to traditional distribution methods. Though the Internet was conducive to the distribution of still images, music, smaller files, and some types of interactive content, the marriage of the Internet and video was still in its infancy until an online platform launched that would have a seismic impact on the future of video distribution.
YouTube – Online Video Streaming Goes Mainstream

In response to consumers spending an increasing amount of time online, bandwidth speeds continued to rise, allowing more intensive multimedia experiences to be delivered through the Internet. While the early Internet was only capable of rudimentary web pages and graphics, higher quality images, video, and interactive media became possible over time.

Compression formats like MP3 allowed audio files to be downloaded quickly over increased Internet bandwidth, though the mass consumption of longer form video was still plagued by large file sizes and lengthy download times. Video content was still predominantly consumed through television over broadcast, cable, and satellite providers, as well as various peripherals such as DVD players and videogame consoles.

As broadband speeds continued to increase, the possibility of streaming video online became a reality, and in 2005 YouTube launched with the promise of allowing everyone the freedom to share and consume video content through the Internet. The concept of streaming was significant because it negated the need to download large video files for playback, instead requiring only sufficient bandwidth to watch a video file at the same time it was being transmitted from its storage on a remote server.

Early YouTube was largely a library of amateur user-generated videos, music videos, and promotional content, but the service quickly started
changing the conversation about what the Internet could become for video as a distribution platform. Technologies like the VCR and DVR were significant in their ability to record live and broadcaster-scheduled content for later playback. As recording machines, however, their very nature was predicated on linear content. YouTube was different in that it was not a recording mechanism. For the first time, a distribution platform existed that allowed truly non-linear, fully on-demand video distribution.

While VCRs, DVD players, and DVRs all contributed to shifting consumer attitudes away from provider-controlled exhibition through the use of recording linear content and playback of pre-recorded media, YouTube also possessed another advantage as an online platform in that content could be accessed from any web browser. Physical machines provided singular access points in a fixed location, but the very nature of the Internet as a connected web of servers allowed the storage of media to be remote and its subsequent access to be from nearly anywhere.

YouTube not only exposed viewers to the possibility of video streaming through the Internet but also started to democratize video authorship and distribution. As previously mentioned, the true power in the media business is in the distribution of content, and the primary distribution pipelines through theaters and television networks have always been tightly guarded through scarcity. Unlike the finite number of screens in a movie theater or networks on
a television lineup, the Internet is capable of storing an unlimited amount of content to be delivered on demand.

While production and post production had become democratized by easier and more cost-effective access to tools and technology, delivering content to the end user was still largely dominated by traditional distribution channels. The idea of leveraging the power of the Internet as a distribution platform for individual authors to self-distribute their video content seemed out of reach until Internet bandwidth and media file compression advanced adequately.

YouTube, in essence, became an online version of television distribution, even inserting advertising within video content. For the first time in the history of media, the power of video distribution was in the hands of anyone, with the potential for content creators to deliver their work directly to audiences. This shift was so profound that it effectively altered the role of the distributor from a gatekeeper to a storage facilitator.

Initially, consuming video online was restricted to desktop computers and laptops. For the most part, mobile phones and personal digital assistants (PDAs) were not technologically advanced enough to stream high quality video, with the bandwidth of cellular data connections far too low to provide a seamless streaming experience. Along with time-shifting and on-demand video streaming, finally taking video consumption into the mobile arena
would complete a trifecta of consumer behaviors that had been evolving over several years in the media business.

**The iPhone - The Birth of Mobile Media**

While YouTube set the stage for the online streaming of video content, Apple’s iTunes service at the end of 2005 began selling digital downloads of television shows and music videos. The primary contrast between YouTube and iTunes was that YouTube was a video streaming service of mostly amateur content while iTunes was a video download service of mostly professional content.

iTunes took a transactional sales approach similar to music sales, selling television shows by episode as well as individual music videos. Though users also uploaded music videos on YouTube, which could be accessed for free, iTunes offered higher quality versions that could be downloaded and stored — at an attractive price.

Concurrent with Apple’s introduction of video download sales was the release of their fifth generation iPod, featuring a large color screen display. While the original iPod became the first mainstream mobile music player with significant storage capability, the video capabilities of the new iPod created the first mainstream mobile video player, marking one of the first pieces of technology to bridge the video gap between computers and mobile devices.
Since the iPod did not feature Internet connectivity to stream video online, it depended on a large internal hard drive to store files. A drawback to any localized storage approach is the need to have sufficiently-sized hard drives. When files are stored on remote servers, the consumption device does not require large hard drives since the device serves primarily as a display output for content fetched remotely from a server.

With the introduction of YouTube for online video streaming and iTunes for video downloads, the marriage of video and online was becoming a larger part of the consumer media experience. From an exhibition perspective, a missing piece of the equation was the existence of a device that was mobile like an iPod but that also incorporated cellular Internet connectivity like a mobile phone. Outside of PDA devices, which were arguably still clumsy in handling media, feature phones dominated the mobile phone landscape, and were little more than a mobile phone that included a basic web browser, calendar, and alarm clock.

In 2007, Apple released the iPhone, a large touch screen device that was not only a phone but a pocket computer connected to cellular Internet. Like the personal computer in the 1970s, the iPhone was another groundbreaking moment in the history of technology and can fairly claim to be the true genesis of the mobile age. While mobile phones had existed for decades, no device had ever been invented that combined the functionality of a phone, cutting
edge graphics, a multi-touch user interface, and Internet services so symbiotically. The iPhone would prove to be a game changer not only for technology, but in transforming the very ways people lived, communicated, and interacted with information.

For media, the iPhone was a logical extension of what consumers were becoming increasingly comfortable with in the personal computer world: consuming video content online. The iPhone provided the bridge to transfer more of these behaviors onto a mobile device, which allowed not only video downloads like an iPod but also provided a dedicated YouTube application on the home screen to allow true mobile video streaming. The capability to stream video content originally through an online service like YouTube was a true paradigm shift in the media business, and extending that capability into the mobile space was a natural step forward in the progression of video distribution and exhibition.

Not only did advanced hardware technologies need to be invented to allow a device like the iPhone to exist, but wireless networking and communication infrastructure also needed to evolve to a point that allowed an acceptable level of online multimedia use. To this end, Apple initially partnered with AT&T Wireless as the exclusive carrier of the iPhone to ensure that wireless data speeds and cellular network capabilities were sufficient to provide a great user experience.
The iPhone was more than just a consumption machine, however, and also included still and video cameras so that it could be a content creation device as well. A factor fueling the consumption of online videos, most notably user-generated content, was the convenience of creating pieces of content with tools included in a device that was already mobile. As consumers harnessed the power to create content on mobile devices, uploading content to video services like YouTube was a far more streamlined process, which both significantly increased the quantity of online content available, and in turn fueled content consumption. Ultimately, the true genius of the iPhone was in eradicating the need to carry multiple standalone devices such as a phone, a camera, a web connection device, a music player, a video player, and a GPS mapping system. Instead, the iPhone managed to beautifully consolidate all of these devices into one mobile device.

Outside of YouTube and iTunes, however, choices were limited in terms of the amount of video content that was available on mobile phones. Aside from digital purchases that needed to be locally downloaded on mobile devices, movies and television series were still consumed in the offline world through the traditional means of theatrical, television, and physical home entertainment media. Not long after the release of the iPhone, however, Netflix would once again disrupt the home entertainment business, affecting the trajectory of both the motion picture and television industries.
**Premium Content Goes Online**

While YouTube dominated the online landscape in user-generated, promotional, and amateur content, iTunes dominated the premium download market. The next step in the evolution of video distribution was delivering premium, professionally-produced content into the online streaming world.

At its core, premium content can be divided into two broad types: current content and library content. On both the motion picture and television sides, content that is recent and newly-released is considered current content, while library content generally refers to television re-runs, back catalogs of movies, and home entertainment media.

Up to this point current movies and television series needed to be purchased individually and downloaded for consumption on either a computer or mobile device. On the premium library content side, Netflix commanded the home entertainment rental market with its disc-by-mail service. In 2007 Netflix took their offering a step further by launching a digitized video streaming service. Armed with only 1,000 movie titles at the beginning, subscribers were given the ability to instantly stream content on demand over a computer web browser.

Netflix initially reinvented the home entertainment market by eliminating the need for brick-and-mortar rental stores like Blockbuster and now was moving to reinvent home entertainment once again by digitizing
video delivery through online streaming. The operation of maintaining a disc-by-mail rental service with large warehouses of physical discs, personnel, and shipping could be streamlined into a more cost-effective solution that eliminated the expenses associated with managing physical media.

On the consumer side, the benefit of streaming home entertainment content was in its immediacy. Moving physical media required time, and though Netflix originally made the rental process more convenient by eliminating the need to travel to rental stores, convenience was further enhanced with instantaneous on-demand viewing.

Later that same year Hulu officially launched their online, ad-supported video distribution service. As a joint venture between the media conglomerates of NBCUniversal, 21st Century Fox (formerly News Corporation), and The Walt Disney Company, Hulu offered premium current content from their respective broadcast networks: NBC, FOX, and ABC.

While Netflix focused on the streaming of library content, Hulu now made it possible to stream current broadcast television series the day after airing, without the need for a terrestrial over-the-air broadcast antenna or a cable or satellite subscription. This was a significant milestone in the evolution of media distribution as consumers were given a platform to view broadcast television over the Internet. Since Hulu was a free service that supported itself through advertising, it was thus a form of ad-supported video-on-demand...
(AVOD) and not a subscription-based video-on-demand (SVOD) offering like Netflix.

Shortly after the release of Hulu, broadcast networks developed their own network apps on desktop and laptop computers as well as mobile devices. Though 95 percent of viewership still occurred within the traditional television world (Nielsen, “Time Period”), advertising revenues could be earned through these new digital platforms, providing an alternative to DVRs and prohibiting the skipping of commercial spots.

While premium content was becoming more widely available on personal computers and mobile devices, a missing piece of the puzzle was still the invention of a technological link that would marry Internet content and television screens. Apple would once again rise to the challenge, championing the beginning of another paradigm shift that would finally bridge the gap and move the Internet into the television world.

