

Old Media vs. the Internet in the United States

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I. Introduction

In 2008 and the first half of 2009, most of the U.S. media have suffered declining revenue or slower growth as overall economic activity has contracted. Among hardest hit have been some of the oldest, longest established U.S. media, including newspapers and broadcast television.

For many years, people have speculated that established media industries will disappear as new technology—this time the Internet-- comes on the scene. The shocks of the recent recession have increased that speculation. Some think the Internet will eventually distribute everything. But others strongly defend the long lives--if not the eternal survival--of the “old” media.

Of course, no one knows how the media landscape will develop. Our purpose is not to make predictions, but it may help a little to have an economic framework for thinking about the future. Of special interest now are Internet effects on television, which is in early stages and very hotly debated in the U.S.

We begin with a brief overview of economic trends, including events of the past year. We then focus on three media, beginning with the two--newspapers and music publishing-- that have already been most affected by the Internet. We then turn to prospects for television, which will receive the majority of our attention.

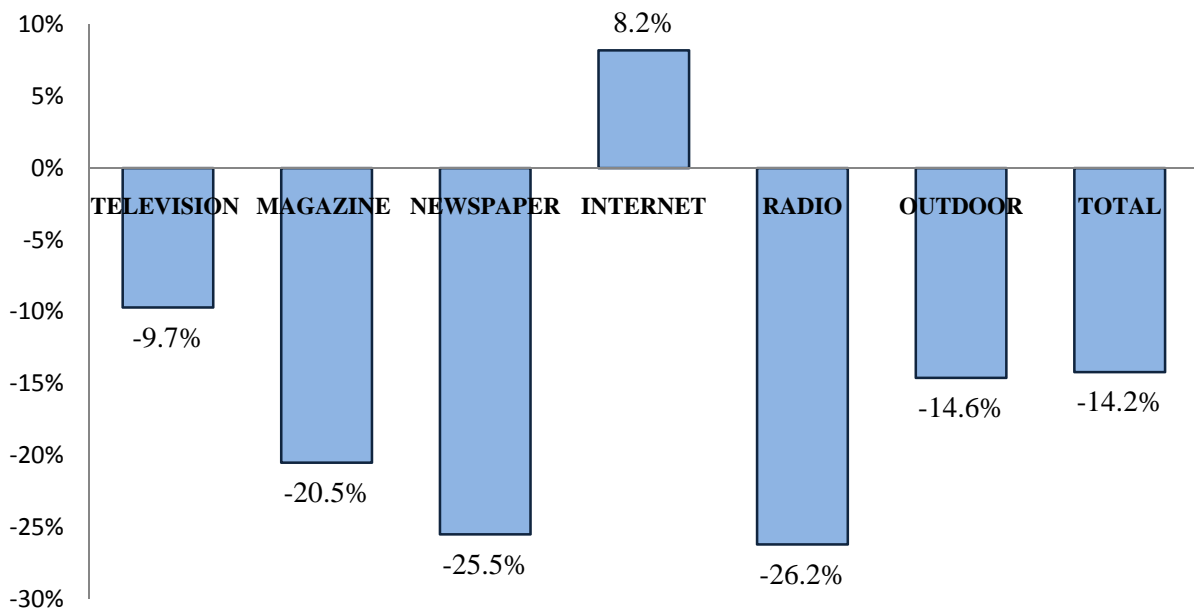
In summary, what we have seen from newspapers and music in the U.S. is that the Internet can be an extremely low cost delivery system; a destroyer of established business models; and a threat to intellectual property rights. The “old” TV industry now faces similar obstacles, but so far, it seems to be on a path of coping with, perhaps in the future to benefit from, Internet video distribution.

II. Overview of Economic Trends in U.S. Media

A. Effects of the financial crisis

“Future may be brighter, but it’s apocalypse now.” This March 23, 2009 headline from the industry trade journal, *Advertising Age*, tells the story. Most media industry analysts expect improvement soon, but the recent news has been very bad. Figure 1 shows some steep declines in major categories of U.S. media advertising for the first quarter of 2009. Only Internet advertising increased. These declines have been much greater than the general economic slowdown in the U.S. GDP, which began during 2008. News Corp, CBS, NBC-Universal and other major media companies have reported losses or sharp profit declines. Early reports for the second half of 2009 are generally no better.

Figure 1
PERCENT CHANGE IN TOTAL U.S. ADVERTISING SPENDING,
Q1 2008 vs. Q1 2009



Source: Derived from *TNS Media Intelligence*, 'TNS Media Intelligence Reports U.S. Advertising Expenditures Declined 14.2 Percent First Quarter 2009' Press Release, June 10, 2009

Some U. S. media companies have responded with retrenchment, including bankruptcy of Tribune Co. (publisher of the *Los Angeles Times* and *Chicago Tribune*) in 2008 and scrambling by the *New York Times* to raise cash for debt payments.¹ Local broadcast TV stations, especially hard hit with 20 to 40% declines in news program revenue in 2009 (usually their major source of income), have pleaded for new government regulations to protect them.² Even *Google*, which had over a 30% share of total Internet advertising in 2008,³ laid off 340 workers in the first three months of 2009.⁴ Many media companies have been shocked by the recent declines and they are rethinking their long term plans.

¹ Suzanne K. Kirchoff, The U.S. newspaper industry in transition, *Congressional Research Service*, July 8, 2009, and *Harvard Business School*, The newspaper industry in crisis, May 22, 2009 are detailed studies of economic events in the newspaper industry.

