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**THE IMPACT OF TECHNOLOGY ON THE ENTERTAINMENT DISTRIBUTION
MARKET: THE EFFECTS OF NETFLIX AND HULU ON CABLE REVENUE**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT
OF THE DEGREE OF THE BACHELOR OF ARTS**

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Abstract

Online streaming has revolutionized the way that people consume films and television. This study will examine how Netflix and Hulu have disrupted the North American distribution oligopoly and assess whether their low subscription prices are adversely affecting major cable companies who dominate the distribution sphere. A review of existing literature on the topic will explore the influence of the Internet on the entertainment distribution oligopoly as well as consumer trends and behavior favoring Netflix and Hulu. Additionally, data from 2007 to 2014 will be used to analyze variables that indicate a correlation between Netflix's and Hulu's growth and Time Warner Cable's decreasing revenue.

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Introduction

Rapid technological innovations over the past 10 years have disrupted entertainment distribution in a way that has been unprecedented. As personal computers, laptops, tablets, and smartphones have become common household goods, emerging companies have embraced technological advancements and incorporated them into their business models to create a revolution in the way that audiences consume entertainment. New firms such as Netflix and Hulu have grown through the use of the Internet as a platform to distribute films and television series, cutting costs such as physical inventory, set-top boxes, remote controls, and modems. Nevertheless, they are able to offer customers a large variety of shows and movies that satisfy both popular and niche demands.

These newer companies bring a wider assortment of television and video content to consumers who previously were harder to access. Rather than delivering a bundle package of generic television stations or only offering big commercial content at a high price, they have a library that also contains independent films and productions that never made it to theaters or larger rental services. The larger supply of video content and lower costs associated with distribution allow for more competitive pricing among the newer companies that are disrupting the old film and television oligopoly. If Netflix and Hulu are able to enter the oligopoly and decrease prices significantly, how does that effect cable firms including Time Warner Cable who haven't adjusted prices accordingly?

In this thesis, I analyze Netflix and Hulu to understand how technology has opened the door for smaller firms to enter this oligopoly; furthermore, an overall

decline in Time Warner Cable's revenue indicates that low, competitive subscription prices set by Netflix and Hulu are adversely affecting cable firms' ability to compete. I look at technological shifts that have occurred over the past seven years, how these companies have incorporated them during these specific periods, and patterns in prices and revenue throughout this timeline. Examination of variables pertinent to both consumers as well as Netflix, Hulu, and Time Warner Cable will develop a bigger picture of how the supply and demand for entertainment has shifted and affected cable revenue.

Related Literature

Technological innovation over the past ten years, especially through easy access and the commercialization of the Internet, has revolutionized film and television distribution. The ever-changing nature of technology and consumer behavior has prompted rapid changes in distribution methods from year to year, making this an intriguing topic of research within economic, business, legal, and media sectors. Tom Evens (2014) dissects the clash of television platforms, drawing macroeconomic and microeconomic analyses of the role that technology has in disrupting or shifting the market. Camille Johnson (2014) uses a legal lens to examine how the current distribution oligopoly, threatened by emerging consumer trends supporting online distribution, may need government intervention to keep media conglomerates from using restrictive practices that block new companies from emerging. Additionally, Alejandro Pardo (2013) focuses on Hollywood's

distribution renaissance and how existing business models must adapt to technological changes in order to remain competitive.

The Entertainment Market Oligopoly

In economics, an oligopoly is a market structure or industry that is heavily influenced and dominated by a few large firms. The small concentration of companies within oligopolies results from barriers to entry, such as high costs, that keep newer and smaller firms from partaking in the market. The goods that these profit-maximizing companies produce are almost exactly the same, which is why firms are constantly competing to dominate large shares of the market. As a result, they are interdependent on one another, keeping similar prices to stay competitive. Oligopolistic firms tend to have control over supply, giving them significant influence over prices. Nevertheless, pricing tends to be consistent among all firms because they risk losing revenue and market shares to competitors if they raise the prices of their goods. Conversely, if they decide to lower prices of their goods, other firms will have to do the same to remain competitive.

Mass distribution of entertainment content tends to be done through cable and satellite television, as this is the most common mode for people to consume television and films. Bloomberg reports industry leaders and their market shares in the cable and satellite industry, indicating that there are ten major firms in the North America sector comprised of the following companies: Comcast, Direct TV, Time Warner Cable, DISH Network, Charter Communications, Cablevision Systems, Echo Star, Shaw Communications, BCE Inc., and Rogers Communication. Of these

companies, Bloomberg specifies that Comcast has the highest sales followed by Direct TV, Time Warner Cable, and DISH Network. Comcast has a market share of 26.7%, Direct TV's market share is 20.5%, Time Warner Cable has a share of 14.20%, and DISH's share is 9% (Bloomberg 2015). These four companies together hold 70.4% of industry shares, and the six other companies combined have a mere 29.6% (Bloomberg 2015). A \$202.5 billion industry controlled and run by a relatively small number of firms is a strong indication of an oligopoly.

