The Economics of Online Television: Revenue models, Aggregation, and “"TV Everywhere"

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Abstract

Unlike most media, the U.S. television industry has continued to prosper as broadband diffusion has grown to reach over 2/3 of households. We first identify the source of standard TV’s long term prosperity: technology, especially digital conversion. The result has been a massive shift since the 1970s from advertising to direct pay support, and greatly increased quality and variety of television programs— in turn leading to ever-higher TV usage. Since about 2000, online video streaming has become widespread, but its overall proportion of all TV viewing remains under 2%. Focusing on professionally produced commercial TV products, we find that online TV has also shifted toward a direct pay revenue model, and we offer suggestive evidence that online distribution is cheaper and more efficient than MVPD distribution. We attribute the apparent dominance of aggregators in online TV distribution to economic efficiencies. Drawing on a taxonomy of “Everywhere TV” systems marketed by the top 25 MVPDs, we model these “authentication” tie-ins as price discrimination devices intended to slow MVPD disconnections; although in plausible circumstances, the price discrimination incentive can slow development of online TV. Anti-competitively motivated behavior by established MVPDs or ISPs is also plausible, but while facilitated by vertical integration into program supply, the viability of anti-competitive strategies ultimately depends on large national market shares of the MVPD and ISP markets to be effective.

I. Introduction

The U.S. television industry has been remarkably fast growing and successful since its beginnings in the 1950s. And unlike most other U.S. media, television’s prosperity has persisted over the past decade as Internet broadband adoption has grown to two thirds of US households, and online streaming of TV shows and other video content has become widespread. Many questions have been raised about television’s economic future, both from business and policy perspectives. In this paper, we endeavor no predictions, but offer an economic framework for thinking about this industry’s intriguing future.

Our focus is on professionally produced commercial television programming, and primarily on three economic aspects of the developing online television industry: business model development and sources of support, the phenomenon of content aggregation, and the offline/online bundling strategies of multichannel video program distributors (MVPDs), widely labeled as “TV Everywhere.”
On the premise that historical context is valuable, we begin with the “standard” TV industry’s economic success since about 1970. That story segues naturally into development of the online television/video industries. Following a brief introduction to online TV, we turn in sequence to the three main aspects of online television: revenue model development, aggregation, and offline/online bundling. In conclusion, we briefly discuss market structure issues related to bundling and other aspects of MVPD and ISP competitive strategy involving the online TV market.

II. Economic development of television in the U.S.

A. “Standard” TV

The broad historical picture since 1950 is set out in Figure 1. The primary economic measure is total revenue as a percent of GDP; that metric is used to give comparative meaning to size of the media industries over time. The various media industries are generally ordered from bottom to top in terms of the dates of their commercial development: “old” media forms on the bottom, and “new” on top. The topmost category, “Internet,” is a combined sum of revenues for all Internet-distributed media in the categories for which we could obtain data, including online television.

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1 The Figure 1 graphic is updated from a broader study of the economic history of 10 major U.S. media (Waterman and Ji, 2012).

2 This “lower-bound” definition of Internet media includes newspaper websites, digital music, digital movies, television station/network websites, Internet radio; e-books. An “upper bound” definition including all Internet advertising and other direct payment media shows similar time trends (Waterman and Ji, 2012, pp. 5-8).
The standard television industries (broadcast and multi-channel) have performed robustly throughout this time—including the period after about 1999, when revenue of the media industries as a whole began declining as a percentage of GDP. In fact, the only other media industry (apart from “Internet” media as a group) to have grown as fast as GDP since 1999 was the relatively small video games industry.³

Economic performance of the television industries is separately illustrated in Figure 2 for the 1970-2010 period. The “Internet” category here includes national TV distribution, such as via hulu.com and CBS Interactive, and local TV station websites.

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³ Video game software accounted for .06% GDP in 1999 and 2010 (Waterman and Ji, 2012).
Television grew steadily as a proportion of GDP over this period, including a relative increase of about 20% from 1999-2000 (.93% of GDP to 1.12%), a time interval when media as a whole declined by about 20% as a fraction of GDP.

How can we explain television’s exceptional growth? The basic answer is extraordinary technological change (and a cooperative FCC), combined with an enormous, expanding appetite for TV by American viewers.

One aspect of TV’s economic growth has been a massive conversion from “free” (ad supported) to “pay” TV (i.e., multi-channel subscriptions). As Figure 3 shows, less than 7% of TV households subscribed in 1970 to multi-channel services, virtually all of these cable systems. By 2010, nearly 87% subscribed to a variety of MVPD services. The underlying technology link is that when television began in the 1940s, direct payment was awkward and inefficient; but beginning in the 1970s, direct pay systems--first cable, then DBS and most recently telcos--have excavated a consumer willingness to pay for TV that in the aggregate has now exceeded advertiser demand for the viewers (Figure 4). The FCC’s role in this ad-to-pay conversion was its

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Sources: U.S. Census; trade associations; industry analysts; 10-K reports; author estimations Preliminary data (Waterman/Ji, March, 2021)
shift from an agency protecting broadcast television to one that, on the whole, encouraged new technology and promoted television competition.

Meanwhile, however, although Figure 2 shows a decline of broadcast TV revenues relative to GDP over the 1970-2010 period, there has to a large extent been a “stacking” phenomenon, in which cable, DBS, and telco TV revenues have just been added on top of broadcasting. While broadcast network audiences have notoriously declined, their cost-per-thousand viewer (CPM) advertising rates have steadily risen, nearly cancelling out the audience defections. Similarly, cable television advertising has prospered, beginning in the mid-1970s.

**Figure 3: U.S. MVPD Subscribers as a percent of all U.S. TV households, 1970-2010**


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4 Between 1955 and 2011, the CPM primetime average across ABC, CBS, and NBC has grown by more than 1,700% from $1.57 to $26.93, and when adjusted for inflation, the CPM rate has almost exactly doubled. From 2000 to 2010, the CPM rate across the same three networks has more than doubled (not adjusting for inflation), from $13.30 to $26.93, which is a 52% increase when adjusted for inflation (TV Dimensions, 2012, p. 52; Bureau of Labor Statistics).
Another aspect to television’s long term growth is its increasing value to consumers due to massive expansions in channel capacity, accompanied by much higher financial investments in television production, and since the mid-1990s, increases in picture quality in the form of high definition. This rise in value of television products has again been driven by technology. Partly responsible were the launch of geostationary satellites beginning in the mid-1970s, and steady increases in cable system transmission capacity via fiber optics. The dominating cause, however, was conversion from analog to digital production and distribution technologies. In the early years, analog technology was cheaper and more efficient than digital. Over time, though, the balance shifted dramatically in favor of digital, which allows for higher quality and quantities of TV at lower cost. While public policy has focused on the FCC-led digital conversion of the U.S. broadcast system beginning in 1996, more significant has been digital conversion of multi-channel systems (Figure 5). Modern DBS, launched in 1994, was all digital from the beginning, and at about the same time, cable systems began converting to digital tiers, which dramatically expanded their channel capacity, in turn stimulating entry by hundreds of new
television networks. Entwined with these changes has been widespread adoption of digital, mostly HDTV sets by consumers.