² Local TV stations hit hard by ad declines, *San Jose Mercury News*, May 22, 2009; An open letter to the FCC's new chairman: save broadcast TV before it is too late, July 27, 2009 (TV News Check)

³ *Emarketer*, 'US Online Advertising Revenues Growth for Top four Web Portals, 2005-2008,' August 2008. Retrieved via 'marketingchart.com' on August 2, 2009, <http://www.marketingcharts.com/interactive/top-internet-portals-to-weather-economic-storm-5735/emarketer-web-portal-online-advertising-revenue-growth-us-2005-2008jpg/>.

⁴ Earnings preview: Low expectations for Google, *Associate Press Financial Wire*, April 14, 2009.

B. The broader economic picture

The long term is the most interesting. Figure 2 shows total U.S. revenues—advertising plus direct consumer payments—for major U.S. commercial media for the five years, 2003-2008. Overall, direct payment revenues accounted for about 43% of total 2008 media revenues from the U.S. market, as defined by this list of industries. Note that the great majority of all U.S. media economic activity is commercial. Under 5% of total television and radio expenditures are accounted for by public TV or radio networks, and these are not included in the data. Note also that the Internet category includes only advertising. Digital music sales are significant and are included in music publishing. However, even though broadband household penetration in the U.S. reached nearly 59% by the end of 2008,⁵ direct Internet sales to consumers of news, television, and most other media products are very low.

Figure 2

ECONOMIC TRENDS IN TOTAL U.S. REVENUE OF SELECTED MEDIA: 2003-2008 (Current \$)

	Total Revenue (current U.S. mil \$)			Total Rates of Growth (%)	
	2003	2007	2008	2003-2008	2007-2008
Newspapers	56.2	52.3	44.5	-20.7	-14.9
Broadcast TV	41.9	44.5	44.7	+6.6	+0.4
Cable TV/DBS	70.6	99.8	105.8	+49.7	+6.0
Magazines	19.6	25.9	24.0	+22.7	-7.2
Radio	19.1	19.2	17.7	-7.4	-7.6
Music publishing*	11.9	10.4	8.5	-28.5	-18.2
Movie theaters/DVD**	30.9	33.1	32.0	+3.5	-3.4
Internet***	7.3	21.2	23.4	+222.7	+10.6
Total media	257.4	306.4	300.6	16.8	-1.9
GDP	10,960.8	13,807.5	14,264.6	+30.1	+3.3

* includes digital sales

** includes retail sales and rentals

*** advertising only

Bold type indicates changes greater than GDP

Sources: Author compilation; see Appendix

⁵ Media Trends 2008 Edition, p.106, *SNL Kagan*

Some conclusions from Figure 2:

- In total, the U.S. media industries shrunk slightly between 2007 and 2008 in current U.S. \$ terms. As a % of GDP, this decline was larger. However, individual media trends over the 2007-08 period for the most part reflect upward or downward trends already in progress since 2003.
- Broadcast television revenues have been flat, but Cable TV and DBS (together called “multi-channel TV systems”) have been very prosperous, steadily growing as a fraction of GDP. (The majority of multi-channel TV system revenues are from direct consumer payments.)
- Internet advertising remains small, but is growing even more quickly than multi-channel TV (It currently accounts for about 8% of total U.S. advertising.)
- Newspapers and music have declined sharply since 2003. These declines have recently accelerated. It is obvious to everyone that the Internet has mostly caused these declines. The movie industry faces the same basic threat as music, but there is not as much evidence of negative effects to date.

III. Economic characteristics of Internet media distribution

The Internet as a media distribution system has remarkable economic advantages, including: extremely low costs of distribution (downloading and sharing), virtually zero content capacity costs—and at least potentially—efficient targeting of advertisements, and efficient systems of direct consumer pricing.

Media consumers—especially young people—are obviously moving to Internet media. Just as important as this consumer migration, however, is that the Internet is also

- (a) a destroyer of established media business models—and not necessarily a creator of better ones, and
- (b) a threat to intellectual property rights

These positive and negative features of the Internet have affected the established U.S. media, however, in quite different ways.