Evens analyzes the entertainment distribution market through characteristics including industry concentration, number of buyers and suppliers, entry barriers, and technological changes to evaluate its oligopolistic nature. Economies of scale are prevalent in cable and satellite distribution markets within the entertainment industry. American entertainment and leisure consists largely of film and television consumption, which is why the majority of households tend to purchase these services. High demand for entertainment programs means that companies in this industry can produce their "goods" at a larger scale and decrease input costs. Furthermore, consolidation is a significant characteristic in media distribution as a means of maximizing efficiency in this economic setup.

Mergers, acquisitions, and vertical integration increase these firms' competitive positions and bargaining power significantly, which has led to a tendency of oligopolistic control (Evens 2014). To support Even's observations about industry consolidation, one can look at the number one leader in cable distribution. Comcast is a major conglomerate whose services extend beyond providing cable television, Internet, and phone services. It bought NBC Universal,

another major conglomerate that owns studios, theme parks, broadcast networks, and cable channels. Additionally, Time Warner Cable has the second highest market share in cable distribution. Along with its function as a cable company, Time Warner Cable's assets include HBO, Warner Brothers, Cartoon Network, CNN, New Line Cinema, and more. Comcast's ownership of NBC Universal's content and Time Warner Cable's ownership of Warner Brothers and other assets have clear advantages because they control their own supply chain. With the ownership of content creators, they can generate and negotiate favorable deals for their core businesses while increasing content prices for competitors.

Film and television distributors' consolidation has created an industry with less competition and much more bargaining power. In the market structure, there is a larger group of broadcasters and a small number of major distributors. The number of competitors in distribution is a major indicator of the oligopoly and points to the difficulty that smaller competitors have: "The strength of a firm's competitive position ultimately depends on the presence of substitutes, and the ability of suppliers (or buyers) to bypass powerful parties to bargain better commercial terms" (Evens 2014). Evens suggests that pooled bargaining or collective action may be a useful strategy for smaller or newer companies to have more bargaining power when competing against consolidated or vertically integrated conglomerates. Johnson claims that alternatively, smaller companies who are not part of the vertically integrated system have a hard time competing and are typically forced to integrate through unfavorable arrangements with the bigger video programming distributors" (Johnson 2014).

Barriers to entry, including high entry costs, have historically protected major entertainment companies from competitive entry, reinforcing bargaining power in television markets as well (Evens 2014). In particular, these prices include content and physical capital. Television distribution has typically been done through cable and satellite, as consumers are able to watch programs on their TVs through cable boxes and satellite dishes set up in their households. The price of content is high, especially for newer firms who don't have established relationships with content creators. As mentioned before, Comcast and Time Warner Cable own content supply and can obtain favorable deals for them. What impact does this have on emerging firms? Comcast and Time Warner Cable can engage in anticompetitive behavior that limits the content that NBC Universal, Warner Brothers, etc. are willing to sell to these newer firms or may try to block them out completely by signing exclusive deals. Additionally, they may price the content at an astronomically high cost that newer and smaller firms won't be able to pay. This strengthens power dynamics among oligopolistic companies and keeps the industry concentration small.

The second entry cost that is detrimental for newer companies is the price of physical equipment they must invest in (Johnson 2014). 2014 Bloomberg reports project the growth rate in sales revenue for Comcast to increase 7.7% in 2015 and Time Warner Cable to grow 3.43% (Bloomberg 2015). With this amount of growth for such large companies, these two firms have the means to continue mass investment on capital and equipment such as cable boxes. Smaller firms looking to enter, however, would have to put down a massive investment for equipment that

they can't guarantee will be sold. Having inadequate initial funds for investment and a weak client base, new firms may face challenges breaking into the cable industry or staying afloat. The absence of public industry data indicating how much cable companies are paying for the production of cable boxes, machinery, raw material, makes it hard to determine the price new firms would have to invest in order to manufacture cable boxes. It is unrealistic to assume that an emerging firm would be held in comparison to Comcast or Time Warner Cable, but the company would at least need to be comparable to Rogers Communication in order to enter and remain competitive in the oligopoly. Bloomberg's industry data indicates that Rogers Communication has the smallest market share in the industry with a total of 2.02 million North American subscribers. To be on an equal playing field as Rogers Communication, an emerging firm needs to be prepared to service a similar amount of customers; moreover, it would most likely have to invest in the production of about 2.02 million cable boxes. This massive investment may be particularly risky for smaller firms who are unsure if they will make it in the industry. High entry costs as well as vertically integrated corporations' exclusive access to content have limited the number of firms that can enter, compete, and survive in the distribution realm.