Figure 5: The Digital TV Transition, 1995-2010

Sources: SBCA, GMID-Global Market Information Database, MPAA, NCTA, SNL Kagan, TVB, Nielsen, Leichtman research.

A less noticed digital driving force has been more efficient computer-based systems for controlling program flow to consumers, which have contributed to a massive growth in cable TVs revenue per subscriber since the mid-1990s. The higher value of television to Americans since the 1970s is further suggested by a one-third increase in TV usage from about 43 hours per week per household in the “early 1970s,” to nearly 58 hours in the “early 2010s” (TV Dimensions, 2012, p. 76). Remarkably in fact, U.S. TV use has continued to rise, albeit more slowly, through at least 2011. A.C. Nielsen reported that total weekly hours of television use per person rose from 33:48 hours in the 2008-09 television season, to 34:01 hours in 2009-10, and 34:12 in 2010-11 (Nielsen, 2011, p. 16).

We now turn to the development of online television and its effects.

B. Online commercial television

Some watershed events in the now familiar history of online commercial TV program distribution are shown in Figure 6. With little fanfare, iTunes began offering some recent TV series episodes for direct payment in 2005. Phenomenal consumer response, however,

\[5 \] From 1998 to 2006, average cable TV system revenue per subscriber for TV services grew, in constant dollar terms, from $33.9 billion to $47.5 billion (Waterman & Han, 2010).
followed YouTube’s launch in that year, and full episodes of major network series programs were soon being illegally posted by users. After an initial period of tolerance, the networks and program suppliers issued “takedown” orders under the Digital Millennium Copyright Act (DMCA), and lawsuits against YouTube followed. It was not until 2008 and 2009 that NBC and Fox (later joined by ABC) launched hulu.com and CBS started tv.com (later CBS Interactive), primarily as online outlets for some of their regular series programs, usually after a short time delay following their standard broadcast. Then since 2010, a number of others have entered the online television market, notably the launch of “TV Everywhere” services by major cable operators and her MVPDs.

Figure 6: Online television timeline highlights

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>YouTube launched; broadcast TV programs were posted for free by users</td>
</tr>
<tr>
<td></td>
<td>iTunes offers TV programs for sale as downloads ($1.99)</td>
</tr>
<tr>
<td>2006</td>
<td>Amazon debuts “Unbox” (digital rental/purchase of TV shows/movies)</td>
</tr>
<tr>
<td>2007</td>
<td>Networks issue “takedown” notices to YouTube; Viacom law suit against YouTube for copyright infringement. Networks win. Netflix launches online streaming of TV shows/movies</td>
</tr>
<tr>
<td>2010</td>
<td>Comcast and a few other MVPDs launch TV Everywhere services.</td>
</tr>
<tr>
<td>2011</td>
<td>Amazon Prime program includes online streaming of TV shows and movies in addition to free Amazon product shipping as bundle.</td>
</tr>
</tbody>
</table>

Figure 7 summarizes characteristics of several significant providers of online commercial television programming, as of Summer, 2012. As shown, a wide variety of revenue models and levels of program aggregation have emerged, topics that we return to below. Note also, however, that there is a broader market of commercial online video suppliers that has existed since the mid-1990s, mostly offering movies, and more recently other types of online video programming, including news programs.6

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6 A new FCC report (released July, 2012), on the status of competition in the video industries provides detailed and useful description of the recent events in the online video industries and discusses the wide variety of revenue models, content, and levels of aggregation in this emerging industry.
The persistence of standard television

How has the established living-room set oriented television industry fared so well over the past decade?

One reason is that the quality and variety of standard television service offered by MVPDs has continued to increase over this period. From 2000 to 2011, the number of channels available to the average US TV household reportedly rose by over 60%, from 72 to 137. (*TV Dimensions, 2012*, p. 26), while the number of networks transmitting in HD increased from a handful to hundreds by the end of the 2000s. Enabled by the Telecommunications Act of 1996, telco entry into MVPD service in the mid-2000s may also have increased perceived variety.

A second reason is that television has benefitted from good IP protection. While music and probably movies have suffered from rampant illegal file sharing, and liberal fair use interpretations of news copyrights have probably damaged news publishing, copyright has been effective in TV. In particular, enforcement has worked, notably the reasonably prompt...
responses to “takedown” orders issued to YouTube and other sites under the DMCA. Also, at least broadcast and basic cable TV programs are already available for free or for cheap, so incentives to steal them are low anyway.

Third and most intriguing is the persistence of TV set watching as Internet video options, including YouTube and other user-generated fare, have proliferated. At least according to Nielsen Co., however, not much time is really being devoted on online viewing of videos. For the entire US population in the 4th quarter of 2011, Nielsen reports the average individual 2 years and older watched 33:43 hours of television per week, compared on 30 minutes “watching video on the Internet,” and 8 minutes “watching video on a mobile phone,” a ratio of about 53 to 1 (totaling Internet and mobile phone video). (A.C. Nielsen Co., 2011, p. 5). These comparisons are less extreme for some age groups; 18 to 24 year olds, the most intensive Internet/phone user group, watched 25:34 minutes of television, 51 minutes of Internet video and 14 minutes of phone video (a ratio of about 25 to 1).

It is interesting, however, that the majority of Internet video use is highly concentrated among a fairly small group. Nielsen reported that 12.4% of all individuals (the highest quintile among the 61.9% of individuals who have streamed at least some video) watched an average of 20.7 minutes of video per day, which accounted for 84.1% of all video streaming minutes. Even these relatively extreme video streamers, however, watched nearly as much standard TV per day (241.2 minutes) as the average U.S. individual (264.7 minutes) (Nielsen, 2012, Table 8a). Our particular interest here is commercial network program viewing, and among these programs, major network broadcast TV. As Figure 8 illustrates, these programs still earn the largest audiences and are in highest demand, although some individual cable TV network programs attract audiences in the same range. To be expected, these broadcast network programs are the most popular content for streaming. While exact figures are not available, one source reported that about 5% of all prime time TV program viewing was online in 2010 (Convergence Consulting Group, 2010), and this fraction is presumably growing.
### Figure 8: Top 10 Broadcast and Cable TV Networks