IV. Newspapers

A. Industry Overview

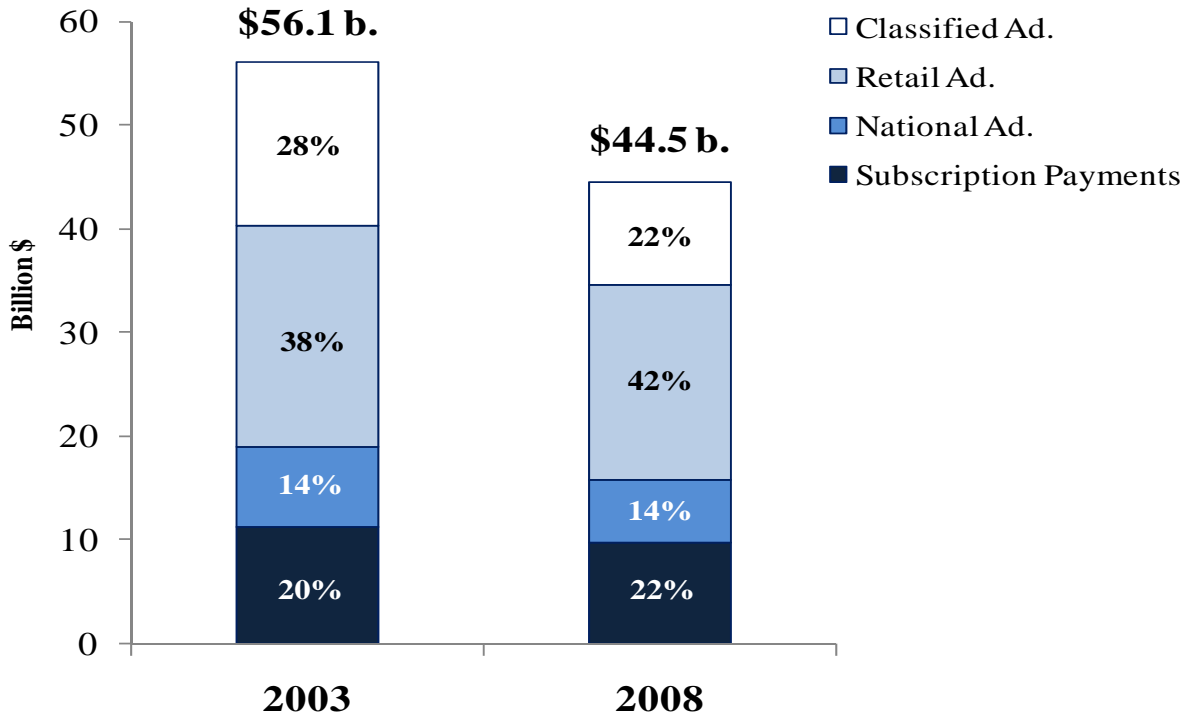
U.S. newspapers tends to be more localized than in many countries. There are three competing national papers, *New York Times*, *Wall Street Journal*, and *USA Today*. These national papers have the largest circulations, ranging from about 1 to 2 million. However, city papers—having circulations ranging from 288,000 to 733,000 in the top 20 U.S. cities in 2007—account for the most of the total circulation of U.S. dailies. Except for a few cases (e.g., New York, Chicago, and Boston), these city papers are local monopolies.

B. Internet effects

Figure 3 shows sharp five-year current \$ declines in all categories of newspaper advertising, especially classified. All newspapers collected a total of only about \$3 billion from Internet distribution of their news products in 2007—virtually all of that from advertising.⁶ Obviously, this amount nowhere near makes up for the declines in print revenues.

Figure 3:

TRENDS IN U.S. NEWSPAPER REVENUES BY SOURCE (CURRENT \$) 2003 & 2008



Source: Author compilation from *Newspaper Association of America, Business Analysis and Research, 'Advertising Expenditure'*, *Newspaper Association of America, 'Circulation Expenditures, Trends & Numbers'*

C. Some observations about newspapers

- The Internet undermines the print business model by “unbundling” the physical newspaper package.
- There is growing consensus that advertising is just not a good business model for Internet news content. The almost zero revenues from direct Internet news sales, however, is not due to a bad business model. The basically zero prices for Internet news can be explained by far higher competition, extremely low marginal costs of

⁶ New push to charge for online content, *San Francisco Chronicle*, May 19, 2009

Internet distribution, and probably by the public perception that most news content is undifferentiated.

- The extreme efficiency of Internet distribution has apparently just evaporated a big part of the market value that newspapers used to have. For example, there are surely more classified ads on the Internet now than newspapers have ever carried. But total revenue reported for all Internet classified advertising in 2008 of \$3.3 billion is much less than the nearly \$10 billion decline in newspaper classified print ad revenues from its peak of \$19.6 billion in 2000 to \$10.0 billion in 2008.⁷
- Newspapers at least have the small advantage of being able to raise subscription prices (such as the *New York Times* has recently done).
- Because newspapers usually monopolize city areas in the U.S. -- almost no matter how big or small those cities are--they can adapt simply by reducing the scale of their news collection operations. Except in the few competitive U.S. markets, probably few papers face liquidation.

In sum, the Internet has damaged newspapers by dramatically reducing the costs of news and advertisement distribution, increasing competition among papers and many other news sources, and undermining the print newspaper business model.