**Over-the-Top: The Marriage of Television and Online**

When YouTube launched it was solely a personal computer experience, separate from the experience of watching content on a television screen. iTunes video downloads were initially focused on the mobility and small screen experience of the iPod. Netflix and Hulu followed suit, with both initially launched as personal computer experiences before migrating to
mobile devices. Exhibiting Internet content on a television screen, however, was a cumbersome process, as consumers needed to physically connect their personal computers to the interface ports on the back of their televisions sets in order to mirror the content.

This problem was solved with the creation of Internet-connected devices that could be attached to a television set and display media from remote sources. These devices became known as over-the-top (OTT) devices since they operated “over the top” of an Internet connection as the gateway to serve media content.

Apple released their first version of an OTT device called iTV in 2007, which included a 40GB hard drive that could wirelessly sync with the iTunes library on one’s personal computer. An initial limitation, however, was that iTV was not a standalone streaming solution but rather needed a personal computer to act as the central media hub from which all content was downloaded. All videos, music, and images needed to be downloaded first to a computer then subsequently downloaded to the iTV in order to be exhibited on one’s television set.

One year later, the OTT market took a big step forward when these devices started to transition into standalone streaming solutions that negated the need for downloading files. Apple allowed direct streaming from iTunes, inclusive of movie rentals, and companies like Boxee and Roku released
devices that allowed direct Netflix streaming without the need for a personal computer. Of course all of this was dependent upon technological advances in bandwidth and streaming protocols to allow for the huge amounts of data required for real-time delivery of video — increasingly high definition — and stereo audio simultaneously.

This marked a significant breakthrough in the evolution of distribution and exhibition for the gap between online content and television sets was now fully bridged. Up until this point it was necessary to view online content through personal computers and mobile devices, both very different screens with different types of audience experiences. With streaming OTT devices, one could now consume online content on the largest screen in the house.

The desire for access to Netflix streaming on television sets was a substantial driver in the adoption of OTT devices, including televisions with built-in Internet functionality called Smart TVs. Netflix streaming grew rapidly in the United States, vaulting from 2 million users in 2009 to over 40 million users in 2014 (Shaw). With the rise in Netflix streaming popularity, the demand for physical discs subsequently declined, and the home entertainment market started shifting from a purchase model to a streaming access model.

The home entertainment market in the United States — inclusive of all sales, rentals, and subscriptions — peaked in 2004 at $21.8 billion, with the next two years experiencing minimal year-over-year declines of less than one
percent each year. In 2008, however, home entertainment fell by two percentage points, and by 2009 home entertainment revenues fell below $20 billion for the first time in six years, dropping eight percentage points. 2014 ended at $17.8 billion, a loss of $3 billion from its peak in 2004 (Bond).

As consumers shifted from the transactional nature of purchasing physical media to watching Netflix on a subscription basis, studios tried to stem the losses. These efforts were similar to the music business in the early 2000s when consumers started shifting away from purchasing lucrative albums to individual tracks.

For current television content, however, there was a different level of risk associated with allowing Hulu’s service to be accessible on television screens. While Netflix streaming on a television cannibalized physical home entertainment sales, accessing ad-supported Hulu content on a television set was perceived as a potential threat to the lucrative cable subscription ecosystem since the experiences were too similar. When online and television were kept as separate worlds, television completely held its value proposition as a unique and separate viewing experience. Once they were linked together, the established television business model risked cannibalization.

From a licensing perspective, this evolved the business into segregating rights based on screen type, with streaming on OTT and mobile devices requiring separate licensing agreements. Accordingly, with different economic
considerations in play to secure these content rights, Hulu began offering an SVOD option called Hulu Plus in 2010 which, though still ad-supported, allowed users the ability to stream content through their OTT and mobile devices for a monthly subscription fee. Within one year of launch there were 1.5 million Hulu Plus subscribers, which grew to 6.5 million by the end of 2014 (Sandoval; Roettgers, “Hulu”).

Though Hulu Plus and Netflix are similar in their subscription approach, Hulu Plus operates much more like a basic cable network since it is a dual revenue operation, earning money through both the advertising it serves within its distributed content as well as monthly subscriptions. Netflix, on the other hand, does not serve ads and is solely subscription-based, more akin to a premium cable network like HBO.

The creation of OTT proved that all of the pieces existed to create an end-to-end video distribution platform. A piece of Netflix content can now be viewed on a personal computer through Netflix’s web-based video player, through their mobile app on a phone or tablet, or on a television set through a connected or built-in streaming device.

More importantly, distribution of these video streaming services is not predicated on the need for a cable subscription or a traditional television network. It is this underlying concept that is the most significant illustration for why the existence of these pieces of technology is so profound: they allow
one the ability to potentially bypass the entire traditional television
distribution system.

Since consumers approach television, personal computer, and mobile
screens as different viewing experiences, this marriage between the
democratization of online video distribution and the holy grail of the
television screen is a tectonic shift that plays an important role in today’s
media landscape, and will continue to do so in the future.

**The Current State of Affairs**

As we’ve explored, the current state of the media business is one of
ubiquitous personalization, choice, and flexibility, resulting from advances in
technology that led to three key paradigm shifts in media consumption: 1) 
time-shifting of scheduled content, 2) high speed Internet allowing the
possibility of video content to be streamed online, and 3) the proliferation of
mobile media devices and enhanced cellular data networks.

The media content that began as motion pictures at the turn of the
twentieth century in theaters evolved electronically into over-the-air broadcast
and cable television in living rooms and eventually into digital content
delivered over the Internet to computers and mobile devices through services
such as YouTube, iTunes, Netflix and Hulu.
The combined effect of these paradigm shifts has spawned a media environment that is increasingly fragmented with more content available than ever before, delivered through both new and traditional distribution methods, and consumed on an increasing variety of screen types and sizes. The media business stands at a crossroads between trying to preserve legacy business models while adapting to a rapidly changing consumer accustomed to an endless sea of entertainment options.

In their present state these new technologies have primarily served to augment traditional business models in order to provide added value to consumers and incremental revenue streams to content creators. Though services like iTunes, Netflix, and Hulu are profound developments in the evolution of this new digital distribution world, true disruption to the core motion picture and television businesses has thus far been minimal.

Consumer behaviors continue to evolve with advances in technology, and these behaviors will ultimately dictate the nature of the industry going forward as traditional business models continue to be disrupted and erode. It took several decades for the media world to evolve to its present state, with significant momentum occurring in the past five years alone.

Streaming video services like Netflix, Hulu, and Amazon Instant Video have evolved into entities akin to television networks and virtual cable operators. Initially, these streaming services provided just a handful of
different content options, but soon all exploded into extensive libraries of on-demand motion picture and television content. Moreover, these services have started producing their own exclusive original content — like *House of Cards* on Netflix or *Transparent* on Amazon Instant Video — as a differentiating factor to keep viewers loyal to their services and provide exclusivity.

The real significance of *House of Cards* — which will go down as a watershed moment in the history of television — was that it marked the first time a premium episodic series was produced and distributed directly to television sets without the need for a traditional cable or satellite subscription or a traditional television network. This demonstrated for the first time that premium television content could be created outside of, and completely divorced from, the traditional television ecosystem.

The success of these streaming series is another contested point in the current media landscape. For traditional television networks the common currency is Nielsen’s ratings system, which operates on a system of samples in order to project the entirety of all 116 million households in the United States television universe (Nielsen, “116.4 Million”).

Digital services like Netflix, however, do not need to estimate since they employ census-based measurement methodologies from their servers. As a result they know exactly how many times an episode was served to viewers. Traditional networks like FX or AMC depend on “live” scheduled feeds
broadcasted on linear schedules. Thus, the actual number of viewers who watched an episode is an educated guess, a calculated projection based on a random sample of households. By releasing all new episodes at once instead of on a traditional, weekly basis, Netflix is not only rewriting the distribution rule book, but also refusing to release the viewership data of their series, further distancing themselves from the world of traditional television.

With streaming services adopting a more simultaneous approach to their releasing strategy, this has also altered the very nature of the episodic narrative form as well. Episodes no longer need to be manufactured in the traditional sense where conclusions are fashioned as cliffhangers in order to motivate viewers to return the following week. This is evident in series like *House of Cards* or *Transparent*. Episodes flow into each other in a more tonally consistent way, like continuous chapters, without the traditional dramatic buildup in the final minutes of the episode.

Moreover, the massive libraries of on-demand content on these streaming services have spurred a behavior called binge viewing, wherein viewers watch several episodes of a television series in one sitting. Though binge viewing was a possibility in the physical media space and through DVRs, the sheer number of content options available instantaneously has facilitated a surge in this type of viewing behavior in recent years.
Arguably, this binging behavior has been beneficial to traditional television networks since “catch up” viewing of past seasons of a television series like *Archer* on FX can be viewed through Netflix, which in turn helps fuel traffic to the FX television network for the current season. DVDs of prior seasons of television series are usually released in close proximity to the premiere of the new season to also drive television tuning. The first season of the FOX series 24 was released the day after its finale telecast in order to help drive television tune-in months later to its second season, representing the first television series to be released on DVD under this strategy (Stelter).

Social media has also had a profound impact on the current media experience, most notably as a discovery and curation mechanism. Human beings are social animals who build bonds and solidarity with others of similar interests and values. Media plays a significant role in this effort toward building a human communal experience through the social conversation of movies and television series. Since people trust the preferences of those in their social circles, this social influence becomes a powerful content discovery and curation mechanism for consumers.

The development of new content is also starting to evolve in today’s media environment, as audiences become closer to the process and more influential. While the development process of shaping material and piloting a series has always been out of public view, Amazon Studios releases their slate
of pilots to the online community to be viewed for subsequent comments and voting. This interactive paradigm shift puts the audience front and center in the development process, putting the power into the hands of the consumers in ultimately choosing which stories are brought to life.

Though the evolution of the media industry up to this point is remarkable, it is still in the middle of a long transition, with significant shifts still to be realized over the next decade. Most importantly, the technologies now exist to influence consumer behaviors in substantial ways, which will ultimately drive profound industrial shifts in how motion picture and television content is both distributed and exhibited in the future.