#### Average Ratings by Network, Week of February 27 to March 4, 2012

<table>
<thead>
<tr>
<th>Network</th>
<th>Primetime Rating*</th>
<th>Type</th>
<th>Most Popular Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBS</td>
<td>4.2</td>
<td>Broadcast</td>
<td>CSI, NCIS, Survivor, Two and a Half Men</td>
</tr>
<tr>
<td>FOX</td>
<td>3.2</td>
<td>Broadcast</td>
<td>American Idol, Glee, Simpsons</td>
</tr>
<tr>
<td>ABC</td>
<td>2.9</td>
<td>Broadcast</td>
<td>Modern Family, 20/20, The View</td>
</tr>
<tr>
<td>NBC</td>
<td>2.7</td>
<td>Broadcast</td>
<td>The Office, 30 Rock, The Tonight Show</td>
</tr>
<tr>
<td>Univision</td>
<td>1.2</td>
<td>Broadcast</td>
<td>Eva Luna, Spanish News, Mira Quien Baila</td>
</tr>
<tr>
<td>USA</td>
<td>1.0</td>
<td>Cable</td>
<td>Psych, WWE Monday Night Raw</td>
</tr>
<tr>
<td>Discovery</td>
<td>.8</td>
<td>Cable</td>
<td>Mythbusters, Dirty Jobs, Planet Earth</td>
</tr>
<tr>
<td>TBS</td>
<td>.7</td>
<td>Cable</td>
<td>Conan O'Brien, syndicated situational comedies</td>
</tr>
<tr>
<td>History</td>
<td>.7</td>
<td>Cable</td>
<td>Pawn Stars, Swamp People, Top Gear</td>
</tr>
<tr>
<td>Fox News</td>
<td>.6</td>
<td>Cable</td>
<td>The O'Reilly Factor, Hannity, Greta Van Sustern</td>
</tr>
</tbody>
</table>

*Source: Authors’ compilation from Nielsen TV Ratings Data via tvbythenumbers.com*

Time use studies also suggest that displacement of standard television viewing by Internet use has been relatively minor. In a recent econometric study based on the American Time Use Survey (ATUS), Wallsten (2011) found that online computer use for leisure (which was about 3% of a 5 hour total of all leisure activities for a U.S. adult per day in 2010), only partly displaced TV watching. On average, an additional hour of online leisure led to only .27 minutes less of all other leisure, including TV watching. Although the ATUS data suffer from definitional problems, Wallsten stated that “results suggest that online video is ‘at least a partial substitute’ for watching television and videos.” (p. 26). He suggested that one reason why Internet leisure use only partially displaces TV use is that more multitasking, with the TV on, appears to be occurring. Descriptive data reported by Vogel (2011) suggest a similar conclusion.
Of course, time is likely to shift the balance in favor of online commercial TV viewing, especially as program availability improves. To date, however, the viewer displacement numbers are not as frightening as some impressions have conveyed.

We turn now to the economics of online television.

III. **Online TV revenue models**

The economic future of television depends critically on the development of successful online revenue models. Greater program quality and variety, including Internet-original content, cannot otherwise be supported.

Among its many marvels, the Internet offers theoretical improvements over offline television in both advertising and direct payment as means of revenue generation (Harvard Business School, 2000; Shapiro and Varian, 1999; Bakos and Brynjolfsson (1999, 2000); Owen, 1999; Waterman, 2001; Evans, 2009). Advertisements can be more efficiently targeted. Direct payment systems can be more efficient, such as by use of micropayments and mobile phone applications, and by facilitating price discrimination with dynamic pricing and instantaneous price changes. It is simply an empirical question how effective these alternative means of support will turn out to be for online television.

Figure 9 compares domestic revenue by source for the offline and online components of the US television industry in 2010.  First, total online revenues are obviously tiny, but this should not be surprising given the relatively tiny proportion of TV viewing that is online. Online revenues are reportedly increasing relatively quickly.

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7 Online subscription revenues in Figure 9 is apparently dominated by Netflix, which offers both television programming and movies. It was reported that in Fall, 2011 TV programming accounted for 50 to 60% of Netflix viewing, rising to 80% by early 2012 (Stelter, 2012).

8 *Hulu* revenues were reported to nearly double in 2011 (from $240 to $420 billion), with $7 million accounted for by Hulu Plus in 2010 and $93 million in 2011 (Cohen, 2012). A November, 2011 report by Kagan Research on which Figure 9 is based projected nearly a doubling of sale and subscription consumer spending for TV shows (Kagan Research, 2011, p. 4).
A second observation from Figure 9 is that on a national level, direct online sales of TV programs compare favorably to online TV ad revenues.\textsuperscript{9} If revenues from online video subscriptions, viewing of which were said to be disproportionately accounted for by TV programs, are included, the balance is much more lopsided in favor of direct payment. While data for 2011 are incomplete, these proportions are apparently of the same order (see note 9 above).

The apparent trend toward direct payment online TV revenue models parallels both the same trend for the standard TV industry shown in Figure 6, and the finding of Waterman and Ji (2012) that since the mid-2000s, online media as a whole have shifted away from advertising toward direct payment models.

\textsuperscript{9} Screen Digest estimated that a la carte sales of TV shows through Apple, Amazon, and other OVD competitors amounted to $407 million in 2010 (FCC, 2012), higher than the Kagan Research estimates for 2010. See also note 9 above.
In the specific case of television, the offline industry’s within-program ad model transfers directly to online programming. However, although CPM rates for Hulu are reportedly comparable or above those of prime-time broadcast TV, the number of commercials sold is much lower, reportedly resulting in relatively low advertising income per program online. At least the major broadcast networks, however, have been relatively more successful in generating online direct payment revenues than they have offline, where direct payment revenues have mainly been confined to meager (though growing) retransmission payments made by MVPDs for the rights to carry their programming. 10 Cable television networks, of course, have long been successful in obtaining both advertising and per-subscriber fee income offline. (The average balance for basic cable networks is about two-thirds advertising and one third transmission fees). Therefore, the shifting balance in favor of direct payment for online TV would seem to advantage broadcast relatively more than it does cable networks.

Further calculations using 2010 online and standard TV revenue data in conjunction with Nielsen and Comscore viewing data indicates that total revenue per viewer per program from all sources for online TV distribution are below those of the standard TV industry. These comparisons are indicated in Figure 10. Consistent with these data, one consulting firm estimated in 2011 that the broadcast and networks earned 2.7% of their advertising revenues from online distribution in 2010, compared to online viewing of about 5% (The Convergence Consulting Group, Ltd., 2011).