Technology's effect on the longstanding oligopoly

Technological innovation has been a major factor that can potentially disrupt competition and the status quo of the industry's structure. Evens claims, "New technology erodes entry barriers and challenges oligopoly control over bottlenecks

that give rise to gatekeeping power” (Evens 2014). Pardo echoes this sentiment that technology such as the Internet has been erasing borders and shifting paradigms of television distribution that were once defined and controlled by these major firms. Pardo explains that Hollywood is currently at a digital crossroad characterized by two central movements: “On one hand, the emergence of a new market for the commercialization of audiovisual products (Internet, digital reproduction devices, smart phones, smart TVs)...and, on the other, the emergence of a new type of consumer, known collectively as ‘the iPod-’ or ‘the Net-generation’ (Tapscott 2009)” (Pardo 2013). Because of the abundance of consumers who have access to the Internet and devices that connect to the Internet, companies such as Netflix and Hulu did not need to invest in such high entry costs, capital, and labor for their streaming services; moreover, their businesses rely on Internet access in order to function, avoiding the need to purchase, manufacture, and install cable boxes or satellite dishes.

With lowered initial barriers, there is potential for more competition among distributors. While Evens argues that entry barriers have decreased in the face of digital abundance, he believes that they are still likely to persist because of the presence of economies of scale (Evens 2014). Nevertheless, he claims: “Digital technology not only increases efficiency in the supply chain, but also tends to shift bargaining power to those parties that adapt quickly in order to reap the fruits from the new digital opportunities” (Evens 2014). Newer companies in the distribution realm, particularly Netflix and Hulu, have built their company models in ways that

mirror and quickly adapt to technological innovations, forcing established firms to keep up.

Consumer Influence

Consumers have a vital role in the changing distribution market. While Johnson and Pardo refer to changing television audiences by different names, they both agree that technology has had a significant impact on the way that audiences consume and watch television. Johnson refers to two different types of emerging consumers who are threatening the traditional distribution model. She describes “cord nevers” as a group of “tech savvy ‘20-somethings” who have never subscribed to traditional multichannel video programming, opting for Internet streaming options instead. Cord cutters are consumers who previously paid for cable or satellite television, but have decided to stop subscribing. Like the cord nevers, they have chosen to access television and programs through the Internet instead (Johnson 2014). Rather than examining emerging audiences based on their television viewing habits, Pardo looks to their ability to keep up with technological devices to determine their behavior. He frames the digitization of entertainment with “the rapid expansion of the ‘Apple ecosystem” (Pardo 2013). Since 2001, Apple has succeeded in selling over 140 million iPods, prompting equally successful sales of iPad, iPhones, and other devices (Pardo 2013). Additionally, Apple commercialized more than 3 million movies as well as 100 million episodes of television shows since October 2005 (Pardo 2013). This innovation has shifted the way that consumers interact with technology: “This ‘iPod/iPhone/iPad generation’

epitomizes the new peer group of users whose audiovisual experience is based on all sorts of media platforms and whose profile to a large extent mirrors that of the cinema-going public and those who play videogames” (Pardo 2013). As the Internet is readily available to consumers and smart devices are common household items, these new technologically driven users interact with entertainment in a more efficient way. Marketing experts have deduced that numerically this generation of users has reached a critical mass, and their consumer practices contrast those of previous generations (Pardo 2013). With the prevalence of cord cutters, cord nevers, and a generation of Apple users, Johnson and Pardo view changes in distribution as a response to growing demand for digital platforms for online television viewing.

Newer Players in the Distribution Market

Currently, the leaders of online content distribution include Netflix and Hulu. Netflix, established in 1999, has evolved from a mail order DVD rental company to an online streaming service (Johnson 2014). Competing with Blockbuster, it allowed consumers to conveniently rent movies from the comfort of their own home through the Internet. By 2007, Netflix revolutionized distribution by employing a Watch Instantly feature that allows audiences to play select movies and shows immediately on their computers. Their online streaming feature has elevated their business significantly and has become their major source of revenue, serving more than 40 million subscribers (Johnson 2014). For a fixed subscription price of \$7.99 per month, consumers can have access to unlimited online streaming as well as DVD

rentals. With rapid success and growth over a relatively short timespan, the company has begun producing its own original content including “House of Cards” and “Orange is the New Black”. The success of Netflix and online streaming has been met by competition. In 2008 Hulu emerged into the online distribution market. Similarly to Netflix, Hulu streams television and films through an online platform and offers a subscription for Hulu Plus at the same price of \$7.99 per month. Currently owned by major television conglomerates including Comcast, 21st Century Fox Corporation, and the Walt Disney Company, it is the principal digital distributor of network television (Johnson 2014).

Shortcomings in the Literature

Johnson examines the emergence of online-based distributors through their ability to act as direct competitors of traditional multichannel video programming distributors, or “MVPD”s. In this sense, she focuses on the idea of virtual cable companies who can provide the same channels and content as traditional cable companies. By doing so, she argues that MVPDs have made it impossible for these virtual cable companies to exist because of anticompetitive behavior such as illegal deals with content programmers that prevent others from accessing content or manipulation of prices to discourage MVPD subscribers from cancelling. While this is a valid point, this thesis emphasizes the influence that innovation has on changing the market as a whole and finds an emphasis on the idea of an online cable company to be somewhat limiting in researching and determining the effects that online distribution has on the existing market and cable companies. Johnson’s focus on the