**DISTRIBUTION & EXHIBITION - THE FUTURE**

The future of the distribution and exhibition of motion picture and television content will be less defined by mode of exhibition, as the lines separating these traditional classification terms continue to blur and offerings become just “content.” Moreover, regardless of budget and length, content will ultimately be fully distributed over high speed Internet delivery systems to all screen types, transforming legacy distribution models still dominating the media landscape today.

Motion pictures and television series follow very different distribution and monetization models, with the critical difference between the two resting
in how they are initially distributed and exhibited as new content. Motion pictures are distributed theatrically on a transactional access basis, while television series are distributed through broadcast and cable networks either through free over-the-air transmission or through subscription access.

This has recently started to shift with some motion pictures bypassing theaters in favor of online distribution platforms, and episodic television series produced through online video streaming services like Netflix circumventing the traditional network pipeline. These instances still constitute the minority of premium content in the marketplace, with the vast majority of motion pictures and television series still distributed through traditional means.

The future of the media business will come into clearer focus when true disruption occurs in the two main distribution mechanisms that underpin the entire system: the theatrical business for motion pictures and cable subscriptions for television. Though fracturing of these two frameworks has already begun from the impacts of broadband and digital technologies, they have yet to be transformed to a point where radical industrial change has occurred.

While the transformative effects of the Internet on the motion picture and television industries are still in their early stages, we have explored a few of the substantial impacts the Internet has already created in other industries
such as music, publishing, and retail. Significant industrial change was possible in these industries primarily due to the economic efficiencies present in leveraging the Internet as a disintermediator of each of these distribution systems. The Internet shed unnecessary intermediary layers between creator and consumer, from eradicating the need for physical products in music and publishing to brick-and-mortar retail stores.

While motion pictures and television series eventually become physical products later on in their lifecycles through Blu-ray and DVD discs, both are considered virtual products in their initial release. It is for this reason that these industries have been more impervious to broadband and digital technologies disrupting their primary business models.

Music and publishing, for example, depended on physical products as a substantial segment of their businesses for decades. Broadband and digital technologies morphed these physical products into their virtual, digital counterparts, eliminated layers and processes no longer needed such as physical disc packaging, newspaper printing presses, and delivery trucks.

The motion picture and television industries, by keeping their virtual products within distribution channels they tightly control, have been able to preserve the walls of their businesses. These walls, however, are fracturing at an accelerated rate as consumers embrace new technologies and the Internet
plays an increasingly larger role in media delivery, which will only expand over the next decade.

I will first examine the motion picture industry and the likely changes that will occur as consumers increasingly abandon the theatrical business, followed by an exploration of the television industry and the profound effects that will result from the erosion of the traditional cable subscription model.

**The Decline of Theatrical**

The economics of the motion picture and television businesses rely on a model of windowing. Content is created and then distributed through different types of distribution outlets during specific spans of time, with each outlet providing additional monetization opportunities.

On the motion picture side, the first-run window has primarily been theatrical distribution and exhibition. From the onset of the motion picture industry, physical theaters have existed to play live exhibitions on large screens for audiences. For decades this was the only method for consuming motion pictures and the studio system’s vertically integrated structure strictly dictated where, when, and how motion picture content could be consumed.

When television was developed, motion pictures could then be exploited and monetized outside of theaters, which started the television syndication market. This secondary window became a lucrative revenue
stream for studios, which increased with the growth of cable television throughout the 1980s. With the expanded shelf space on broadcast and cable networks, inclusive of premium cable networks like HBO, further exclusive windows were created within these segments, which also gave rise to pay-per-view (PPV). As time-shifting became possible with VCRs, the development of a home entertainment market created the opportunity for additional windowing, allowing consumers to purchase and rent pre-recorded media.

Over the past several years, as theatrical admissions have declined and other distribution outlets have emerged, theatrical windows have shortened. With shorter theatrical windows, less consumer urgency exists to pay for a movie title in its initial theatrical run since it will be available months later in the home entertainment market to rent, purchase, or access through a subscription VOD service like Netflix.

In 1995, the average theatrical window lasted 174 days, at the end of which the motion picture would no longer be exclusive to theaters and enter the non-theatrical market as PPV or home entertainment rentals and purchases. Over the past two decades, however, the theatrical window has shrunk significantly to an average of 110 days (NATO). Despite nearly 700 titles flooding the theatrical market each year (Box Office Mojo), declining admissions and rising ticket prices will continue to squeeze theatrical
windows further as windowing strategies shift emphasis into other platforms that maximize monetization.

In 2014, 1.27 billion theatrical movie tickets were sold domestically in the United States, a decline of 16 percent from a decade earlier in 2004 when 1.51 billion tickets were sold. While admissions fell 16 percent over this time, average ticket prices — adjusted for inflation — surged 32 percent from $6.21 to $8.17, fueling an overall domestic box office gain of 10 percent from $9.38 billion to $10.36 billion (Box Office Mojo).

As home entertainment options expand further into the digital realm and theatrical windows tighten, this trend will continue to grow as the value proposition of paying for a theatrical admission becomes increasingly challenged. As ticket sales continue to decline, ticket prices will need to rise in order to offset this deficit.

A tipping point will occur over the next decade as ticket prices reach a level that no longer aligns with a level of demand needed to sustain the theatrical business at a mainstream scale. This will cause overall box office grosses to decline as consumer spending is shifted to non-theatrical distribution and exhibition. Moreover, the average adult in the United States goes to a movie theater about three to four times per year, only half of the seven-visit rate in 1995 (MPAA).
Larger event-style fare marketed as visual spectacles — titles such as *Interstellar* and *Transformers* — will see the least impact on their first-run theatrical windows. This type of content normally commands the highest production and marketing budgets, and targets an experience that is most impactful on a large movie screen, which has fueled the popularity of the ultra large screen format of IMAX in recent years. These types of pictures are also accompanied by publicity campaigns designed to create a sense of urgency, fueling watercooler discussion.

Overall, however, as theatrical attendance softens, the decline in lower-budget movie titles will need to be offset in the aggregate by income from higher budget fare. Pictures that are designed as events will likely fail to prevent the relegation of theatrical exhibition to a niche experience, similar to vinyl’s role in the music business. As filmmaker George Lucas has predicted, the future of the theatrical movie business will become more analogous to the infrequent attendance at a play or opera, with tickets costing $60 or more (Cohen, “George Lucas”).

**Shifting from Theatrical to Online**

While the theatrical experience is different from watching a movie at home, the line has been blurred by advancements in home entertainment technologies — such as large screen exhibition and superior surround sound
one can get in the comfort of their living room. As technology continues to advance this gap will narrow even further. As long as consumers feel that their home entertainment experience is sufficient, bypassing the larger screen experience of theatrical exhibition will become the new norm as consumers opt for online video streaming platforms.

Adding to the value proposition of home entertainment is convenience. While home entertainment has always been more convenient than traveling to a theater, this advantage has been amplified by streaming services like Netflix. While there will always be a constituency of viewer that desires theatrical consumption, it will become a diminishing subset.

Ultimately, studios will need to shift the first-run window of motion pictures away from theatrical distribution to distribution over broadband. Two different approaches will likely exist simultaneously: subscription access through SVOD services like Netflix and transactional access through Premium VOD platforms.

**Subscription Access Through SVOD**

A differentiating factor of the theatrical movie business as compared to television is that it is transactional; revenue is directly linked to the size of the audience, with a one-to-one relationship between viewers and revenue. This is in contrast to the subscription model of cable television, which allows viewers
to consume an unlimited amount of content for a flat fee. With the rise of
online subscription services like Netflix, consumers have grown accustomed
to accessing large libraries of content for a low monthly cost. Netflix has
played a major role in altering the perceived relationship between price and
value of media content.

While Netflix has just started competing in the first-run theatrical
window of a motion picture’s release, the company has traditionally focused
on older library titles instead, directly competing with Blu-ray and DVD discs.
In October, 2015, Netflix released its first original motion picture, Cary
Fukunaga’s *Beasts of No Nation*, directly to consumers as part of its online
subscription service. Though Netflix released the film simultaneously in a
limited number of physical theaters, the film is exclusive to Netflix, effectively
erasing the need for traditional theatrical exhibitors.

As Ted Sarandos, Chief Content Officer of Netflix, pointed out, “these
are two different experiences, like going to a football game and watching a
football game on TV” (Steel). For a production company like the Weinstein
Company to release *Beasts of No Nation* outside of the theatrical system and
through an Internet company like Netflix, marks a significant turning point in
the future of distribution and exhibition, potentially putting physical theaters
at risk.
By having an online subscription service like Netflix purchase the exclusive distribution rights up front, the transactional economics of content production for theatrical distribution are turned on their heads. The content owner gets paid the distribution fee up front, and Netflix is free to distribute the film for the contracted period of time exclusively on its service. Though there is not a one-to-one relationship as with box office receipts and viewership, by providing premium exclusive content only within its ecosystem, Netflix helps retain current subscribers while also attracting a new audience to its service.

This type of distribution model, though currently in its infancy, will become more commonplace in the future as consumers increasingly gravitate towards subscription, all-you-can-eat content packages. On the transactional side of the equation, Premium VOD services have existed for several years and are more akin to the traditional economics of theatrical distribution.

**Premium VOD**

A more direct heir to theatrical distribution are Premium VOD platforms, such as Apple iTunes and Amazon Instant Video, which have thus far experienced limited success in the marketplace. For a higher price point than the standard digital rental fee in a later window, Premium VOD delivers
the first-run of a motion picture directly to consumers, over broadband or traditional cable delivery, and on any screen type.

While pay-per-view is a type of transactional VOD offering, it has always been targeted to new home entertainment releases and library titles, mostly as an alternative to physical movie rentals. Premium VOD, on the other hand, competes directly in the first-run theatrical window, with Stephen Soderbergh’s 2006 low-budget art house film Bubble marking the first newsworthy motion picture to employ this type of releasing strategy.