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10 SNL Kagan calculated 2010 retransmission consent revenues to the four major broadcast networks to be at $1.14 billion and predicted the income form to grow to $3.61 billion by 2017 (O’Shea, 2011). Broadcaster networks in sufficiently large markets obtain between $0.25 and $0.75 per subscriber from MVSPs (Atkinson, 2011). Fox has been the most successful network in terms of collecting retransmission consent revenues, with SNL Kagan putting the 2011 figure at $257 million from distributors and $39 million from affiliates (Flint, 2011). NBC trails the other broadcast networks nationally, but after its acquisition by Comcast, a Comcast executive has stated it intends to fight for more retransmission revenues on the NBC side while working to keep other broadcast networks’ retransmission fees as low as possible on the cable side (Atkinson, 2011).
Figure 10: Comparative total revenue per hour/per viewer: standard TV vs. hulu.com, 2010

<table>
<thead>
<tr>
<th></th>
<th>Standard TV</th>
<th>hulu.com</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total revenue ($ mil.)</td>
<td>$163,004</td>
<td>$240</td>
</tr>
<tr>
<td>Hours per viewer/visitor per month</td>
<td>148.20</td>
<td>3.46</td>
</tr>
<tr>
<td>Total TV viewers/ unique visitors/per month (mil.)</td>
<td>287.50</td>
<td>26.86</td>
</tr>
<tr>
<td>Revenue per viewer/user per hour ($)</td>
<td>$.38</td>
<td>$.28</td>
</tr>
</tbody>
</table>


While the online television industry remains in its infancy, and we do not have profit or loss information for online TV distributors, one suggestion of these revenue data is that online distribution of television programming is simply cheaper. To that extent, consumers will be the ultimate beneficiaries. So far, at least, online TV appears to be relatively vibrant, with small but increasing quantities of Internet-original programming offered by Hulu, Netflix, YouTube and some other suppliers. In this respect, the online television industry parallels the early development of cable television in the late 1970s and early 1980s. In the following sections, we consider more fully how the online TV market is developing and whether established offline players are a threat to it.

IV. The economics of online TV aggregation

Aggregation means the supply of large amounts of content via one website, typically from multiple creators or copyright owners. As suggested by Comscore rankings and Figure 7 above, aggregation of commercial TV programming, or more generally online video, so far appears to be a dominant model. The service iTunes, for example, aggregates TV programs and movies from numerous owners, primarily for a la carte sale. Hulu aggregates mainly programs from the 3 of the 4 major broadcast networks which co-own the site, but also content from hundreds of other “content partners.” Netflix offers a large menu of movies and TV programs from different owners for a monthly subscription fee. At the other end of the spectrum, a number of other current online video businesses are essentially standalone networks, such as HBO-GO, ESPN360, and several individual cable TV networks. Viacom, Disney, and CBS
Interactive are intermediate cases, in that they offer numerous broadcast and/or cable programs, but primarily only those produced or distributed by the website’s corporate owner.

Aggregation in online video is important because of its implications for competitive structure. If the efficiencies of aggregation are high and program exclusivity is practiced, for example, a winner-take-all market in which one aggregator dominates, could result. Offline cable television systems, for example, evidently realize high economies of scale with respect to the amount of programming they deliver and with respect to the number of subscribers they serve. The apparent result of these efficiencies is local market dominance by a single cable operator in nearly all of the U.S. Aggregation efficiencies, however, do not necessarily imply that competition among multiple online aggregators--some of whom may offer similar or the same programming--cannot persist. In such case, entry of nascent independent online program suppliers could actually be easier than in the MVPD market because multiple aggregators are available to carry them as part of a larger package.

The efficiencies of online content or product aggregation have been studied by several authors, notably Bakos and Brynjolfsson (1999, 2000). They showed that Internet aggregation, or bundling, has the efficiency characteristic of averaging consumers’ demands for many different products at once, enabling more accurate pricing. Their model, however, appears to presume a collection of products sold at one price, such as AOL and other ISPs offered in early days of the Internet. While that model potentially applies to modern subscription services such Netflix, a more apparent source of economic efficiencies of online aggregation is analogous to well-known reasons that brick and mortar department stores exist. Consumers have a one stop shop and a way to directly compare a variety of different brands.

As recognized by Bakos and Brynjolfsson, Shapiro and Varian (1999), Harvard Business School (2000), and others, however, Internet architecture offers unusual efficiencies of aggregation because marginal costs of carriage are very low compared to other media. Hot links to a virtually unlimited amount of programming content can be offered by one seller (although costs of transactions with content suppliers, and website development will be increasing in capacity). Online news sites, for example, thus offer vastly larger amounts of news compared to print newspapers. On the other hand, the Internet also makes disaggregation of content more
efficient because the marginal cost of content distribution is very low. A print newspaper largely exists as a bundle, for example, because the whole package can be physically delivered to a subscriber more cheaply. Potentially, however, multiple websites can be created to offer specialized content that is comparable to different sections of a newspaper. Remarkably, then, the Internet greatly improves the efficiencies of both aggregation and disaggregation models relative to other media forms.

An evident advantage of online video aggregators is a strong identity in an ocean of websites, and this is clearly one objective of aggregators such as iTunes and Hulu (Yao, Queiro, & Rozovsky, 2008). A look at online video suppliers at the other end of the spectrum, such as HBO-Go and ESPN, suggests that suppliers that already have a well-established name are prominent among successful disaggregators. Certainly, then, there are business disadvantages of aggregation as well. For example, a program supplier’s identity can be lost in an aggregator’s ocean of content. In some notorious cases, such as Movielink, a now faded consortium of five movie studios that offered recent Hollywood films a la carte, joint ventures fall victim to contractual squabbling.\(^\text{11}\) Hulu has reportedly had similar problems (Morgan, 2012).

On balance, however, online content aggregation appears to be a compelling model. Other Internet developments also seem to display its economic advantages. Google TV and Apple TV, for example, although not very successful to date, partially serve as aggregators of program suppliers who are willing to be sold as part of an online package that can be watched on a TV set. The Microsoft Xbox 360, Sony PlayStation 3, a variety of set-top boxes, tablets, and similar hardware devices essentially function as content aggregators as well. With content provider-negotiated business models ranging from subscription access, content access rentals, and pay-per-downloads to free, advertising-based content distribution, these devices in some instances enable other aggregators like Comcast and Verizon to distribute their licensed content through other devices or open up consumers’ living rooms to new content otherwise unavailable through MVPD systems without the use of a broadband connection and a

\(^{11}\) According to Forbes.com, these 5 studios allegedly spent between $100 million and $150 million to develop the online video on demand (“VOD”) service that a launched in November of 2002. By Q3 of 2007, the service was sold to Blockbuster for $6.6 million in order to allow the bricks-and-mortar movie rental chain to enter the online video marketplace. (Ali, 2007).
computer. We continue with the important subject of aggregation in the following discussion of *Everywhere TV*.