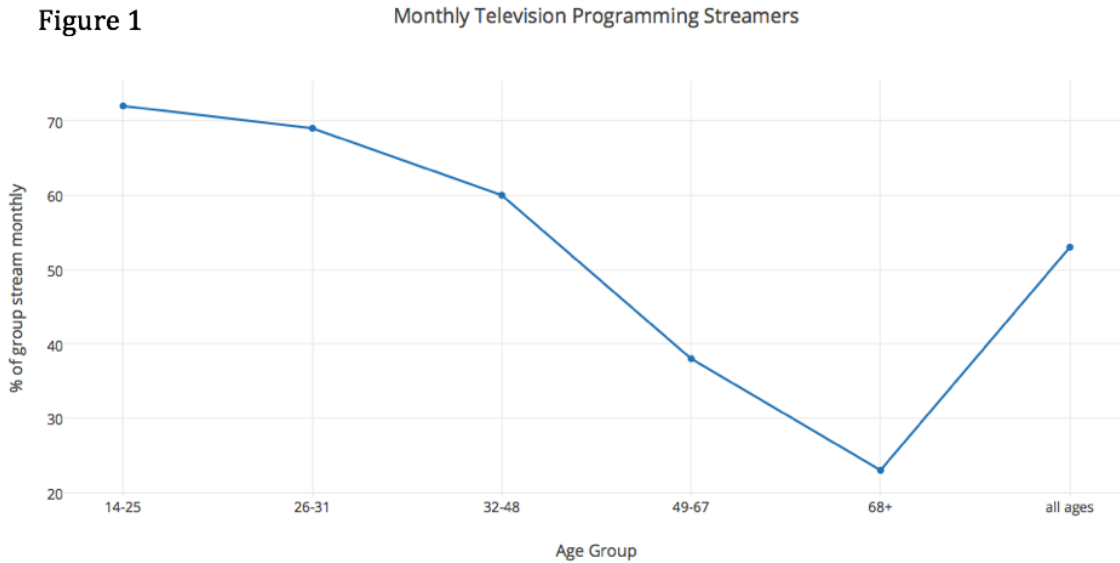
inability of virtual cable companies to emerge doesn't fully take the idea of shifting consumer patterns and preferences into account.

Online platforms don't necessarily need to provide identical services as cable and satellite companies in order to be successful, as Evens echoes. During times of digitization and technological advancement, there is great opportunity for innovation to be more fruitful than replication. An example supporting this point is the physical DVD rental business. In the following analogy, Blockbuster can be equated to cable and satellite television companies, and Netflix's original business model of online rental of physical DVDs can be equated to online cable companies that Johnson mentions. While Netflix put Blockbuster out of business because it offered the same service in a more convenient way, Netflix's old business of DVD rentals needed to go a step further into streaming to fully satisfy consumer trends. This instance of innovation shows that perfect substitutes, or replication, such as online physical rental services may not be as effective as an alternate form of competition that responds to consumer needs. Streaming is an alternative to renting films, which has become a more popular choice in the past few years; moreover, streaming and online distribution of content do not necessarily need to follow cable and satellite television models in order to do well in the market. One may argue that cable and satellite offer more channels and commercialized content that others may not have access to, but it is important to note that Netflix and Hulu offer a wide selection of popular programming from major media companies such as NBC Universal and ABC Television as well as indie films, niche content often overlooked by cable companies, and original content. At a significantly lower price point for

unlimited access to thousands of titles, these digital distributors have been major contributors to the cord never and cord cutter phenomenon.

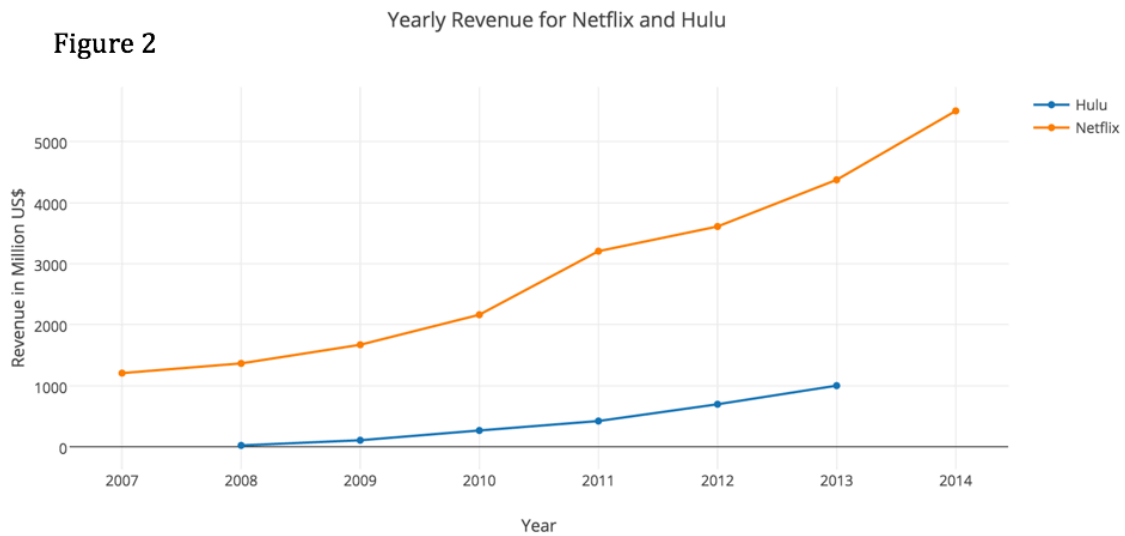
Additionally, literature on the influence of Netflix and Hulu on cable companies has yet to define or examine a clear relationship between the newer companies' growth and the effects that they are having on cable and satellite companies. While Netflix and Hulu were able to use technology to break into the distribution industry and compete with these MVPD, what exactly is the impact that they are having on the major cable and satellite conglomerates? To what extent have they disrupted the oligopoly and where do they stand in the market? As mentioned earlier, in an oligopolistic industry, conglomerates are forced to respond to price changes among rivals to remain competitive. Hulu's and Netflix's prices are \$7.99, so how is this impacting cable companies whose prices remain about eight times higher? What kind of variables and data are helpful in assessing the impact? The following data sections and data analysis will examine aspects of distribution including consumer habits and trends, prices, and revenue to observe a relationship that can address existing questions and holes in the study.