Released day-and-date simultaneously in theaters, Premium VOD, and DVD, this experiment was largely unsuccessful since the National Association of Theatre Owners’ (NATO) ultimately boycotted the film (Von Sychowski).

As John Fithian, President of NATO, proclaimed, “it’s the biggest threat to the viability of the cinema industry today” (Gentile). This was similar to Jack Valenti’s “Boston strangler” quote nearly three decades earlier in response to the VCR. Though Bubble became a poster child for day-and-date releasing, the industry consensus at the time was that a low budget film, with no bankable stars, was not going to be a real threat on theatrical revenues. The real significance of Bubble, however, was that it was directed by a major Hollywood director, foreshadowing a future when day-and-date releasing would eventually become the norm.
In 2011, Universal’s planned release of *Tower Heist* on Premium VOD only three weeks after its theatrical debut was met with strong protests from exhibitors and was ultimately kept exclusive to a first-run theatrical release. Lionsgate’s *Margin Call* that same year employed a similar strategy, though was met with far less resistance than *Tower Heist* since theater owners viewed the film as less of a monetary threat. Playing simultaneously in hundreds of theaters, *Margin Call* is widely considered the first successful example of a Premium VOD offering released day-and-date with its theatrical run, earning over $4 million in Premium VOD viewings and $5.1 million theatrically (Saperstein).

In 2013, Netflix’s Ted Sarandos became embroiled in a very public dispute with NATO’s John Fithian over comments Sarandos made during his keynote at the Independent Film Forum. Sarandos criticized NATO for fighting releasing efforts, saying that NATO would “kill movies” and there is “better business in giving people what they want than creating artificial distance between the product and the consumer.” By moving all of the windows up, Sarandos argued, the industry would be shifting “closer to what the consumer actually wanted.” Filthian retorted sharply, “subscription movie services and cheap rentals killed the DVD business, and now Sarandos wants to kill the cinema as well” (Johnson).
While Premium VOD is currently focused on more low and mid-budget titles, this will shift over time to high-budget and more mainstream, commercial offerings as the motion picture business transitions over the next decade. As with any legacy technology threatened by a new paradigm, theater owners will challenge studios as they shift to Premium VOD and cut out the middleman.

As we have explored, a profound characteristic of the Internet is as its role as a disintermediator, effectively eliminating layers that are no longer needed in a more streamlined distribution model. As a direct-to-consumer approach, studios are effectively able to self-distribute their own content at prices they dictate. Conversely, self-distribution will also empower a greater number of independent filmmakers who are not linked with a traditional studio distributor.

Overall, the theatrical business for motion pictures is undergoing radical change, as admissions continue to decline and ticket prices continue to rise. The convenience of subscription VOD and direct-to-consumer Premium VOD platforms will offset a decline in theatrical revenues and, ultimately, the theatrical experience will become a niche experience as online digital platforms take the main stage.

While significant changes are underway in how motion pictures are distributed and exhibited, even more profound seismic shifts are percolating
in the television industry, a business fraught with more layers than the motion picture business and a system of greater complexity.

The Shifting Television Landscape

While the decline of theatrical distribution and exhibition will ultimately force the motion picture industry to transition into Premium VOD and subscription VOD platforms, the disruption of traditional cable subscriptions will force the television industry to shift to business models centered around smaller bundles and à la carte network offerings. As the economics shift and content becomes accessible primarily through apps on fully on-demand digital interfaces, DVRs will become a relic technology, with advertising reverting to unskippable spots that are more data-driven and targeted to specific types of viewers.

As we have explored, the traditional television business has been structured for decades around scheduled programming, similar to the scheduled exhibitions long a cornerstone of the theatrical business for motion pictures. With the rise of time-shifting, technologies such as VCRs and DVRs empowered consumers to access the content they wanted free from the shackles of rigid schedules. This fueled an on-demand culture of television, with the rise of mobile devices and high speed Internet affording consumers even more ways to access and interact with television content.
The current state of the television industry is one of expanding fragmentation. Audience’s time is splintered across a sea of available options, with attention increasingly shifting to content sources outside of traditional television. The meteoric rise of the television industry over the past five years alone, fueled by the explosive growth of cable networks and original series, has fostered an environment of increasing choice, but also of increasing fatigue. There is simply too much competition for a consumer’s time and wallet. Thus, while often referred to as the golden age of television, the industry will likely experience a significant contraction over the next five years in both the number of networks and new original series available to consumers.

The centerpiece of this contraction will be the rising assault on the traditional cable bundle, as customers increasingly cancel their subscriptions and those without a subscription resist turning into subscribers. Colloquially referred to as cord cutters and cord nevers respectively, these two consumer segments will ultimately represent the agents of change for the television industry; an industry fraught with increased complexity due to its entanglement with advertising as a primary monetization source.

An assault on the current cable bundle impacts not only the amount of paid subscribers in the ecosystem but also the number of available viewers who can ultimately be served to advertisers. The combined effects of cord
cutters and cord nevers, therefore, will disrupt the traditional economic model which has reigned supreme for decades.

Fueling this growing aversion to the traditional cable bundle will be the continued rise in subscription costs, as well as the waning urgency to watch new series shortly after they first air on linear television — a phenomenon partially fueled by easy access to arsenals of library television content on inexpensive SVOD services like Netflix and Amazon Instant Video.

To understand the importance of cable subscriptions on the economics of the entire television industry, it is important to first examine the overall television supply chain and explore the key differences between the business models of its two principle distribution segments: broadcast and cable networks.

The Television Supply Chain

Television content is generally produced through a partnership between a production company and a studio and then distributed through a broadcast or cable network. These networks are then accessed for free over-the-air or by paid subscription from a multichannel video programming distributor (MVPD) through wired cable providers such as Comcast and Time Warner, satellite providers like Dish Network or DirecTV, or a telecommunications provider such as AT&T U-verse or Verizon Fios.
Broadcast networks, like FOX or NBC, rely on a network of individual local terrestrial stations across 212 local markets to transmit their feeds, and provide programming both for free over-the-air or by subscription access as part of a cable bundle. Cable networks such as FX and Bravo do not transmit free over-the-air transmissions like broadcast networks, thereby negating the need for local stations to transmit a signal across large geographic areas of the country. Rather, cable networks traditionally provide their national feeds exclusively through an MVPD subscription.

Television networks do not actually own the programming they distribute, but rather license the right to air programming from the production company or studio that owns and supplies it. Often the network and studio are sister companies, such as FOX Network and Twentieth Century Fox Television, which are both owned by the media conglomerate 21st Century Fox. *Family Guy*, for example, is produced through a partnership between the production company Fuzzy Door Productions and the studio Twentieth Century Fox Television and licensed to FOX Network for a fee. FOX then sells advertising within the series to recoup the licensing fee paid to the studio supplier and, ideally, makes a profit.

In reality, studios are in the business of supplying television series to any network that is willing to license them. *How I Met Your Mother*, for example, was also produced and owned by Twentieth Century Fox Television.
Though pitched initially to FOX, the series did not fit at the time within FOX’s current slate, and was instead licensed to CBS. Twentieth Century Fox Television, as the owner, is then able to sell the re-runs of the series to individual local stations, cable networks, international markets, and SVOD services.

Along with merchandising, these ancillary revenue streams help offset production expenses, which studios normally finance at a deficit since network licensing fees only cover a portion of the total production cost. An episode of a typical one hour drama, for example, costs roughly $3 to $4 million to produce (Alpert). On average, a network will pay a licensing fee to the studio for approximately 50 percent of the production costs, leaving the studio to deficit finance the remaining portion and recoup those costs later on in ancillary revenues.

**Broadcast Networks**

On the broadcast side of the business, a series like *Parks and Recreation* is provided by NBC to its network of local stations to air at the same time across the country during the primetime daypart. Other NBC-supplied programming, such as national news and talk programming like *The Today Show, NBC Nightly News*, and *The Tonight Show*, are provided to air during early morning, early evening, and late night dayparts.
Most broadcast networks supply roughly two to five hours of programming per day to their local stations. Other dayparts, not programmed by the broadcast network, are then programmed separately by each individual local station to fill the day’s schedule. The majority of this programming tends to be lower cost content purchased from a syndication company, comprised mostly of series in the court, talk, and game genres — such as *Judge Judy*, *Ellen*, or *Jeopardy* — or off-network re-runs of existing television shows or movies such as *I Love Lucy* or *Seinfeld*. The remaining gaps in a local station’s schedule are usually filled with station-produced programming like local news, sports, and weather.

The broadcast television business has traditionally operated on a single-revenue business model, relying predominantly on advertising spots placed within its content. As long as enough viewers are delivered to the series, advertising dollars will ideally cover production and network overhead expenses and the network will be profitable. This single revenue business model of broadcast networks is a crucial distinction from cable networks, which have traditionally relied on a dual revenue model.

**Cable Networks**

Cable networks have traditionally operated on a dual revenue model from both the advertising they place within their content and through
subscriptions from cable bills. Most cable networks — such as Discovery and TNT — are considered basic, and fall within this rubric. Premium cable networks like HBO or Showtime, however, do not follow the same business model as basic cable networks since they are subscribed to on an à la carte basis, serve no advertising, and operate mostly as single revenue businesses through subscriber fees. A traditional cable subscription includes a bundle of basic networks for a flat monthly fee. When a customer pays for cable service the revenue is divided into several pieces, with the MVPD paying a negotiated carriage fee to each network carried in the subscription package.

While most basic cable networks are paid carriage fees lower than $1.00 per subscriber, ESPN commands the highest carriage fee at around $6.50 (Bi). This high fee is fueled by the fact that sports programming is the most expensive type of programming to produce given the enormous licensing fees involved with major sports teams and by the proven ability of sports to draw definable audiences to advertisers.