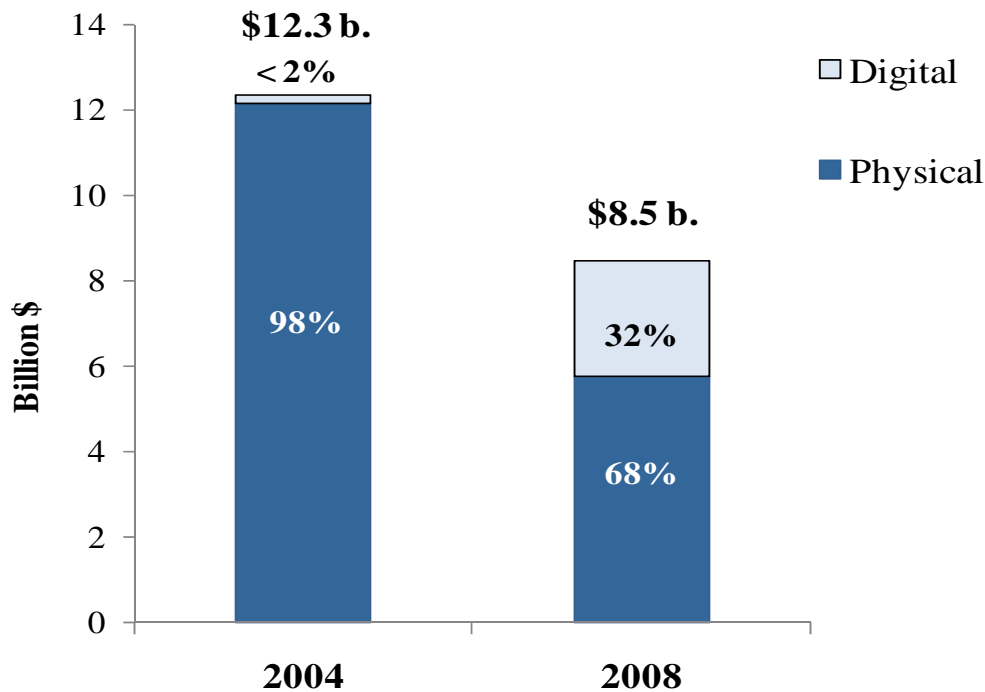
V. Music publishing

Figure 4 shows the severe declines in “physical” (mostly CD) products of music publishers in the U.S. compared to meager increases in “digital” products (mostly online single sales by *Apple* and other Internet distributors).

⁷ *Newspaper Association of America*, ‘Advertising Expenditures,’ <http://www.naa.org/TrendsandNumbers/Advertising-Expenditures.aspx>

Figure 4:

**TRENDS IN MUSIC PUBLISHING REVENUES IN THE U.S., TOTAL RETAIL VALUE
2004, 2008**



* Physical includes CD, CD Single, Cassette, LP/EP, Vinyl single, Music video and DVD video.

** Digital includes Download Single, Download Album, Kiosk, Music Video, Mobile, Subscription, and Digital Performance Royalties

Source: Derived from *Recording Industry Association of America*, 'Year End U.S. Manufacturers' Unit Shipments and Value Chart, Facts & Figures, Key Statistics'

A number of economic studies support the theory that illegal file sharing has been the main cause of the decline in music publishing revenues, although consumer preferences may also be fundamentally changing.⁸ (It should be kept in mind that the decline of the music industry as a whole could be exaggerated by the data on music publishing, because music artists probably now rely more on live performances or related non-sales income that are not part of the music publishing statistics.)

A. Observations on music publishing:

- Online single song sales are a creation of Internet efficiency. Online sales could not exist as a business without the extremely low costs of Internet distribution.
- It is a good guess that the very low prices charged for single sales (around \$1) would be much higher if the piracy alternative did not exist.

⁸ Stanley J. Liebowitz, File sharing: creative destruction or just plain destruction?, *Journal of Law and Economics*, 2006, 49, p. 1-28.

In sum, the music industry's decline can mostly be blamed on its inability to protect intellectual property on the Internet. Certainly that is the greatest threat to the movie industry as well. If it were not for the inability to protect intellectual property it seems likely that the music industry could only have benefitted from Internet distribution as just another way to sell the same music.

VI. Television

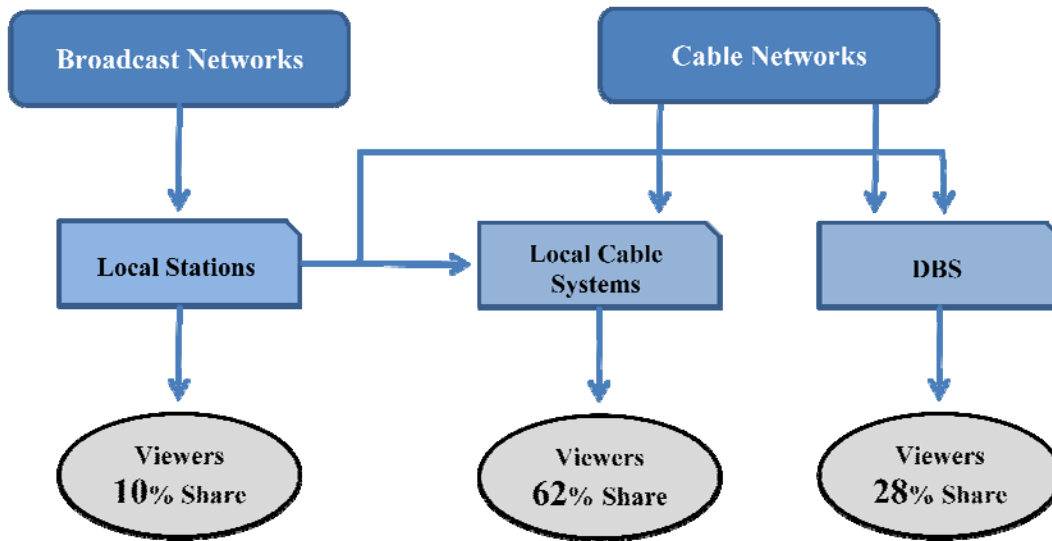
The TV industry in the U.S. is more complex, and the Internet may affect broadcasting or cable television networks differently than it affects cable TV systems or other multi-channel TV distributors.