Data and variables



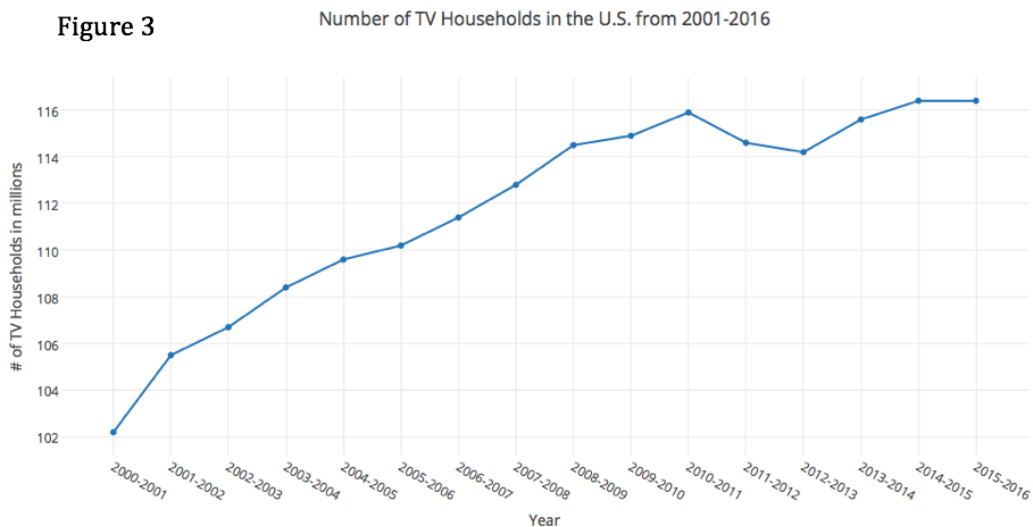
In the literature review, the authors characterized certain subsets of consumers as being cord cutters, cord nevers, and the Apple Generation. Figure 1 uses 2015 data from Deloitte to show the different age groups of television consumers, indicating the percentage of each age group that streams monthly. Data reveals that among younger television viewers, there is a higher percentage of individuals who stream monthly. The older the audience members are, the smaller the percentage of people in their age groups who stream television monthly. This makes sense intuitively because younger generations tend to adapt to newer technology at a faster rate and have an easier time changing their habits accordingly. A 14-year old cord never will have a smoother transition following distribution trends than a 40-year old consumer who has been watching cable

television for decades. While the trend in the data shows a pattern of decreasing percentages of streamers as consumers get older, there is a noticeably sharper decrease between those who are 32-48 years old and consumers who are 68 and older. However, there is only a 12% difference between the percentage of 14 to 48 year olds who stream monthly. According to the data 72% of 14-25 year-old television viewers utilize online streaming compared to the 23% of people 68 and older. Overall, 53% of consumers of all ages stream television programs monthly, indicating that streaming on average has been embraced by more than half of individuals in all age groups.



As mentioned earlier, Netflix's and Hulu's online distribution services emerged around 2007, rivaling more established distributors such as Comcast and Time Warner Cable. These companies are relatively new, which is why their yearly revenue is an important factor in understanding their expansion into this market.