Of the over 116 million television households in the United States, approximately 100 million subscribe to a cable bundle (Nielsen, “Pay Television”). For a fully–distributed network like ESPN, which is included in most basic cable packages, each cable subscriber must pay $6.50 for the network as part of their cable subscription even if the customer does not watch ESPN that month (Bi).
The cable television business is incredibly lucrative since it is subscription-based and operates on the concept of subsidization. Though the average cable household only watches approximately 18 networks per month (Nielsen, “Stations Viewed”), each pays for a bundle of several dozen channels, subsidizing smaller networks with low viewership that depend on a consistent subscription revenue stream to operate. This model of bundle subsidization is analogous to albums in the music industry, with consumers paying $15 for a bundle of songs even if only one or two are desired.

This concept of subsidization is crucial within the cable television industry because the vast majority of cable networks have very low viewership. In fact, of the 106 basic cable networks currently rated by Nielsen, the Top 20 highest-rated of those encompass roughly 50 percent of all basic cable viewership. The other 50 percent of the pie is splintered between the remaining 86 networks (Nielsen, “Basic Cable”). Thus, channel bundling has always been a cornerstone of the cable industry since it allows for wider consumer choice, diverse content experiences, and reliably delivers large audiences in the aggregate.

The cable television industry continues to expand each year with new channel offerings given the substantial leverage the media conglomerates have over MVPDs. Seventy percent of the cable television ecosystem is owned by one of the six major media conglomerates: The Walt Disney Company,
Time Warner, NBCUniversal, 21st Century Fox, Viacom, and CBS Corporation (Lutz). NBCUniversal, for example, demands that if MVPDs want to carry their marquee brands USA Network, Bravo, and Syfy, most must also carry their lower-rated brands Chiller and Sprout. This bundling approach ensures that smaller networks can survive on consistent subscriber revenue despite low viewership.

Due to the delivery system and dual-revenue model of cable networks, the very nature of the content that cable networks distribute differs greatly from the offerings from broadcast networks. While broadcast networks are overseen by the regulations of the Federal Communications Commission (FCC), cable networks are not. Therefore, broadcast networks must adhere to stricter standards and practices (S&P) in regards to profanity, nudity, and adult themes.

Since broadcast networks are primarily supported through advertising, they are focused more on delivering the widest possible audience. Therefore, the types of programming traditionally found on broadcast networks tend to be broader, more formulaic, and safer concepts that can achieve the largest advertiser reach. Police, medical, and legal dramas such as Criminal Minds and Code Black, branded properties with built-in awareness like Supergirl, and competition series such as American Idol and The Voice become standard fare, with new series often derivatives of past offerings.
Cable networks, while not overseen by the FCC and armed with a dual-revenue model, can take greater financial risks on original series since viewership does not need to be as large as on the broadcast networks. Therefore, the very nature of a lot of cable programming tends to be targeted to narrower audiences, such as darker and edgier fare like *Sons of Anarchy* on FX or *Breaking Bad* on AMC.

**Broadcast Networks Become Dual-Revenue**

Initially, all broadcast networks were distributed to television sets over-the-air. With the advent of cable television, cable and satellite providers began carrying these over-the-air local broadcast feeds as part of their subscription packages. Since broadcast networks have always been mandated by The United States government as free over-the-air signals viewed as a “public trust,” MVPDs have been required to carry them on their systems as part of the FCC’s must-carry rules. With the explosion of cable subscriptions, broadcast networks demanded that they also start directly receiving a portion of a customer’s cable bill.

Since 2008, in a model similar to carriage fees for cable networks, broadcast networks now receive retransmission consent fees (retrans) for each subscriber, though only for the specific local stations in markets that are owned and operated (O&O) by the broadcast network. This is a crucial
distinction since not all local broadcast stations are owned by a broadcast network. FOX, for example, oversees a network of 194 stations across The United States, of which it owns and operates 17 — or less than 10 percent — with the remaining stations owned by independent companies that operate as FOX affiliates (Rabbit Ears). O&O stations, however, tend to be in the largest markets, such as New York, Los Angeles, and Chicago, and thus make up a larger share of a broadcast network’s total station reach.

Regardless of whether a local station is an O&O or an affiliate, all local stations agree to air FOX-supplied programming in designated dayparts with the remaining air time programmed by each individual local station. Retrans, therefore, is an added revenue generator for broadcast networks outside of advertising, though it still accounts for only 15 percent of total broadcast television revenues (Eisenach).

While broadcast networks receive retrans on their handful of O&O stations, the remaining affiliated stations and their owners — companies like Sinclair, Tribune, and Gannett — also receive retrans fees from MVPDs for carrying their local stations. In recent years, however, broadcast networks have started to demand a portion of those retrans fees affiliates are receiving as well, a term which has been aptly named reverse retrans.

Combining retrans fees from a network’s O&O stations with the reverse retrans fees from a network’s affiliates, however, still creates a slice of the
revenue pie that is quite small relative to advertising. Notwithstanding, broadcast networks now at least partly play in the same dual-revenue sandbox cable networks have enjoyed for decades.

The economics of the entire television industry are now therefore significantly interwoven in cable subscriptions, for both broadcast and cable networks. As a result, the accelerated disruption of the current state of the cable bundle will significantly alter the economics of the television business over the next decade.

I will first examine cord cutters and cord nevers and the two primary factors fueling these behaviors: the rising cost of cable bills and the erosion of the value of watching recent content shortly after its initial television airing. Next, I will propose possible responses from networks and MVPDs to the increased economic splintering of the traditional cable bundle, most notably the formation of smaller cable bundles and the offering of specific networks à la carte.

Cutting the Cord

While there have been natural cycles of cable subscriber cancellations over the years, they have not been materially significant enough to the television business to incite radical industrial change, though the velocity of cord cutting will accelerate over the next decade.
The number of cable households peaked in 2012 with 101.3 million subscribers, which dropped to 98.2 million by 2015 (Nielsen, “Pay Television”). While a decline of three million subscribers over three years represents a loss of roughly 1 percent per year, it is probable that the net loss was exaggerated temporarily by the decrease in the rate of new households formed when the United States entered the Great Recession in 2007.

Whenever an individual establishes a new residence, such as a house or apartment, that individual is considered forming a new household. Approximately 550,000 households were formed each year in the United States from 2007 to 2011, the lowest levels in over 60 years, and roughly a third of the rate from 2000 to 2006 when an average of 1.4 million households were formed each year (Paciorek).

As the United States entered into the Great Recession, a primary factor in this decline was a significant portion of the millennial generation, individuals 18 to 35 years of age, living with their parents or older family members. 45 percent of 18 to 30 year olds lived with parents or older family members in 2012, compared to 39 percent in 1990 and 35 percent in 1980 (Vespa, Lewis, and Kreider).

When examining new household formations, it is important to examine how many of those new households end up subscribing to a cable bundle. While new household formations in 2014 rebounded to roughly 1.4 million —
in line with pre-recession levels — the percentage of those new households subscribing to a cable bundle is declining. In 2011, 84 percent of new household formations subscribed to a cable bundle, which dropped to 73 percent in 2015, and is projected to fall an additional four percentage points to 67 percent in 2017 (Vespa, Lewis, and Kreider).

Therefore, the number of new household formations subscribing to a cable bundle is not enough to offset the amount of existing subscribers cutting the cord. This creates a net subscriber loss of roughly 1 million subscribers per year, removing approximately $1 billion dollars from the economics of the cable bundle. Not only does this impact subscriber revenue, but by removing viewers from the ecosystem, it also affects the available pool of viewers that advertisers can capture, thereby impacting advertising rates and devaluing television’s reach.

I submit that the decision to not subscribe to a cable bundle, either as a cord cutter or a cord never, is driven by a combination of two primary factors: the rising cost of cable bills and the waning value consumers place on watching new cable content shortly after it initially airs on television.

The Cost of Cable Bills Continues to Rise

According to Leichtman Research Group, the average video subscription portion of a cable customer’s total monthly bill was around $100
in 2015, 39 percent higher than in 2010 when the average cost was $71. This video portion comprises approximately 60 percent of a consumer’s average monthly bill, with the remaining 40 percent inclusive of high speed Internet, equipment rental fees, and taxes (Leichtman Research Group).

The cost of a bundle of cable networks continues to increase for a couple of reasons. First, more networks continue to be added to the bundle. As previously mentioned, the leverage the major media conglomerates have in forcing providers to carry their network portfolios is creating an environment that is increasingly bloated. The more networks that are in the bundle, the more the end consumer will pay. While there are 106 measured basic cable networks currently, 87 existed in 2010, an increase of 22 percent in the last five years alone (Nielsen, “Basic Cable”).

A second factor is that networks are demanding higher carriage fees given the erosion of not only the television advertising market but of the aforementioned trend in subscriber losses. With 50 percent of all television households in the United States now using a DVR, the increased personalization and freedom to self-style one’s television experience has created monetization challenges with advertising revenue since the average DVR viewer skips through nearly half of the advertising spots presented to them (Friedman).
Television networks are paid for the advertising that is actually viewed, usually within three days of an episode’s initial premiere date to account for DVR viewing. For example, if 10 million viewers watch a new episode of *American Horror Story* on FX within the first three days of its initial airing, but only 4 million viewers actually watch the commercials, FX is only paid for 4 million viewers.

With the increased penetration of DVR technology, viewers are skipping more advertising than ever before. While the dual revenue of many cable networks has historically been pretty evenly split between subscriptions and advertising, as the advertising piece of the puzzle declines, networks need to offset these losses with higher carriage fees which, in turn, increase cable bills for the end user.

As a strategy to justify these higher subscription costs to customers, networks and MVPDs have joined forces in recent years to offer TV Everywhere initiatives to provide more choice in where, when, and how content can be consumed. As broadband and digital technologies have pushed society into an increasingly mobile media world, TV Everywhere allows customers to access the cable networks available in their subscription packages through digital streaming apps on devices such as phones, tablets, OTT players, and videogame consoles.
Currently, more than 100 television networks feed 300 sites and apps on all platforms (Lieberman and Patten). USA Network’s digital streaming app, USA Now, allows cable subscribers to authenticate with their MVPD login credentials in order to stream content like Mr. Robot anytime and anywhere they choose.

Despite the amount of content available, adoption of TV Everywhere has been low. Only 13 percent of cable subscribers in the United States and Canada actively use TV Everywhere, which equates to roughly 15 million households. Though TV Everywhere usage was around 4 percent two years ago, it still falls short of a service like Netflix with has a much larger base of 41 million domestic subscribers (Lieberman and Patten).