V. **Offline-online bundling; the economics of TV Everywhere**

The *TV Everywhere* concept was jointly announced on by the 2 largest cable MSOs in the U.S., Comcast and Time Warner in 2009. *TV Everywhere* is an umbrella model in which a cable system or other MVPD offers some aggregation of online television programming for free with “authentication” that the online user is a paid monthly subscriber of the MVPD. The primary online programming available is generally a subset of the programming which the subscriber already receives with their MVPD subscription. For example, *Xfinity*, the online aggregation service owned by Comcast, offers TNT and other Turner Broadcasting System channels to all Comcast subscribers whose subscription includes those channels. Users can either access this programming through the *Xfinity* portal upon verification of subscription or through the web pages of the specific channels, requiring verification of subscription with one of the currently 14 participating MVPDs who have entered into online video access licensing agreements with the networks. Or, [www.HBO-Go.com](http://www.HBO-Go.com), a website that offers mostly the same movies and TV programming that the familiar HBO monthly subscription channel offers, is free, but only to users who also subscribe to HBO via one of 23 participating offline cable, DBS, or teleco MVPD services.

*TV Everywhere* attracted immediate attention from some who alleged that it was an anticompetitive device intended to preserve market power of existing MVPDs by preventing the online video market from developing, and/or was intended to leverage that existing market power to the online market—thus giving an anticompetitive advantage to MVPDs in their attempt to monopolize the online video market (see Scott, 2010; Gardner, 2010). These claims were elaborated in the FCC and DOJ deliberations leading up to approval of the Comcast-NBCU merger. Some commenters in the FCC proceeding argued that *TV Everywhere* was anticompetitive in intent, and that the increase in vertical integration between Comcast, a relatively large MVPD and ISP, and NBC-Universal, a major program supplier, would facilitate this and other anticompetitive objectives of Comcast (see, *e.g.*, Cooper, 2010; Singer, 2010).
More recently there have been press reports of a Department of Justice investigation into potentially anticompetitive practices by MVPDs to preserve their offline market power, or to gain anticompetitive advantage in the online video market (Catan & Schatz, 2012).

Figure 11 provides a brief taxonomy on the current status of the TV Everywhere-type (or “authentication”) services offered by the largest 25 MVPDs in the U.S. Most large MVPDs, including Comcast, DirecTV, Dish, Cox Communications, AT&T and Verizon, offer such services. The availability of *Everywhere TV* becomes less likely among relatively small MVPDs. New intermediaries like Snyacor have appeared to provide business-to-business services assisting some of the smaller MVPDs to establish and manage *TV Everywhere* portals.\(^{12}\)

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\(^{12}\) At this time, most Snyacor-served MVPDs have not publicized their *TV Everywhere* portal pages on their main websites, suggesting beta stage testing, and only provide content that is already available for free online through other sites like Hulu. This free content is often available through other, more established MVPD *TV Everywhere* portals, like Comcast’s Xfinity, without requiring subscription authentication, which raises interesting questions as to how advertising revenue is shared between the ad-based, free content’s owners and the MVPDs and what exactly is specified within the licensing contracts between these connected organizations. Finally, it is worth noting that two MVPDs without *TV Everywhere* programs, Insight Communications and Knology Holdings, were recently acquired by larger MVPDs, with the latter becoming a client of Synacor like its acquiring company, WOW!
### Figure 11: TV Everywhere Taxonomy, June of 2012

<table>
<thead>
<tr>
<th>Rank</th>
<th>MVPD</th>
<th>Subscribers</th>
<th>Name</th>
<th>Operator</th>
<th>TV Everywhere Business Model</th>
<th>Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Comcast Corporation</td>
<td>22,343,000</td>
<td>Xfinity</td>
<td>Self</td>
<td>Free Access to Package Level</td>
<td>Expansive</td>
</tr>
<tr>
<td>2</td>
<td>DirecTV</td>
<td>19,880,000</td>
<td>DirecTV Everywhere</td>
<td>Mixed: uses some Network portals</td>
<td>Free Access to Package Level</td>
<td>Limited</td>
</tr>
<tr>
<td>3</td>
<td>Dish Network</td>
<td>13,967,000</td>
<td>Dish Online</td>
<td>Self</td>
<td>Free Access to Package Level</td>
<td>Expansive</td>
</tr>
<tr>
<td>4</td>
<td>Time Warner Cable</td>
<td>12,061,000</td>
<td>TWC TV</td>
<td>Self</td>
<td>n/a, limited live TV only</td>
<td>N/A, by area</td>
</tr>
<tr>
<td>5</td>
<td>Cox Communications</td>
<td>4,761,000</td>
<td>Cox TV Online</td>
<td>Self</td>
<td>Free Access to Package Level</td>
<td>Limited</td>
</tr>
<tr>
<td>6</td>
<td>Charter Communications</td>
<td>4,325,000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>7</td>
<td>Verizon Communications</td>
<td>4,173,000</td>
<td>FiOS TV Online</td>
<td>Unclear: Snyacor relationship exists</td>
<td>Free Access to Package Level</td>
<td>Expansive</td>
</tr>
<tr>
<td>8</td>
<td>AT&amp;T</td>
<td>3,791,000</td>
<td>U-verse</td>
<td>Self</td>
<td>Free Access to Package Level</td>
<td>Expansive</td>
</tr>
<tr>
<td>9</td>
<td>Cablevision Systems Corporation/Optimum</td>
<td>3,250,000</td>
<td>iO TV</td>
<td>Self</td>
<td>Free Access to Package Level</td>
<td>N/A, by area</td>
</tr>
<tr>
<td>10</td>
<td>Bright House Network</td>
<td>2,092,000</td>
<td>n/a</td>
<td>Only Networks with their own portals</td>
<td>Free Access to Package Level</td>
<td>Very Limited</td>
</tr>
<tr>
<td>11</td>
<td>Suddenlink Communications</td>
<td>1,252,000</td>
<td>Suddenlink2GO</td>
<td>Snyacor</td>
<td>Free Access to Package Level</td>
<td>Expansive</td>
</tr>
<tr>
<td>12</td>
<td>Mediacom Communications Corp.</td>
<td>1,069,000</td>
<td>TV Everywhere</td>
<td>Snyacor</td>
<td>Hidden portal access; free online videos only</td>
<td>Limited</td>
</tr>
<tr>
<td>13</td>
<td>Insight Communications Company</td>
<td>663,000</td>
<td>n/a</td>
<td>n/a</td>
<td>Recently Acquired by Time Warner Cable</td>
<td>none</td>
</tr>
<tr>
<td>14</td>
<td>CableOne, Inc.</td>
<td>621,000</td>
<td>n/a</td>
<td>Relationship with Snyacor announced</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>15</td>
<td>WideOpenWest Networks, LLC (WOW!)</td>
<td>428,000</td>
<td>WOW! TV</td>
<td>Snyacor</td>
<td>Hidden portal access; free online videos only</td>
<td>Limited</td>
</tr>
<tr>
<td></td>
<td>Service Name</td>
<td>Subscribers</td>
<td>Price</td>
<td>Relationship with Snyacor</td>
<td>Notes</td>
<td>Conflict with Snyacor</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------</td>
<td>-------------</td>
<td>-------</td>
<td>----------------------------</td>
<td>--------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>16</td>
<td>RCN Corp.</td>
<td>334,000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>17</td>
<td>Knology Holdings</td>
<td>257,000</td>
<td>n/a</td>
<td>Relationship with Snyacor announced</td>
<td>Recently Acquired by WOW!</td>
<td>none</td>
</tr>
<tr>
<td>18</td>
<td>Atlantic Broadband Group (ABB)</td>
<td>255,000</td>
<td>n/a</td>
<td>Snyacor</td>
<td>Hidden portal access; free online videos only</td>
<td>Limited</td>
</tr>
<tr>
<td>19</td>
<td>Armstrong Cable Services</td>
<td>239,000</td>
<td>n/a</td>
<td>Relationship with Snyacor announced</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>20</td>
<td>Midcontinent Communications</td>
<td>227,000</td>
<td>n/a</td>
<td>Relationship with Snyacor announced</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>21</td>
<td>Service Electric Cable TV Incorporated</td>
<td>217,000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>22</td>
<td>MetroCast Cablevision</td>
<td>172,000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>23</td>
<td>Blue Ridge Communications</td>
<td>168,000</td>
<td>n/a</td>
<td>Relationship with Snyacor announced</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>24</td>
<td>General Communications</td>
<td>143,000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>none</td>
</tr>
<tr>
<td>25</td>
<td>Buckeye Cable System</td>
<td>134,000</td>
<td>n/a</td>
<td>Snyacor</td>
<td>Hidden portal access; free online videos only</td>
<td>Limited</td>
</tr>
</tbody>
</table>