A. Industry overview

The great majority--about 90% of viewers in the U.S. -- now receive their television service by means of commercial multi-channel providers (Figure 5). These providers are primarily local cable television systems (serving about 3 in 5 households) and DBS (serving about a quarter of households). A dwindling number—only about 10% of U.S. households--receive TV only from local broadcast stations.⁹

⁹ *Television Bureau of Advertising*, Local Cable Reach Guide Feb'09, http://www.tvb.org/rcentral/markettrack/Interconnect_Penetration_by_DMA.asp?pdfchoice=%2Fpdf%2Frcentral%2FTVB_Local_Cable_Reach_Guide-Jul08.pdf&Action.x=35&Action.y=5

Figure 5:
OVERVIEW OF THE U.S. TV INDUSTRY, 2008

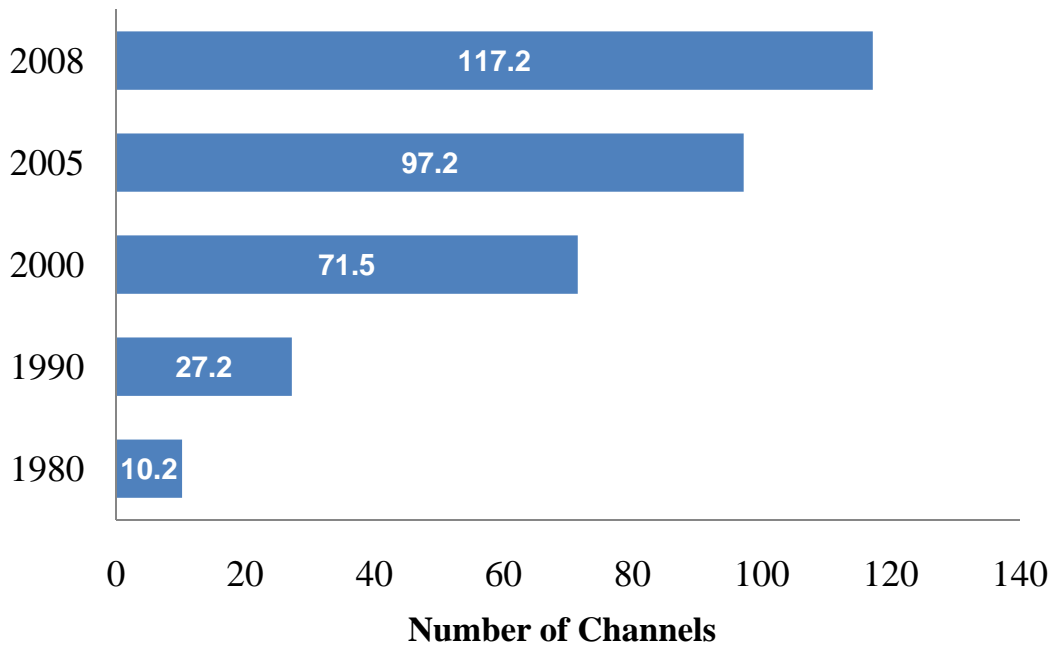


There are four major commercial broadcast networks, which are 100% advertiser supported and are basically available to 100% of U.S. households. They reach these viewers either directly by means of local broadcast stations, or through the multi-channel providers (all of which carry the local broadcast stations).

The multi-channel providers also carry numerous cable TV networks. Many of these (called “basic” networks, like *CNN* and *ESPN*) are partly supported by advertising and partly by fees that they charge cable and DBS operators. Others are supported only by monthly subscription fees (“premium” networks like *HBO*), or by per-program charges (“pay-per-view” networks like *On Demand*). These cable TV networks are only available to cable systems or to DBS systems that choose to carry them, so they can reach a maximum of about 90% of U.S. households, and many smaller ones reach fewer households. Some reach fewer households because they are carried only on “digital tiers” of cable systems, which are packages of digitally transmitted networks available to subscribers only for extra monthly charges. Also, premium or pay-per-view networks are usually only available to subscribers who buy digital tiers. (About one-third of U.S. cable subscribers now buy digital tiers.)

The average U.S. household now receives a huge supply of over one hundred cable TV networks or broadcast stations (Figure 6). This number has greatly increased over time as a result of rising cable TV and DBS system penetration. Another reason has been the diffusion of digital technology, which generally allows six to 12 channels to be transmitted by a cable system in the spectrum space formerly occupied by a single analog channel. (These digitally compressed channels mostly make up the digital tiers that cable operators now offer.)

Figure 6:
THE AVERAGE NUMBER OF CHANNELS RECEIVABLE PER U.S. TV HOUSEHOLD, 1980-2008



Source: Author compilation from TV Dimensions (2009), ‘Average Number of Channels Receivable Per U.S. TV Home, Channels Available Per Home’ *Media Dynamics, Inc.*

We saw earlier that the total size of the broadcast TV industry has been slightly declining in the U.S. as a proportion of GDP. This stagnation has partly been caused by the increasing competition from cable TV networks entering the market since the 1980s. Although their total advertising revenues have remained fairly steady, the average audiences of the major broadcast networks have declined over time. The three major networks accounted for 32% of total TV viewing in 1990, but for only 14% in 2008.¹⁰ However, the prime-time programs on the major broadcast networks generally still attract larger total audiences than those of the cable networks. Figure 7 lists the 10 largest U.S. television networks, in order of their average audience size during a recent 2 week period in 2009. The popularity advantage of the major broadcast network programs has made them more attractive for Internet distribution, and that is why the broadcast networks have been at the center of the Internet TV debate.

¹⁰ TV Dimensions 2009, ‘ABC/CBS/NBC network share of household audiences by daypart,’ *Media Dynamics, Inc.*, pp. 83.