While 42 percent of cable customers are aware that their MVPD offers TV Everywhere authentication through sites and apps, only one-quarter of those aware have downloaded their provider’s app (Lieberman and Patten), with the biggest frustration coming from the inability of many to authenticate properly with their MVPD login credentials.

TV Everywhere has also provided a simpler pathway to steal television content without the effort involved in pirating. Since cable subscribers can share their MVPD login credentials with non-subscribers, there is less motivation for cord nevers to subscribe since they can access a bevy of new content free of charge. This culture of password sharing has risen among
younger consumers who are more cost-conscious and resistant to pricey cable bundles. Research firm Parks Associates estimates that password sharing is costing SVOD services around $500 million per year in lost revenue. Though this trend will likely grow, once TV Everywhere initiatives become more robust and mature, paid services like Netflix and HBO NOW will likely restrict multiple simultaneous logins and provide new access subscription packages targeted to multiple users (Spangler).

The Value of Recency is Eroding

One of the principal value propositions of subscribing to a bundle of cable channels is the ability to access recently-aired content, which includes news, live sports, and new episodes of original series. Unlike broadcast networks, cable is a paid service, with content guarded tightly within its walls. This exclusivity provides value to cable content. While historically this has been a successful strategy, the value of accessing new cable content is declining as many consumers shift more of their attention and time to older content on less expensive SVOD services like Netflix and Amazon Instant Video.

While these streaming services contain mostly library content, it is supplied in such an abundant quantity that it is creating entirely new modes of content discovery. Consumers are now presented with an arsenal of older
television series, with little to no advertising, in elegant, fully on-demand experiences. A consumer discovering *Lost* on Netflix, for example — though not a new series — is nonetheless new content to the viewer. Coupled with the empowerment of easy access to all episodes at once, the viewer can then customize their consumption, watching as many or as few episodes as desired entirely on their own schedule.

SVOD services compete directly with the traditional cable ecosystem for viewers’ available hours. The more content consumed outside of the traditional cable ecosystem, the less value a cable subscription holds to the end user. With Netflix, Hulu, and Amazon Instant Video now creating their own original content with series like *House of Cards* and *Transparent*, there is now even more motivation to spend time outside of the cable ecosystem, putting further pressure on the value of cable subscriptions. According to eMarketer, traditional television viewing has fallen 8 percent in the past four years, while viewing across digital on demand platforms has surged 210 percent (Bond and Szalai).

This cannibalization is largely a product of the television industry’s own doing since the value of these SVOD services depends mainly on the very library content originally aired as new content on traditional broadcast and cable networks. As BTIG analyst Rich Greenfield notes, “as more great content from Disney and others flows onto SVOD platforms, more time shifts away
from live, linear TV, accelerating ratings declines” (Bond and Szalai). Since SVOD services are buyers of content, and willing to pay substantial sums in order to increase the robustness of their service offerings, this creates a significant conflict since SVOD revenues allow studios to then bankroll new projects in the pipeline.

The value of recency is declining not only because viewers are shifting more of their attention to older television series discovered through inexpensive SVOD services, but because there is also a fatigue in the appetite for new series. DVRs have become overloaded stockpiles of television episodes, the sheer volume of which is increasingly overwhelming audiences.

In 2014, there were 371 scripted series on television, a 76 percent increase from just five years earlier in 2009 when there were only 211 (Holmes). While there is still a strong demand from audiences for new television series, there is a declining urgency to view them when they premiere, instead opting to wait until they are available on SVOD services months later.

This delayed viewing in later windows is causing a massive retooling in the strategies of developing, marketing, and monetizing new series. New content is confronted with increasing complexity in reaching viewers given the continuing fragmentation of audiences, which necessitates larger marketing budgets in order to cut through the noise, build awareness, and
drive sampling. As John Landgraf, CEO of FX Networks, has predicted, “2016 will be the year when television declines” (Littleton). The television ecosystem will naturally force itself into a contraction as the challenges of creating and monetizing new television content increasingly strain audiences and the overall economics of the business.

One of the primary drivers retaining subscribers in the cable ecosystem is access to live sports (Bonebright). Sports programming occupies a unique value proposition since it is predominantly watched as live, scheduled exhibitions. In fact, a 2015 report from Citibank proclaimed, “over the long-run, we expect the pay TV penetration in the U.S. to mirror Europe: only sports enthusiasts will subscribe to pay TV since sports is not available on SVOD platforms” (Udland). As a content type that is not heavily time-shifted and has very low repeatability, this is in significant contrast to scripted content like The Sopranos or Six Feet Under, which have a nearly infinite shelf life since audiences will choose to watch them years later.

The cable bundle is devaluing in the minds of consumers as costs rise and audiences continually shift to lower cost alternatives that, though not necessarily inclusive of the most recent content, contain enough attractive library content to satiate consumer appetites. These shifts will force the television industry to adapt over the next decade as these new economic
realities come into clearer focus and the media landscape continues to fragment.

The Future of Television

The future of the television industry will be largely shaped by cord cutters and cord nevers as the economics are forced to adapt and shift from traditional cable subscription bundles and television networks are eventually delivered entirely over broadband connections within ecosystems of apps. Rising costs of cable bills will be a driving element of this value shift along with waning consumer demand in recent cable content, largely a result of attention competition from subscription streaming services like Netflix.

As more consumers are motivated to cut the cord, and those without a cord are increasingly motivated not to subscribe, the television industry will be forced to adapt in two primary ways: offer smaller bundles of networks — colloquially referred to as skinny bundles — as well as networks on an à la carte basis.

Bloated Bundles Become Skinny Bundles

Over the last several years, the television industry has become arguably bloated with both networks and content. With the six media conglomerates owning 70 percent of the cable television ecosystem in the United States
(Lutz), they have substantial leverage in forcing carriage deals with MVPDs for their smaller networks.

These additional carriage fees are then passed on to consumers in their monthly cable bills. Subsidization has fueled a highly lucrative ecosystem of networks, the stability of which had been largely resistant to upheaval until robust, easily accessible entertainment alternatives — like Netflix, Hulu, and Amazon Instant Video — began to leverage the power of broadband and digital technologies in a truly disruptive way.

In 2008, the average cable household received 129 networks, which vaulted to 194 by 2014 — an increase of 50 percent (Nielsen, “Advertising”). In that same time, however, the number of networks the average cable household watched per month increased only from 17 to 18 (Nielsen, “Advertising”). With 50 percent of all basic cable viewing occurring among the Top 20 highest-rated networks (Nielsen, “Basic Cable”), consumers are paying for access to an increasing number of networks they do not actually watch. The television industry has reached a point where consumers have become paralyzed with an abundance of choice and are becoming less willing to pay for it.

As a solution to the bloated bundle, MVPDs will likely offer skinny bundles containing approximately 20 to 25 of the highest-rated television networks at a much lower price point of $30 to $40 per month. With the
average video portion of a subscriber’s cable bill at roughly $100 per month (Leichtman Research Group), the availability of a $30 to $40 option will have a two-fold effect on the television industry: incentivize subscribers who are contemplating cutting the cord not to cut the cord completely — colloquially referred to as cord shaving — and provide a gateway to convert cord nevers into subscribers.

Converting cord nevers into subscribers will be a trickier proposition since the millennial generation, its largest cohort, has a stronger resistance to participating in the cable ecosystem. Conversion is more likely to occur when a new entrant arrives with a strong millennial brand loyalty — such as Apple — that can offer its own bundled service of networks over broadband in a unique consumer experience different from a traditional cable, satellite, or telecommunications provider.

A battle of digital broadband platforms will inevitably occur to capture dominant market share. OTT services and platforms such as Apple TV, Roku, Hulu Plus, Sling TV, Amazon Instant Video, and Sony PlayStation Vue will compete to become the new skinny bundlers, differentiating themselves from MVPDs with their unique consumer-friendly interfaces and distinct approaches to content curation, discovery, and navigation.

While MVPDs will also concurrently offer comparable skinny bundles, technology companies like Apple and Hulu are far more experienced and
skilled in the creation of superior, consumer-intuitive interfaces and platforms, and will likely cannibalize these traditional providers over the next several years. In this scenario, a traditional MVPD like Comcast or Time Warner would then become mostly an internet service provider ("dumb pipes") for video content delivered through these newer digital distribution platforms.

The significance of this shift will be in the ability of technology companies outside of the traditional cable television world to disrupt the stranglehold of MVPDs. This further underscores the power of the Internet as a democratizing distribution platform. As long as everyone can access the same pipes, innovation is possible to a degree far surpassing the traditional closed system, fueling the creation of different and more enriching television experiences for consumers. This notion of maintaining the Internet as an open system of information — in which all content is treated equally and without bias — has also spurred the highly divisive issue of Net Neutrality in recent years (Cohen, "Net Neutrality").

While a skinny bundle of the top-rated basic cable networks will likely be offered, skinny bundles could also be offered independently by each major media conglomerate. NBCUniversal could potentially offer their own skinny bundle directly to consumers at a price point of their choosing, inclusive of their flagship broadcast network NBC as well as some of their marquee basic
cable properties like USA Network, Syfy, E!, Bravo, Oxygen, and CNBC. A comparable situation could arise with 21st Century Fox, Viacom, Time Warner, The Walt Disney Company, and CBS Corporation each offering their own bundles of networks to consumers.

A similar scenario might occur on the broadcast network side of the business as well. Though a general skinny bundle of the top-rated basic cable networks will likely include the four major broadcast networks (ABC, CBS, FOX, NBC), broadcasters may also join forces to create their own separate broadcast bundle. Aereo attempted this bundling scenario independently of the broadcast networks by offering a service in 2012 which provided customers virtual access to their own individual micro antennas in a local warehouse for over-the-air broadcast transmissions delivered through broadband.