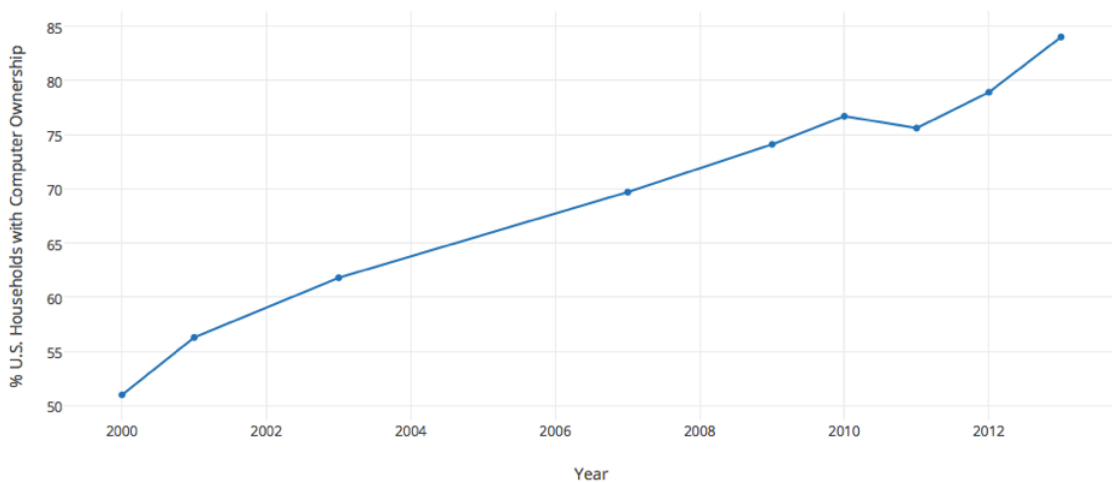
Rather than looking at their revenue in comparison to those of the major cable and satellite companies, it is better to analyze individual changes in revenue from year to year to determine how quickly the companies are growing. Hulu's financial information is not easily accessible, so the revenue I obtained comes from Statista. Statista's research analysts collect their data through resources within the industry. I also looked into Netflix's annual 10-K financial reports from 2007 to 2014 to collect its revenue. Overall, the revenue for both companies points to a significant yearly growth rate, which is depicted in Figure 2. Data suggests that Netflix's revenue has increased 4.57 times over the span of seven years from \$1,205,340,000 to \$5,504,656. Hulu's revenue in 2013 is 50 times higher than its revenue in 2007, increasing from \$20,000,000 to \$1,000,000,000. These growth rates indicate significant momentum in the current online distribution market.



In 2014, approximately 87% of U.S. households subscribed to either cable or satellite television (Experian 2014). Physical televisions are typically good indicators of satellite or cable use, so the number of television households in the U.S. can support this statistic and illustrate the prevalence of these forms of distribution over the past decade or so. Collected on Statista, Figure 3 shows this data from 2000 to 2016. The number of television households dramatically increased from the year 2000 to 2010; however, from 2010 to 2012-2013 there was a noticeable decline in the number of TV households. The data indicates that although the number reaches a low point by 2012-2013, the number of TV households picks back up, but at a slow rate that barely surpasses the 2010 mark. Online streaming became available around 2007, which could potentially explain the disruption in the graph and decrease in TV households from 2010 as streaming began picking up in popularity. Nevertheless, the increase in popularity and revenue of Netflix and Hulu throughout the following years are not quite consistent with the increase in television households following 2012. The ownership of televisions and the use of Netflix and Hulu, however, are not mutually exclusive. The number of television households does not have any causal relationship with satellite and cable usage, but can show a relationship of correlation. The inconsistency of Netflix and Hulu's growth in revenue and increase in household televisions can suggest that perhaps consumers have decided to use both modes of distribution to watch TV shows and films or that rather than solely using their laptops, computers, and smart devices to watch Netflix or Hulu, cord cutters and cord nevers prefer to use their television monitors to project content from Netflix or Hulu.