Figure 7:
Broadcast & Cable TV Primetime Weekly Ratings
(Two weeks average from July 13 - 26, 2009)

Network	Rating*	Type	Most popular programming
CBS	2.1	Broadcast	The Big Bang Theory, CSI
FOX	1.9	Broadcast	So You Think You Can Dance, Family Guy
NBC	1.8	Broadcast	Biggest Loser, Farrah's Story
ABC	1.4	Broadcast	Dancing with the Stars, Grey's Anatomy
USA	1.1	Cable	Burn Notice, Royal Pains
DISNEY	1.1	Cable	Wizards of Waverly Place, Hannah Montana
UNI	1.1	Broadcast	Aqui Y Ahora, Manana Para Siepre
TNT	<1%	Cable	Leverage
Fox News	<1%	Cable	The O'Reilly Factor, Fox & Friends Weekend
NAN	<1%	Cable	George Lopez, Roseanne, Home Improvement

* Authors' calculation based on Nielsen TV weekly ratings data. Rating is defined as the % of homes which have TVs that are watching the program

Source: Author compilation from *tvbythenumbers.com*, "Our TV Ratings, News and Information", based on *Nielsen TV Ratings Data*

B. Development of Internet video

Video distribution over the Internet began to explode in 2005 with the launch of *YouTube*, later purchased by Google.¹¹ In addition to the huge volume of amateur programs, individuals quickly began posting episodes of popular network broadcast programs, like *Saturday Night Live*, and anyone could watch them for free with no commercials.

Research has shown that online availability may have even increased standard broadcast TV viewing of these programs,¹² but suppliers of professionally produced, copyrighted programs soon became alarmed. The broadcast networks issued "take-down" orders to *YouTube* and similar video sites under the U.S. copyright law. Viacom, a major producer of broadcast and cable TV programs, was still dissatisfied, and sued *YouTube* in 2007.

Immediately after the suit was filed, two of the broadcast networks, *Fox* and *NBC*, launched their own website, *hulu.com*, which mostly features recent series programs of these networks, including pre-roll and within-program advertisements. These ad revenues are shared between *Hulu* and the networks. *ABC/Disney* later joined the *Hulu* venture. *CBS*, however, has stayed on its own with *TV.com*, where many of its series programs are available.

¹¹ Harvard Business School, CBS and Online Video, December 15, 2008, has a detailed narrative of the history of the Internet video industry.

¹² Joel Waldfoegel, Lost on the Web: does web distribution stimulate or depress television viewing?, *Information Economics and Policy*, June, 2009, p. 158-168

YouTube continues to dominate Internet video in the U.S., with about a 40% market share of all online videos viewed in April, 2009,¹³ including some programs that either broadcast or cable networks have now licensed them to show with advertising. (Advertisers generally are not interested in sponsoring amateur programs.) *Hulu* attracts far fewer Internet users (a 2.4% share of online video viewing in April, 2009), but *Hulu* advertising revenues was estimated to be \$65 million in 2008 compared to about \$300 million for all of *YouTube*, and that gap is said to be shrinking in 2009. The revenues from Internet distribution of commercial broadcast TV programs, however, remain quite small, however, compared to standard broadcasting. An estimated \$260 million was generated by programs of the four major broadcast networks on *Hulu* and other online video sites in 2008,¹⁴ but that is very small compared to the \$22.8 billion advertising revenues from standard TV distribution of these same networks.¹⁵

C. Effects of Internet distribution on “old” TV

So far, there is little evidence that online viewing of broadcast or cable TV programs has adversely affected standard TV viewing of those programs. We would not expect much adverse effects in any case. The entire volume of internet viewing of videos on *Hulu*, in fact, is still dwarfed by prime time network audiences. *Hulu* was reported to have 397 million total video views in April, 2009,¹⁶ but this is a tiny fraction of prime time broadcast network views in the same period.

Will the established media of broadcast television and cable TV suffer the same fates as the newspapers and music industries? Or will they take somehow take productive advantage of Internet distribution?

D. Observations on the future of broadcast networks

- U.S. copyright law is relatively strong, and copyright protection of broadcast network programs is less seriously threatened anyway because the incentive to steal programs that are already free is low. The networks have already lived for years with viewer elimination of commercials using DVRs or TIVO systems. Also, “digital rights management” (DRM) controls over the authorized distribution of video on the Internet appear to be fairly secure in the U.S.
- So far, the networks have been able to transfer their basic business model of in-program ads to the Internet. It is reported that the cost-per-thousand viewer ad rates are higher for online programs, but that viewers will tolerate much fewer ads-- with

¹³ Americans viewed a record 16.8 billion videos online in April driven largely by surge in viewership at YouTube, Press Release, ComScore, June 4, 2009

¹⁴ *Screen Digest*, Major US broadcaster-backed online networks claim over half of free online TV in US, June 29, 2009, http://www.screendigest.com/press/releases/pdf/PR-USbroadcasters_onlineTVrevenues-280609.pdf

¹⁵ *Advertising Age*, ‘ABC, CBS, CW saw declining ad revenue in '08; FOX, NBC helped by sports,’ April 07, 2009, <http://pifedback.com/eve/forums/a/tpc/f/22810261/m/636109102>

¹⁶ Google says video ads on a roll, *Investor’s Business Daily*, July 20, 2009.

the result that total revenues per viewer are lower.¹⁷ This might mean a bad future for the networks. However, it also may mean that viewers will just not endure more ads in exchange for the Internet viewing experience because it is still lower quality than standard television. Also, since Internet distribution of TV is cheaper than standard television, we would expect revenues per viewing to be driven lower. Ad rates may also be lower, however, because viewing of programs is not simultaneous, which is valued by advertisers.

- In the long term, the broadcast TV industry in the U.S. is handicapped by its historic reliance on advertiser support--not a good business model in the age of multi-channel television systems.
- The U.S. broadcast TV industry continues to rely on a relatively expensive and clumsy technology for distributing its signals to local stations in over 200 local market areas. The Internet at least allows for a direct pricing model to be used by the networks, and as multi-channel penetration rises, the broadcast network option to abandon the local TV station distribution system will become more and more attractive.