Aereo cleverly argued that it served only as a mechanism for consumers to exercise their governmental right to access free over-the-air broadcast transmissions, thereby circumventing the payment of retrans fees to local stations. The service was ruled illegal in 2014 by the Supreme Court of the United States, which decided that Aereo was in fact retransmitting broadcast feeds and acted essentially the same way as a cable, satellite, or telecommunications provider. Aereo was subsequently shut down over this ruling (Frizell).
Though Aereo did not survive, it is likely that the major broadcast networks could team together and offer a similar bundle of live and on-demand content for a monthly fee. Each broadcast network could also begin offering their own digital à la carte premium subscriptions as well over broadband, like CBS recently launched with *CBS All Access* for $6 per month. Since broadcast networks can also be accessed for free over the air, however, convincing consumers to pay will be challenging unless these services include enough exclusive content to justify the premium price tag, akin to CBS’ decision to air new episodes of *Star Trek* only through *CBS All Access* starting in 2017 (Goldberg).

Regardless of who ultimately owns the bundle, however, the television industry will shift from bloated bundles containing nearly 200 channels to skinny bundles containing a couple of dozen. This will ensure that the largest, most valuable networks survive within the economics of the bundle while providing consumers with lower cost options and choice. With skinny bundles come causalities, however, as smaller networks are removed and forced to band together into their own skinny bundles or offer themselves à la carte at higher premium subscription rates.
À La Carte Networks

For smaller networks that are excluded from the skinny bundle, some will join forces to form more genre-specific skinny bundles, while others will offer themselves à la carte. A benefit of à la carte is that a network needs far fewer subscribers since it is no longer subsidized. Those consumers who pay for a network individually are more likely to be fans of the content and willing to pay a premium for it. For example, a niche network specializing in the crime and mystery genre like Cloo — which is owned by NBCUniversal — receives a monthly carriage fee of approximately ten cents per subscriber, though can offer itself à la carte for $1 and then only need one-tenth of the subscriber base to generate the same amount of revenue.

À la carte, therefore, can be beneficial to smaller networks with niche content offerings, though the general nature of à la carte can be highly risky if not enough customers subscribe to a particular network. In this scenario, several lower-rated networks — such as Gospel Music Channel — could potentially cease operations altogether, becoming casualties of the overall contraction of the television industry.

Larger networks like FX and AMC face greater challenges going à la carte since an unsubsidized price point would need to be far higher in order to justify the significant expenses involved in producing premium scripted content like American Horror Story or Mad Men. Moreover, as ad-supported
basic cable networks, the complexity of distribution agreements with MVPDs largely inhibits the ability to also offer à la carte options since MVPDs have a deep interest in preserving the economics of their massive bundling businesses.

If larger networks like FX and AMC did go à la carte it would likely not be until they controlled the full rights to their back libraries to increase the robustness of their à la carte services. With so many library content rights being sold to SVOD services like Netflix, purchasing these rights back is an expensive proposition in the short term, adding a further layer of risk and complexity in the attempt to offer premium offerings direct to consumer (Bond and Szalai). As SVOD continues to cannibalize the attention of traditional television, there will likely be a growing effort over the next few years to exercise more strategic restraint in selling too many library rights to SVOD services.

While à la carte appears appealing to consumers on a cursory level, it is important to recognize how much subsidization is interwoven throughout the economics of the entire cable television business. If all basic cable networks were only à la carte options, each network would cost substantially more to receive. Bundling benefits the consumer since it can offer considerable content diversity for the lowest overall price.
ESPN, for example, costs a carriage fee of roughly $6.50 per cable subscriber because it is classified as fully-distributed and included on most basic cable tiers (Bi). Therefore, most of the 100 million cable subscribers pay for the network regardless of whether they watch ESPN or not. Of the roughly 100 million cable households, approximately 20 percent watch ESPN at some point on a monthly basis (Nielsen, “Reach & Frequency”). If the entire television ecosystem transformed into an à la carte model, and it was assumed that all households that actually watch ESPN would indeed pay for the network individually, each of ESPN’s 20 million à la carte subscribers would need to pay around $32.50 per month to equal the roughly 100 million subscribers each paying $6.50 per month.

This is why subsidization through a bundling model has proven an effective economic approach while providing a wide spectrum of choice to consumers. A 2015 survey from Digitalsmith found that consumers are willing to pay between $2 to $3 per month for an individual network, or $38 for all of their à la carte networks combined (Roettgers, “À La Carte”). Once consumers cobble together several à la carte networks, each at higher price points than normal carriage fees, a tipping point is eventually reached where the aggregate cost aligns with the cost of subscribing to a cable bundle with more networks.
Investment bank Needham & Company estimated that approximately 124 networks could be eliminated in a full à la carte television ecosystem, along with 1.4 million jobs (James, “À La Carte”). Television economics are so entrenched in subsidization that a full à la carte television system is just not feasible economically and would jeopardize tens of billions of dollars per year in both subscriber and advertising revenues overall. More importantly, the motion picture and television industries are centered around storytelling and such a substantial economic impact would limit the breadth and quality of great television storytelling that can be delivered to audiences.

Premium networks like HBO and Showtime, on the other hand, have always operated on an à la carte business model, though also have far fewer subscribers than most basic cable networks. HBO averages only 25 million subscribers out of approximately 100 million cable households (Nielsen, “Universe Estimate”), though the network is priced at a much higher price point of $15 per month. Contrast this with basic cable networks like FX or AMC which, though fully-distributed in nearly 100 million cable households, only receive a carriage fee of less than $1 per subscriber (Molla).

Since premium networks are already offered à la carte through MVPDs, these networks are in a different legal position from that of basic cable networks in regards to extending their à la carte offerings to digital platforms. In April, 2015, HBO launched a digital à la carte subscription called HBO
NOW, delivered over broadband, and entirely divorced from the traditional cable ecosystem.

This was a significant turning point for the television industry since it marked the first time a major network offered an à la carte subscription outside of a traditional cable, satellite, or telecommunications provider. Showtime followed suit in June, 2015, offering their à la carte subscription add-on Showtime Anytime through the Hulu Plus platform and in December, 2015, both Showtime and Starz became available as à la carte add-ons to an Amazon Prime subscription (Roettgers, “Amazon”).

By unbundling HBO, Showtime, and Starz content from the exclusivity of the traditional cable bundle, the goal of services like HBO NOW and Showtime Anytime is to specifically monetize the roughly 16 million television households without cable subscriptions.

Since premium networks traditionally operate on a revenue sharing model with MVPDs, the $15 a customer pays Comcast for HBO is split in half between HBO and Comcast. By offering HBO NOW over broadband at the same $15 price point, and without an MVPD intermediary, HBO has the potential to receive more revenue per subscriber. As digital intermediaries replace traditional MVPDs, however, premium services like HBO NOW will likely have a bifurcated approach, offering themselves both directly to
consumers as well as through digital intermediaries like Hulu Plus and Amazon Instant Video.

Regardless of whether an intermediary is used, HBO NOW illustrates the profundity of the Internet as a disintermediator of distribution, foreshadowing a television world where an increasing number of content creators are able to go directly to consumers and control all aspects of their distribution.

When cobbling together multiple à la carte networks and services, however, consumers are ultimately paying a lot more for a lot less. Therefore, the future of the television industry will likely revolve around a mixture of both skinny bundles and à la carte offerings in order to maximize an optimal level of both choice and economic value for television audiences.

**Broadcast Networks Transform Into Cable Networks**

Since the future of television distribution will one day be entirely over broadband connections, another interesting scenario is whether the definition of a traditional broadcast network will change. The actual need for a network of local terrestrial stations becomes largely irrelevant once a broadcast feed is delivered over broadband, making traditional broadcast networks more akin to cable networks.
As a result, broadcast networks could potentially abandon their local station businesses in favor of adopting the economics of cable networks, receiving revenues from a single national feed for each subscriber instead of cobbling disparate retrans and reverse retrans fees from dozens of local stations. Local stations would then become entirely independent from the major broadcast networks, turning solely into production companies creating local news, sports, and weather programming.

Chase Carey, former COO of 21st Century Fox, threatened a similar course of action during the rise of Aereo in which FOX would cease all over-the-air broadcast transmissions to prevent Aereo subscribers from accessing FOX programming (Cohen, “Aereo”). In reality, however, broadcast networks transforming from over-the-air operations into cable networks would require substantial regulatory changes given the nature of broadcast networks within the purview of the United States government.

As a “public trust,” broadcast networks exist to serve the public of the United States, whereby all citizens have the right to access broadcast network transmissions free of charge. Thus, while a possibility exists that broadcast networks will eventually become cable networks, it is more probable that broadcast networks will retain their local station businesses for the foreseeable future and keep the economics intact.
**Advertising Becomes More Targeted**

Though the television industry’s answer to preserving the value of pay television will indeed alter the economics on the subscriber revenue side of the equation, the advertising side will also experience significant changes over the next decade. Given the substantial reach that television screens are able to command, advertising will still remain a relevant part of the television ecosystem though will become more focused and targeted.

The concept of live television will largely be a relic of the past as the vast majority of television content is accessed on demand and consumers increasingly disassociate content from schedules. This has the potential to augment advertising since content that is fully on demand no longer needs technology like the DVR to time-shift, which exists solely to record scheduled content for later playback.

With the rise of DVRs and methods of skipping advertising spots, the thirty-second spot has naturally experienced a loss of efficacy in recent years. This has forced advertising strategies to evolve in which brands and products are more uniquely integrated within the content itself and less prone to being skipped like traditional spots. As television shifts further into an on-demand world with services such as set top box VOD and Hulu, the fifteen and thirty-second spots will likely experience a resurgence since the nature of on-demand interfaces are inherently non-linear and unskippable.
In a more on-demand world, the future of advertising will be more targeted, data-driven, and programmatic, as the capabilities expand to dynamically insert ads within content in real time. Programmatic advertising, though still in its infancy, encompasses all of the technologies involved with the automatic selling, placement, and serving of advertising within video content, and all within fractions of a second. Broadband and digital technologies have created an environment in which the human intermediaries once tasked with manually accomplishing these tasks can be replaced with the automation of big data and algorithms at a level of efficiency never before realized.