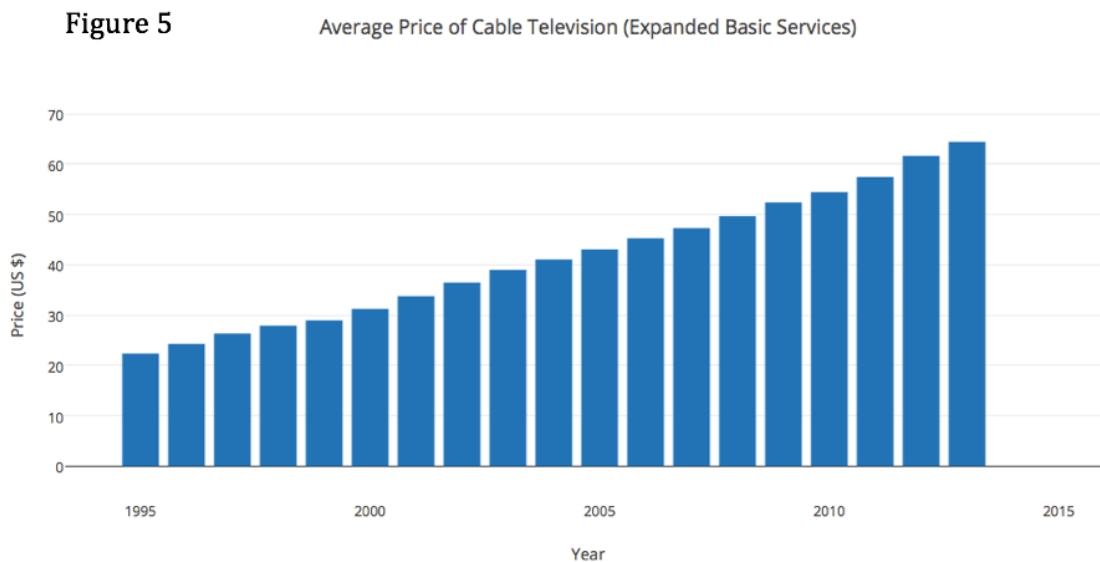
Figure 4

Percent of U.S. Households with Computer Ownership



The number of U.S. households with computers also is an important variable in understanding how digitized distribution has been able to enter the market and compete with cable and satellite. According to the U.S. Census Bureau, approximately 78% of U.S. households had high-speed Internet connection in 2013 (U.S. Census Bureau 2013). Consumers must have access to the Internet in order for online streaming to become a widespread trend, and the most common form of Internet usage is through computer ownership. In a span of twelve years, there has been a 30% increase in households who own computers, with 84% of households having at least one computer by the year 2013. In 2010 there is a noticeable decrease in the percentage of households with computers, which is a similar trend to the brief decline in the number of TV households mentioned in Figure 3. This is interesting to note because it indicates a dip in computer and television ownership during the same time period, which perhaps points to external factors that decreased the consumption of different electronic goods. Nevertheless, the data in

Figure 4 shows a clear overall increase in computer ownership in the U.S. This implicitly indicates that Internet usage has increased, providing a platform for Hulu and Netflix to continue growing.



Online distribution has been competitive within the market because of its relatively low prices. Consumers can have unlimited streaming options on Hulu or Netflix for a monthly price of \$7.99, which is an attractive deal considering cable and satellite television prices are significantly higher than both prices combined.

Average monthly cable television prices are important to note because they have grown exorbitantly over the years. Figure 5 shows data reported by the Federal Communications Commission in 2013, revealing average cable television monthly subscription prices from 1995 to 2013. The data associated with the figure shows that there has been a \$42 increase in monthly cable prices during this time period.

Cable and satellite television have been major sources of entertainment for decades as there have been few other distribution options within the market until recently. Figure 5 shows that average monthly prices of cable television were over three times more expensive in 2013 than in 1995. Like most oligopolies, cable distribution companies have relatively similar prices that are interdependent on one another. Increasing prices of cable will be important to keep in mind when looking at revenue. Is Time Warner Cable's revenue increasing at a similar rate as growing cable prices, or is its inability to lower prices to rival that of Netflix and Hulu influencing its revenue? As stated with the other variables, there are outside factors that contribute to the dramatic increase in price. For example, there might be more channels and bundles available that have increased the value of cable television over time. Another example may be that prices of raw materials have increased or the purchasing of new technology to manufacture cable boxes has elevated production costs for cable companies, pushing them to increase prices accordingly. There are myriads of explanations that can contribute to the rising prices; nevertheless, it most likely still affects consumers' decisions to pay when they have the option of lower and consistent prices through Netflix and Hulu subscriptions.

Comcast and Time Warner Cable are the two dominating cable conglomerates in the distribution realm, which is why trends in their yearly revenue are representative of how the cable industry as a whole is doing. These distributors have functions that go beyond video cable services and extend to Internet, telephone, and other services; furthermore, it is a mistake to merely look at their overall revenue because it doesn't accurately depict how their cable television

business is doing. I chose not to analyze Comcast because data on its business is too intertwined to that of NBC Universal. The revenue reported in its annual financial reports combine services of their core business as well as revenue from its theme parks, studios, and cable channels. This makes it very difficult to distinguish how much of the revenue is coming from cable, Internet and phone services, or from NBC Universal. Instead, I examined Time Warner Cable's annual 10-K financial reports from 2006-2014 and found data that is broken down to provide specific revenue for their video cable services.