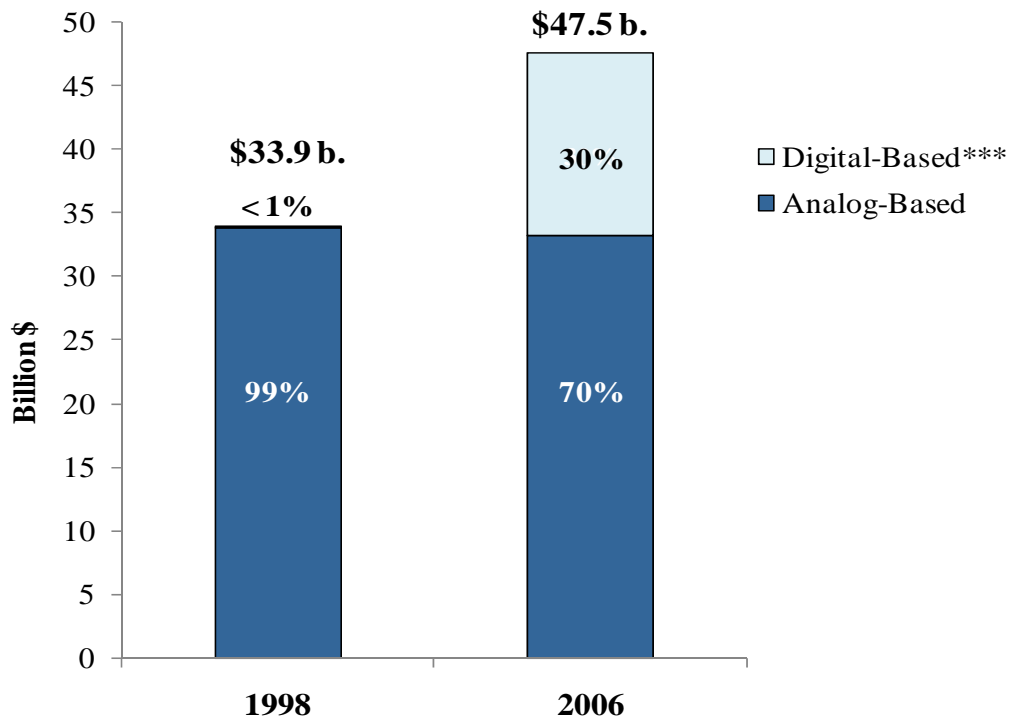
E. Observations on the future of cable TV

- Cable TV network programs have so far been less common online because they are usually less desirable to viewers. The cable industry and its programming suppliers have not yet been adversely affected by online viewing.
- Basically, cable TV systems have prospered magnificently in the U.S. because they have a very powerful technology and a versatile business model that allows them to efficiently charge consumers directly for programs. These programs can be bundled and priced to consumers in a variety of ways. As we argue in another paper,¹⁸ the U.S. conversion to digital television transmission in the U.S. since the mid-1990s has in the end helped cable and DBS more than it has helped the broadcast industry. That is basically because digital technology works in favor of direct payment systems, which the broadcast industry cannot easily take advantage of. As Figure 8 shows, a large fraction of the increase in cable system revenues for television services over the 1998-2006 period has come from selling digital tiers and other digital services, such as DVR, to subscribers. Cable TV operators have also been able to successfully provide broadband Internet access and telephone service. These services are now a major part of the cable TV business model.

¹⁷ Free on Internet blurs pay-TV picture *Investor's Business Daily*, Feb. 26, 2009.

¹⁸ Waterman & Han (2009), The Economic Effects of Digital Transition on Television Program Supply, forthcoming to 'the 37th Research Conference on Communication, Information and Internet Policy, September 25-27, 2009

Figure 8:
U.S. CABLE OPERATOR REVENUE FOR TV SERVICES* BY TYPE (CPI deflated \$)**



* Not including cable modem and related service

** Based year; 2007 = 100

*** Digital-Based includes DVR, all digital tier programming; assuming all premium networks sold on digital tier in 2008

Source:

Compilations based on *Paul Kagan Associates, Adams Media Research; Federal Communications Commission, 'Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming', Thirteen Annual Report, p. 23, 'Table 5: Cable Industry Revenue and Cash Flow: 2004-2006'*

- The long term threats to the cable business model are in one way greater than in broadcasting. A little like newspapers, cable TV systems are aggregators of information, which they directly sell to subscribers in bundles. If individual cable networks provide the rights to their programming online, or cable operators are otherwise unable to control the property rights to the programming they offer, their business model could be unraveled. This possibility is made more threatening by the interdependence of broadband access and telephone service in the cable TV business model.
- For the future, two factors are in the favor of cable system operators. One, cable operators can make contracts with their program suppliers forbidding direct Internet distribution, that are probably mutually advantageous to both parties. Second, they can try to extend the packages their subscribers buy from them already to the Internet. The “Everywhere TV” system announced this month by the two largest cable

operators in the U.S., Comcast and Time-Warner, is an attempt to do that. Those who already have a Comcast or Time-Warner cable system can watch the same programming on the Internet for free.