Among other features of Figure 11, note that the available packages of online programming are a relatively small subset of the MVPD subscription packages. In terms of content diversity, the current MVPD leaders are Comcast and Verizon, with AT&T and Dish Network closer behind than the longer list of MVPDs that have verification agreements with network groups like TBS through their own websites. Comcast and Verizon have the longest lists of online premium channel access and generally provide more access options than competitors, like currently being the only MVPDs to provide access through Microsoft’s Xbox Live service. AT&T and Dish Network round out the group of only 4 MVPDs providing TV Everywhere access to Encore, Starz, and Movieplex premium channels.

One reason for these package differences is that MVPDs have reportedly encountered numerous practical difficulties in navigating a snarl of contracting problems that would permit
comparable online programming to be offered. Note also that the available online offerings vary according to which cable programming networks are already available to subscribers at the local level. Some cable networks, for example, are carried by only some local systems of an MSO, and the online availability of the given network’s programming online varies accordingly.

Bundling of offline and online content by media companies is very common among some other media, notably newspapers and magazines. Our review of the 10 largest circulation newspapers and the five local newspapers with highest print penetration indicated that all of them offer offline/online bundles. While a number of them (eg, The New York Times) offer free online access with a print subscription, many also offer standalone digital services, in some cases for free, but often with different prices for different subscriber reception devices (eg, iPads, Kindle, etc.). While with little exception MVPDs that have digital services offer online programming for free with authentication, newspapers typically offer mixed bundling (ie, an offline/online package as the only option) or free online access.

Our review of the 10 highest circulation magazines shows a similar pattern, with a variety of bundling and pricing models. In most cases, online access is unconditionally free, but most tablet-formatted content or e-editions (versions that preserve the order and layout of the magazine) require subscriptions or, in some instances, can be purchased at a discount without paying for the print subscription. One exception is Time, which offers print and online access to its magazine content as a bundle, but also standalone online access for a separate price. The Time portal also provides free access to other content not printed in its magazine, which makes a portion of its content more resemble the business models of the cable news channel portals. While not within the top 10 magazines, The Economist offers a notable payment option; its ‘digital-only’ package is the same price as the ‘digital and print’ package, essentially throwing in the printed edition for free, rather than the opposite pattern demonstrated by many other media distributors.

An obvious difference between the newspaper and magazine cases and MVPD is that online distribution of print media began much earlier so that print/online marketing is more mature; and it has received as a result some academic attention. In the newspaper case, Francois (2010) compared online business models of British newspapers. Mensing (2007)
compared online revenue business models of newspapers over time. Adams (2007) and Bleyen and Van Hove (2010) consider offline and online sales strategies from a bundling perspective and found that higher quality newspapers tend to offer separate print and website subscriptions and a la carte articles for sale, while newspapers with higher print subscription market shares are more likely to offer pdf, or digital newspaper facsimile subscriptions. While these articles document a wide variety of online newspaper business models, they focus on the decision of how the online service is itself priced by the newspaper parent rather than bundling strategies. However, Venkatesh and Chatterjee (2006) investigated circumstances in which it is optimal to bundle offline and online magazine subscriptions. They found that optimal strategies vary depending on relative advertising revenues of the two, the marginal costs of providing online and print versions, and consumer valuations. These authors offer a variety of marketing advice to magazine publishers, including the observation that although some magazines do provide free online access with a print subscription, that is generally not profitable except as a long term strategy to build demand.

None of these previous authors approach offline/online bundling from a price discrimination perspective, which has been the dominant perspective of a large general literature on bundling in the economic literatures (generally beginning with Adams and Yellen, 1976).

We proceed below to develop two numerical models of TV Everywhere from that perspective. In one model, we demonstrate how stated claims by MVPD executives that TV Everywhere is designed to prevent offline subscribers from “cutting the cord,” can be interpreted as a price discrimination device in which “low value” consumers are offered online video for free to decrease the probability that they will switch. Then in a second version of that model, we show how the MVPD price discrimination incentive can result in the foreclosure of a competitive online video market. Both model versions require that the MVPD have market power, but neither involves anticompetitive intent. (In a later part of the paper, Section VII, we consider anticompetitive motives and effects.)
A. *TV Everywhere* Model 1: Beneficial MVPD Price Discrimination

1. **Base case: No online video services exist**

   Assume that we have a local monopoly cable operator. There are 100 consumers who each value the service at $100 per month. Let us also say that the cable system’s marginal cost per subscriber equals $70 and is constant over all subscribers. There are no fixed or other costs. An important assumption is that price is greater than marginal cost, which reflects market power. Also for simplicity, assume that the cable operator cannot overtly price discriminate among its MVPD subscribers. (We also assume that an indeterminate number of other consumers in the market are willing to pay less than $100, but for simplicity we ignore this group by assuming the operator will never have an incentive to serve them.)