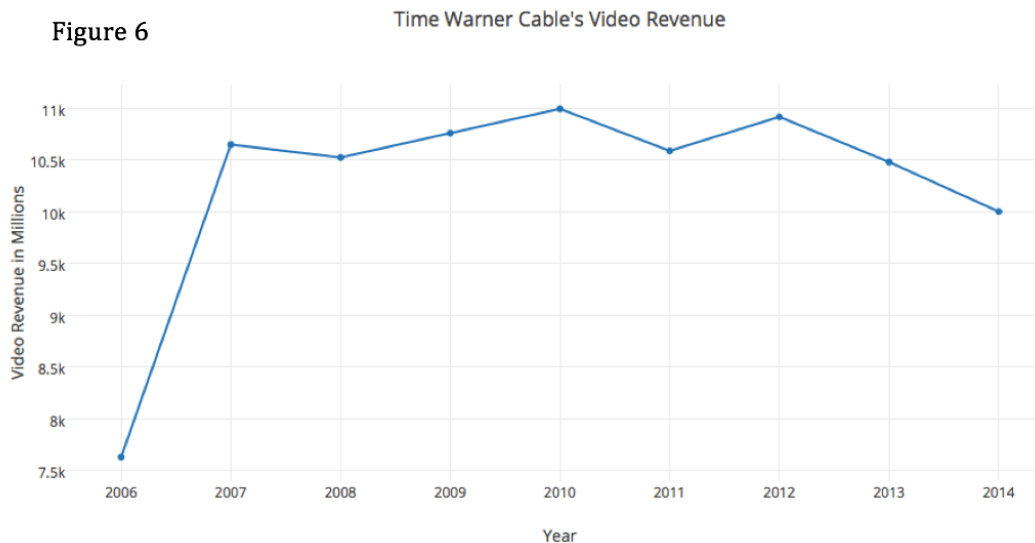


Figure 6 shows Time Warner Cable's revenue during this time period. In 2006, its revenue spiked by approximately \$3 billion and peaked in 2010. From 2007 to 2008 there was a brief dip in revenue. While there are several factors that may have influenced this decrease such as the financial crisis, it is worth considering

that Netflix launched its streaming services that year. Following 2007, Time Warner Cable's video revenue stays consistent and lacks significant growth. In fact, from 2012 to 2014 there is an overall plunge in revenue. Given that cable prices have risen noticeably, it is interesting that Time Warner Cable's revenue doesn't increase at a similar rate. Perhaps this points to a loss of consumers who are willing to pay higher prices. The trends in revenue from 2007 to 2014 provide a noteworthy contrast to its revenue growth from 2006-2007. If there have been significant external economic factors influencing the loss of revenue, they would have most likely also affected Netflix and Hulu's revenue and growth rates as well. Figure 2's data showing substantial growth in Netflix's and Hulu's yearly revenue over this same time period indicates a correlation between online streaming and an overall decrease in revenue growth in television cable services.

Conclusion

The television distribution market has been affected greatly by Netflix and Hulu. There are various viewpoints expressing how the oligopolistic nature of the industry is shifting as a result of newer technology, but the majority of the literature on this topic concludes that online platforms are necessary to satisfy consumer needs and have allowed smaller, newer companies to compete with larger cable and satellite conglomerates. My analysis illustrates that current consumer trends and changes in companies' revenues point at a relationship where online distribution and lower subscription prices shift revenue away from older conglomerates such as

Time Warner Cable to newer ones including Netflix and Hulu. Furthermore, the oligopolistic structure of the market has been disrupted as a result of technology, which has removed major barriers that once prevented smaller companies from succeeding and surviving in this industry.

This thesis took a particularly close look at the economic theory of oligopoly. To find a relationship between the distribution realm and the major firms that dominate the market, I researched the entrance barriers that have been prevalent in the industry as well as costs and other limitations that have shaped the oligopolistic structure. Consolidation among content creators and distributors have enforced an unequal power dynamic among larger and smaller firms for decades; moreover, content creators and providers have engaged in anticompetitive behavior that has made it nearly impossible for a newer or smaller company to participate in distribution. Technology, however, has been able to alleviate some of these obstacles.

Additionally, my thesis looks at a breakdown of television consumption habits that have changed as a result of technology. Consumer behavior and trends are integral in understanding why Hulu and Netflix have been able to compete against dominant cable and satellite television companies. In my data I found that the number of televisions per household has steadily been increasing over the past decade, but the increase has been at a lower rate over the past few years. American households have also been increasing their consumption of computers, with approximately 84% of households owning computers in 2013. As prices of monthly cable subscription escalated by about \$20 from 2007 to 2013 and continue rising, it

is not surprising that Time Warner Cable's revenue has decreased over this time period as Netflix and Hulu provide compelling alternatives.

The data points to relationships among the variables that support the central argument of this thesis, but there were some limitations present. Unfortunately, industry data is hard to collect because much of it is private. Similarly, it is difficult to collect information specific to television and video services because major conglomerates such as Comcast report their data all together or lump them into categories that make it hard to find specific cable television statistics or revenue. My analysis of the industry could have been deeper if these numbers were more accessible. Additionally, the changes in online distribution have occurred primarily since 2007. This relatively short time frame gives my study a limited number of observations and data points to look at, which is why running a regression and creating a model is a particularly challenging task for this topic. Each year over this time period, there have been changes in technology and developments in online distribution that are hard to account for in the data. Nevertheless, this restraint concerning timeframe is what makes this topic worth studying because changes in the industry are occurring so rapidly. In every industry, the vast modifications and advances in technology are inevitably going to impose this sort of data limitation, but at the same time mark progress and growth. In the entertainment world, there has been tremendous year-to-year innovation that continues improving the way films and television can be consumed. While it is something that has been shifting the structure of the market, it is benefitting consumers by making it easier and cheaper for them to access and watch television. My exploration of digitalization of

distribution provides valuable analysis that contributes to a discussion of the changes in the entertainment industry, but also speaks to a bigger issue: As technology continues to advance in every industry, it is uncertain how it may interact with and potentially disrupt many oligopoly-dominated sectors of our economy.

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