Given consumers’ increasing intolerance for advertising disruptions, there will likely be fewer advertising spots overall, though will command higher rates since spots will be more targeted, relevant, and engaging. A significant effect of the mass adoption of advertising-free services like Netflix was in audiences becoming very intolerant to advertising within content (Bond). As James Murdoch, CEO of 21st Century Fox, has lamented, “we work so hard to create a suspension of disbelief and then interrupt it to sell Bounty” (Robinson).

Moreover, content services that are ad-supported will likely start offering advertising-free content environments as well for a premium fee, similar to the service Hulu Plus started offering in September, 2015. For a 50
percent monthly increase from $8 to $12, users are given access to all Hulu Plus content without advertising, providing yet another layer of consumer choice in the media landscape for those willing to pay for the convenience (Griffith).

Trends are largely dictated by consumers, and while audiences have become increasingly less tolerant of advertising disruptions, tolerance will likely improve as advertising breaks become increasingly shorter, more relevant, more interactive, and more engaging. With advertising breaks on the broadcast networks often reaching four minutes or longer, the entire advertising relationship with audiences will need to adapt in order to find a more symbiotic balance between the needs of both advertisers and viewers.

The “Appification” of Television

While the future of the television industry will focus on skinny bundles, à la carte network offerings and more targeted advertising, the platforms in which this new television reality exists will ultimately center around apps, as grids of linear scheduled program guides become artifacts of the traditional television world. The future of television will be fully non-linear and on demand, leveraging the power of broadband and digital technologies to create much more immersive, interactive, and social experiences for content creators and audiences alike.
Television content will exist within branded app experiences accessed through interactive graphical user interfaces and distributed across a variety of digital platforms, from cable boxes and Smart TVs to videogame consoles and OTT devices. Moreover, not inhibited by the storage limitations of physical media like DVD or Blu-ray discs, digital apps have the potential to package an unlimited amount of bonus material, including behind the scenes footage, image galleries, cast biographies, interactive multimedia, and updated social media feeds.

The digital revolution has spawned advances in broadband and digital technologies over several decades to finally provide for the television world what YouTube originally created for the Internet: democratized content distribution. While creators can also distribute content on YouTube through a YouTube-branded app on a television screen, the ability for any content creator to design their own branded app experience for televisions elevates the YouTube concept one step further. Chromecast and Apple TV are currently the two dominant OTT platforms in the marketplace, accounting for roughly 55% of all OTT streaming devices sold in the United States, and both offering software development kits (SDKs) for the creation of apps (Archer; Ingraham; Passery).

In this new television world of democratized distribution through apps, networks are no longer the gatekeepers of television screens. Since their power
of regulating the flow of content diminishes, this undermines a primary role traditional networks have played for decades. As distribution evolves, the power once held exclusively by networks and traditional distributors will expand to those studios and production companies deciding to distribute their content directly to consumers.

In this scenario, a studio like Twentieth Century Fox Television could bypass traditional network distributors like FOX and Showtime entirely and self-distribute television content through its own branded app, monetized through a mixture of advertising and subscriptions. The studio then becomes the content curator for the audience, a role traditionally held by networks.

This idea of content curation will remain one of the most important components of the media business in the future, especially as broadband and digital technologies empower an even greater number of creators to flood the ecosystem with content and apps. While curation mechanisms through algorithms and social media will still play a large role in guiding audiences to content, viewers will likely still gravitate towards large trusted curators like HBO and CBS to aid in content discovery amid an endless sea of options. As the amount of content continues to increase in the marketplace, further complexity arises for viewers in finding content that aligns with their tastes.

While networks may no longer control distribution from a technical sense, their relevance as branded content curators lies not only in their
considerable audience bases but in the substantial marketing and publicity muscle they provide as well. Moreover, as with any intermediary in a supply chain, branded television networks offer a valuable monetization and financing layer to studios and production companies not wanting to fully burden themselves with the substantial costs associated with production and marketing. Content creators deciding to go directly to consumers bypass this layer altogether, fundamentally changing the very economics of how costly television content is financed and produced.

Brands, therefore, will play an increasingly vital role in the future of television. While the digital revolution is empowering more content creators than ever before as the traditional walls of distribution erode, building awareness of a new content offering to drive sufficient sampling remains a challenge. Though services such as Facebook, Twitter, and Instagram have allowed any content creator to leverage their social networks to build awareness, large branded content curators like NBC and FX have the capability to build awareness on a scale that is very difficult to match, especially for those creators without established name recognition.

On the other hand, content creators with very established brands, like Ryan Murphy of *Glee* and Louie C.K. of *Louie*, are already in an advantageous position to create their own content apps since they can leverage their loyal audience bases. As such, the democratization of distribution affords them the
ability to now bypass the very networks they used to help build their brands. In any event, the importance of brands as content curators — either as apps from networks or from content creators themselves — will serve as essential beacons within an increasingly crowded content ecosystem as audiences look for assistance in finding the types of content most relevant to them.

Broadband and digital technologies, therefore, will likely not fully eliminate intermediaries within the television industry’s distribution system just like movie theaters will not entirely disappear from the motion picture business. As an analogy to intermediaries in the publishing and music industries, there will be one segment of authors and musicians who create their own novels and albums and market and distribute them directly to consumers. Conversely, a segment of authors and musicians will exist who rely on the scale of intermediaries like publishers and music labels to help finance, market, and distribute their works.

This “appification” of television (Salkowitz) will explode rapidly over the next five years as the traditional linear television system erodes. As broadband and digital technologies continue to evolve, they will empower brands to curate content through apps that are more immersive and interactive, providing an even greater number of options for storytellers and audiences to connect in new and exciting ways.
CONCLUSION AND FINAL THOUGHTS

This thesis has endeavored to examine the role technology has played in shaping the media landscape over the past several decades in order to explore how the evolution of broadband and digital technologies will impact the distribution and exhibition of motion picture and television content in the future.

At their core, technologies are tools meant to achieve human goals. Through advances in technology, society is continually shaped in profound and powerful ways since technology has the capability to fundamentally change the way people live. This was evidenced through the agricultural and industrial revolutions, and is now underway in the digital revolution as technology is both driving and steering an explosion of activity.

The digital revolution empowered users with the birth of microprocessors, personal computers and the World Wide Web, which helped propel humanity into the information age and altered the paradigm of how content could be created, stored, disseminated, retrieved, and manipulated. Today, broadband and digital technologies have permeated virtually every facet of society and across nearly every industry.

The motion picture and television industries, specifically, exist to satiate a human need for storytelling. While technology has impacted the production and post production processes of motion picture and television
content creation in substantial ways, true industrial change will occur over the next decade as broadband and digital technologies radically transform the modes by which this content is distributed and ultimately consumed. Three principal paradigm shifts occurred over several years to shape the media world we experience today: the time-shifting of scheduled content, the rise of high speed Internet, and the explosion of media consumption on mobile devices.

With the invention of the VCR as the impetus for time-shifting, content could be freed from the shackles of scheduled exhibitions for later playback. VCRs subsequently fueled a home entertainment market, with physical media evolving into optical disc formats such as the DVD, and Netflix marrying this storage format with the Internet to revolutionize the entire rental market.

As the Internet evolved, media sharing through services such as Napster and P2P networks fueled a culture of simpler and more immediate media piracy. The release of Apple’s iTunes music service attempted to stymie these illegal efforts while also providing a major brick in the foundation of digital media distribution on a massive scale. In turn, iTunes helped fuel the explosion of Apple’s iPod music hardware which started a new era of digital media mobility.

Over time, bandwidth speeds continued to increase, with YouTube fueling the mainstream adoption of video streaming. This negated the need
for large file downloads and storage requirements. Leveraging broadband technologies fundamentally changed the entire paradigm of video distribution since the pipeline became democratized for any content creator.

As consuming multimedia content over the Internet exploded, the creation of the iPhone transferred these consumption behaviors onto mobile devices, and video streaming evolved from predominantly amateur content on YouTube to premium content distributed through services like Netflix and Hulu. With viewers consuming more premium content online, internet-connected devices were invented to marry the Internet with television screens, showcasing for the first time that all of the pieces existed to provide a full end-to-end video distribution system over the Internet.

All of these technological advancements contributed to the existence of today’s media environment, which is one of ubiquitous personalization, choice, and flexibility as audiences continue to fragment across a sea of content and platforms. Large digital stockpiles of library content on services like Netflix and Amazon Instant Video are driving a resurgence of older television series, fueling an on-demand culture of binge viewing, and shifting attention away from the traditional cable ecosystem. Motion picture and television content is accessible in more ways than ever before, delivered over Internet connections to a variety of screen types and sizes, and revolving around new modes of curation, discovery, interaction, and social discourse.
Looking to the future, radical industrial change in the motion picture and television industries will occur when substantial disruption occurs in the two primary economic underpinnings of both industries: theatrical attendance for motion pictures and the lucrative cable bundle for television. As theatrical attendance continues to decline, motion picture content will migrate to distribution models centered around SVOD platforms and Premium VOD, with delivery moving increasingly over broadband.

On the television side, the bloated cable bundle will be forced to adapt to skinny bundles of networks and à la carte offerings, and advertising will become more targeted, data-driven, and engaging. The entire television ecosystem will ultimately revolve around content curated through apps, as the appification of television fuels the democratization of distribution for an even greater number of content creators.

The media business is undergoing dramatic changes as technology continues to rapidly advance and profoundly shift the entire landscape. Ultimately, however, technology exists to empower storytellers to tell the stories they feel compelled to share with the world. Regardless of the technologies used to create, distribute, or consume storytelling, it is important to remember that the most important aspect of the motion picture and television industries remains the story itself.
As storytelling animals, stories strengthen and elevate the human experience and provide opportunities for human beings to connect and empathize with those different than themselves. Centuries ago, our storytelling ancestors recounted tales around a fire to their audiences, and broadband and digital technologies are making this kind of intimate, direct experience a reality on a global scale. This is truly the most exciting time in the media business as the technologies from the digital revolution coalesce to provide more options for people to connect than ever before, empowering an even greater number of storytellers around the world with the ability to enrich the human experience one story at a time.
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