   **Base case result:**

   The cable operator will set monthly price = $100;
   Resulting profit = 100 x ($100-$70) = $3000.

2. **Case II: online video develops**

   Let us now say that Internet video arrives, and inspired by the Nielsen online usage data cited above, price demands among the 100 potential subscribers changes as follows:

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (80)</th>
<th>Group 2 (20)</th>
<th>Marginal Cost/Subscriber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Service</td>
<td>$100</td>
<td>$90</td>
<td>$70</td>
</tr>
<tr>
<td>Standalone Online TV</td>
<td>$0</td>
<td>$15</td>
<td>$25</td>
</tr>
<tr>
<td>Aggregation Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable + Online TV</td>
<td>$100</td>
<td>$100</td>
<td>$85 ($70+$15)</td>
</tr>
<tr>
<td>Aggregation Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bundle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Now there are two homogeneous groups among the 100: a majority (80 of 100) whose demands for offline cable service are unaffected by the availability of any online video. A minority (20 of 100), however, are now willing to pay only $90 for cable due to their access to a variety of online video or other Internet entertainment.
As indicated by the second line, however, an online subscription video aggregation service, such as TV Everywhere—or a comparable standalone aggregation of video by a competing firm—would generate $15 in value to group II as an alternative to cable service. That is, online video aggregation is a contestable market with free entry. Finally, a package of cable and an online TV aggregation service would be valued by members of Group II at $100, an increase of $10 over the value of cable service.

To complete the cost picture, say that a standalone online TV aggregation service would have a marginal cost per subscriber of $25, but due to economies of scale, the cable operator could offer the TV aggregation service in combination with cable service at a cost of $15 per month. That is, we assume that a standalone online aggregation service is not profitable (for the cable operator or for an independent entrant.) In fact, although it is less expensive for the cable operator to offer an online aggregation service in combination with offline service, the incremental cost of $15 is greater than the increase in the value of the Group II subscriber’s cable service if it includes a free online video aggregation service, such as TV Everywhere. In that sense, TV Everywhere is also “unprofitable,” even as a bundled service.

Case II results:

(a) the standalone cable service option:

The MSOs optimal price remains at $100.
Profits at the $100 price point = 80 x ($100-$70) = $2400.
If the cable operator charged $90 to capture all 100 of its potential offline subscribers, its profits would be only 100 x ($90-$70) = $2000.

(b) the cable + free TV Everywhere with authentication option:

Price for the combination again rises to $100, capturing all 100 potential subscribers.
Profit at the $100 price point = 100 x ($100-$70) – 20 ($15) = $2700.

Thus, even though providing TV Everywhere reduces profits from the initial, pre-Internet total of $3000, the cable operator is able to prevent offline disconnections among Group II subscribers. In effect, Group II have become “low value” cable consumers who can be retained
by offering the combined service. In effect, online TV bundling is an implicit price discrimination strategy by cable operators to sell both to its high and low value consumers.

These demand and cost assumptions, while again simplistic, are intended to reflect MVPD claims (e.g., Israel and Katz, 2010) that a standalone video aggregation service is currently unprofitable, and that the purpose of TV Everywhere is to dissuade current cable subscribers from disconnecting their cable service. Even though we assume that a standalone TV aggregation service is unprofitable (the cable operator in fact loses $5 per Group II subscriber by offering online aggregation in the sense that Everywhere TV’s incremental value is $10 while its incremental cost is $15) the cable operator makes higher profits offering the bundle (but not the option of standalone online service) than if its Internet-oriented consumers disconnected and were satisfied by other Internet entertainment options.

Note further than the cost of operating an online aggregation service should be interpreted as the present value of expected long term costs. That is, its provider is likely to accept short term losses, such as newly launched cable TV networks typically experience, for example, but over time a stream of profits is expected to be realized.

Finally, note the importance of the relatively large gap between the value (and thus price) of cable service, and its marginal cost of $70 in the initial case, relative to the price-cost margins of online aggregation. If it were not for this dominating gap between price and marginal cost for cable service, such a bundling strategy would not be profitable for cable operators.

B. TV Everywhere Model II: Online video market “foreclosure” due to cable operator price discrimination

An interesting variation on the model uses the same cost assumptions for an online video aggregation service as before, but a modified demand structure.
<table>
<thead>
<tr>
<th></th>
<th>Group 1 (80)</th>
<th>Group 2 (20)</th>
<th>Marginal Cost/Subscriber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Service</td>
<td>$100</td>
<td>$90</td>
<td>$70</td>
</tr>
<tr>
<td>Standalone Online TV Aggregation Service</td>
<td>$0</td>
<td>$30</td>
<td>$25</td>
</tr>
<tr>
<td>Cable + Online TV Aggregation Service Bundle</td>
<td>$100</td>
<td>$110</td>
<td>$85 ($70+$15)</td>
</tr>
</tbody>
</table>

In this case, demand is higher for the online aggregation services, both as a substitute for cable service, or as part of a package with cable service.

**Model II results:** Entry into standalone online aggregation could be profitably made. For the cable operator, however, it would be more profitable to offer cable service and online TV as a bundle for $100. In this case, Group II consumers receive surplus value of $110 - $100, which exceeds the maximum surplus ($30-$25 = $5) that standalone online services could provide if competitive entry bids down the standalone price to the $25 cost.

Profits for the cable operator from the offline/online bundle = 80 ($100-$70) + 10 ($100 - $95) = $2450, greater than the $2400 profit if cable service were sold only to the 80 high value consumers at $100.

In fact, if it were assumed that the cable operator could charge different prices for both the offline and online services, it could sell its bundle for as much as $104, and still provide greater consumer surplus than a standalone online service.

In this way, a cable monopolist can profitably bundle its offline and online aggregation services, essentially by foreclosing an otherwise profitable market for standalone online service.

The essential feature of this model is that the value of implicit price discrimination to the cable operator, by serving to prevent cable disconnects, is sufficiently great that foreclosing a potentially competitive online aggregation model by *underpricing* the bundle, becomes profitable. The model works because the total value of the bundle to the minority group of 20 is greater than the value of cable service alone to the majority group.
More broadly, the viability of the model depends on how valuable it is to cable operators to preserve their base of cable subscribers. As the size of Group II rises relative to I, the profitability of discriminating to prevent disconnects falls relative to the profitability of reducing retail prices of cable service. In the numerical model, if Group II becomes larger than Group I, the price discrimination incentive disappears. Also, as the value of the standalone online aggregation alternative grows relative to that of the offline cable service, the opportunities for cable operators to follow such a bundling strategy also fall. In the numerical model, if the value of the standalone online service were $40, cable operators could not profitably undercut entry by bundling.