A big challenge to all TV Internet operations is the apparent “winner-take-all” characteristics of Internet video websites. As YouTube has shown, viewers gravitate to the one site that has the most viewers and most programs, making it a risky strategy to “go it alone” on the Internet. The joint venture of Fox, NBC, and ABC in hulu.com seems to be overcoming this handicap in competing with YouTube, although the CBS choice to basically stick with TV.com is risky. Comcast and Time-Warner together control access to over a third of U.S. cable households, but we don’t know if that will be enough.

VII. Conclusions

Internet distribution of media is extremely efficient and has other great advantages. We know from experience in newspapers and music publishing in the U.S. that Internet technology can have very destructive effects on established media by threatening intellectual property control, and destroy existing business models, without necessarily creating very profitable new business models. The “old” TV industry in the U.S. faces some similar dark clouds, but it would be unwise to write them off just yet.

Appendix: Sources for Figure 2

Newspaper: *Newspaper Association of America*, Business Analysis and Research, ‘Advertising Expenditure’, *Newspaper Association of America*, ‘Circulation Expenditures, Trends & Numbers’;
Broadcast TV: *Television Bureau of Advertising*, ‘Historical media advertising revenue’;
Cable TV: *SNL Kagan*, *National Cable and Telecommunications Association*, ‘Cable Advertising Revenue 1985 - 2008’; Multichannel Trends: History of Cable Pay TV Revenues, communications & Media & Entertainment - Industry News;
DBS: *SNL Kagan*, *Cable Program Investor*, Oct, 2008 p.7; *FCC*, Office of Plans and Policy, Working paper series, ‘Broadcast Television: Survivor in a sea of competition,’ September 2002, p. 6, Table 2: End-User Expenditures on Various Video Media 1990-2000, *DirectTV & DISH Network*, Annual Reports (2006&2007)
Magazine: *Magazine Publisher of America*, ‘Magazine Rate Card Reported Revenue and Ad Pages for PIB Measured Magazines’; Historical Subscriptions/single Copy Sales, Consumer Marketing;
Radio: *Television Bureau of Advertising*, ‘Historical media advertising revenue’; *Radio Advertising Bureau*, ‘Radio Revenue Trends’;
Music publishing: *Recording Industry Association of America*, ‘Year End U.S. Manufacturers’ Unit Shipments and Value Chart, Facts & Figures, Key Statistics’
Theater: *SNL Kagan*, *Motion Picture Investor*, February 15, 2008, January 28, 2009, p. 4, ‘10-Year Box Office Statistics, 2009’, *Motion Picture Investor*, April 30, 2009, p. 9, ‘Exhibition Market Projections, 2009-2018’; *MPAA* Economic Review, ‘US Box Office’, p4;
DVD: *SNL Kagan*, *Motion Picture Investor*, February 28, 2008, p.5, ‘U.S. Retail Home Video Projections, 1998-2007’, *Motion Picture Investor*, April 30, 2009, p. 4, p.6 ‘U.S. Home Video Retail Industry, 1999-2008’;
Internet: *Internet Advertising Bureau*, ‘Internet Advertising Revenue Report,’ Internet Content Revenues, ‘Fundamental Shifts in the US Media and Advertising Industry’, p.21, *Online Publishers Association*, ‘Online Paid Content - US market spending report,’ Mar 2006

References

- Barlas, Pete, "Google Says Video Ads On A Roll", *Investor's Business Daily*, July 17, 2009, <http://www.thefreelibrary.com/Google+Says+Video+Ads+On+A+Roll-a01611934509>
- Carey, Pete, "Local TV stations hit hard by ad declines," *San Jose Mercury News*, June 5, 2009, http://www.mercurynews.com/ci_12424461?IADID=Search-www.mercurynews.com-www.mercurynews.com, accessed August 3, 2009
- Collis, David J., Olson, Peter W. and Furey, Mary (2009), *The Newspaper Industry in Crisis*, HBS Case No. 709-463; *Harvard Business School Strategy Unit*.
- Deagon, Brian, "Free on Internet blurs pay-TV picture," *Investor's Business Daily*, February 25, 2009, <http://www.blinkx.com/article/free-tv-internet-blurs-pay-tv-picture~961>
- DirectTV*, 2006, Annual Report. El Segundo, 2006, *DirectTV*, 2006
- Jessell, Harry A., "Memo To The FCC's New Chairman," *TVNewsCheck*, Jul 24 2009, 1:12 PM ET, <http://www.tvnewscheck.com/articles/2009/07/24/daily.5/>, accessed August 3, 2009
- Kirchhoff, S. M. (2009), *The U.S. newspaper industry in transition*. Washington, DC: *Congressional Research Service*.
- Liebowitz, Stanley J. (2006), File sharing: creative destruction or just plain destruction? *Journal of Law and Economics*, vol. XLIX, p. 1-28.
- Media Trends, 2008 Edition. *SNL Kagan*, 2008
- Newspaper Association of America*, "Advertising Expenditures," *Newspaper Association of America Website*. <http://www.naa.org/TrendsandNumbers/Advertising-Expenditures.aspx>
- TV Dimensions 2009, 27th Edition. *Media Dynamics, Inc.*, 2009
- Waldfoegel, Joel (2009), Lost on the Web: does web distribution stimulate or depress television viewing?, *Information Economics and Policy*, p. 158-168
- Waterman & Han (2009), *The Economic Effects of Digital Transition on Television Program Supply*, forthcoming to 'the 37th Research Conference on Communication, Information and Internet Policy, September 25-27, 2009.
- Yao, Dennis A., Francisco Quiero, and Julia Rozovsky (2008), *CBS and Online Video*, *Harvard Business School Case 709-447*.