Our above review of newspaper and magazine offline/online product marketing suggests how offline/online bundling in television may evolve as it matures: a wider variety of packages and pricing options, including standalone online video services. The MVPD industry, however, has some unique characteristics: arguably more local market power than newspapers, and especially more substantial national market shares, in terms of all MVPD and/or ISP subscribers.

VI. **Anticompetitive behavior**

From an antitrust perspective, anticompetitive behavior generally involves intent to monopolize, which in turn suggests unprofitable behavior in the short turn in order to increase potential long run profits. While Model II at least may have undesirable consequences, anticompetitive intent in the MVPD/online television market cannot be illustrated with as simple a numerical model as that in Sections B and C above.

Conceivably, offline/online bundling could be used by an MVPD to leverage its offline market power into the online video market, either to preserve its offline power by preventing the online market from developing, or by attempting to monopolize the online video market. For example, the MVPD monopolist might be able to influence competition in the online market in this way if existing or potential online competitors are more poorly financed. A more likely and straightforward scenario would involve unilateral or collusive attempts by one or more MVPDs to use their market influence to restrict access of online video competitors to an
adequate supply of programming (Ammori, 2010). The possibility of such strategies was the focus of FCC and DOJ concerns in their investigations of the Comcast-NBCU merger in 2010-11. (FCC, 2012; Baker, 2010). While the viability of such strategies is controversial, they have an apparently long history in the television and video industries. The alleged withholding of cable programming from DBS in the late 1980s and early 1990s inspired the cable program access rules that were adopted in the 1990s (FCC, 1990, 1993; Waterman and Weiss, 1997). In media more generally, alleged withholding of content from emerging competitive media, involving newspapers, radio, and motion picture theaters have been alleged (Ammori, 2010).

Another potential form of anticompetitive behavior is the use of ISP market power to influence competition in the online television market. Specific strategies include exemption of affiliated or other program suppliers by ISPs from “data caps,” or other “network management” practices that are inconsistent with network neutrality principles.

The anticompetitive viability of “content starvation”, as well as offline/online tying, or ISP network management approaches, are controversial, but it is possible to make a few useful generalizations about the conditions under which any such anticompetitive strategies would have any practical impact. First we consider the role of horizontal concentration in the MVPD and ISP markets and then vertical integration.

1. **Horizontal market power at the MVPD or ISP levels.**

In order for any anticompetitive strategy—or in fact a short term profit maximizing strategy such as that in the price discrimination models above—to have any effect on the online video market, the firm’s national (as well as local) market shares of either MVPD subscribers or ISP subscribers must be significant. Otherwise, the strategy, while obviously affecting subscriber access at the local level, can have no significant effect on program suppliers at the national level—and thus no significant effect on development of the online video market. In the MVPD case, no leverage over program suppliers can be exerted because the actions of the MVPD do
not significantly affect national program supplier profits. This statement applies both to anticompetitive intent and to efficiency motivated behavior.\textsuperscript{13}

Similarly at the ISP level, no anticompetitive strategy to affect competition at the aggregation or program supply level can have any significant effect unless the ISP has a significant national market share. A data cap exemption by Comcast, for example, would not allow Xfinity, to prosper relative to Netflix, unless the Comcast ISP had a significant national market share.

Furthermore, if it were to be determined that there is a significant risk of national collusion at either the MVPD or ISP level, the magnitude of the effects on the programming market, and thus the online market, would obviously be greater. It is for this reason that the actions by Comcast, Time Warner, Dish, AT&T, and other major players justifiably attract much more attention than that do those of small MSOs or other MVPDs.

Returning briefly to Table 1, if the intentions of TV Everywhere plans were largely anticompetitive, we would expect to observe only the larger MSOs or ISPs engaging in these strategies. The larger MVPDs were indeed the first to offer these plans. The plans are increasingly appearing, however, among smaller MVPDs without significant national market shares. That fact appears to confirm that the plans do not also have efficiency motives (which generally include price discrimination.) On the other hand, the TV Everywhere model is less prevalent among smaller MSOs. That fact, however, can be difficult to judge because there are apparent economies of scale in offering these plans, as suggested by the prominence of Synacor, which essentially serves as an TV Everywhere TV syndicate to these services. In fact, the National Cable Television Cooperative (NCTC) announced in July, 2012 that it would assist its 80 independent cable operators with developing TV Everywhere models (NCTC, 2012).

\textbf{2. Vertical integration into programming supply and/or content aggregation.}

Anticompetitive strategies, such as those described above, can be facilitated by vertical integration. For example, an MVPD (or ISP) can make a more credible threat to withhold

\textsuperscript{13}The significance of national shares is recognized implicitly and explicitly in a history of FCC reports involving the cable and other video industries. See especially FCC (1990, 2010), and various of the FCC’s 14 annual reports on the status of competition in the video industries.
programming if it owns that programming rather than if it merely puts pressure on the supplier by threatening to disadvantage its carriage on the MVPD or ISP. Clearly, however, the same pressure by MVPDs can be applied to non-vertically integrated programming suppliers, as Ammori (2010) reports for the online TV case. The essential feature is the presence of horizontal market power by incumbent firms (in this case MVPDs)--which requires substantial national market shares to be credible. Vertical integration may or may not have much significance.

The particular economic advantages of aggregation in both the offline and online video programming markets were also discussed above. What if an MVPD also owns an online content aggregator, such as Xfinity? From the MVPD perspective, offline MVPD and online content aggregation is horizontal, rather than vertical, integration. However, if the MVPD owns both an ISP and an online aggregator, the aggregator could be favored by the ISP in a variety of ways (such as data cap exemptions). In this respect, vertical integration may be important because it could be a much more blatant violation of network neutrality principles for an ISP to favor the programming of a non-affiliated aggregator (eg, Netflix) rather than an affiliated aggregator (eg, Xfinity). Similarly, if aggregation becomes a dominant online video model and is in fact subject to winner-take-all characteristics, persuading enough cable program suppliers to withhold online service from competing online aggregators can be essential. In that environment, vertical integration could greatly enhance the credibility of a content withholding strategy of one or more MVPDs. Again, however, such a strategy can involve both vertically affiliated and unaffiliated program suppliers.

VII. Conclusion

So far, the online television industry appears to be unfolding in a vibrant way. Many parallels with the development of the cable TV programming industry in the 1970s and 80s can be seen. Like in the cable industry and later the DBS industry case, however, pro-competitive policies from the federal government are essential for this industry’s economic success.

References:


NCTC. (2012, July 20). NCTC launches TVE solutions for small operators *(press release).*


