

Chapter 3

“Over the Top:” Has Technological Change Radically Altered the Prospects for Traditional Media?

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In the last few years, consumers have found it increasingly easy to access content through the internet that they would previously have obtained from broadcasters, through cable television or satellite television, or on CDs, DVDs, and printed materials. In addition, they have access to a wide variety of user-generated content and social-networking sites to occupy time that once might have been devoted to traditional media. Despite these dramatic changes in access to media, however, most people still obtain much of their entertainment and information from rather traditional sources, such as cable and broadcast television networks, newspapers, magazines, or their online affiliates. But the owners of these media are now justifiably worried that this traditional environment is about to be disrupted, perhaps in a dramatic fashion.

Given the widespread diffusion of high-speed broadband internet services through both fixed-wire and wireless networks, consumers can now bypass conventional distribution channels for receiving content—even video content. Thus, the internet poses a threat not only to media companies but to the traditional video distributors as well. In addition, copyright owners obviously fear that such bypass creates the opportunity to engage in “piracy”—the avoidance of paying for the copyrighted material—but they are also concerned that a change in distribution channels could redound to their disadvantage, as consumers narrowly target their choices of entertainment and information and move away from traditional media products.

The diffusion of broadband services has also stimulated the growth of new media, such as blogs, social-networking sites, or messaging sites that allow consumers to exchange information, photos, video clips, and sundry other matter. These new media are of recent origin, but they may have begun to compete strongly with conventional media for the consumer’s limited time, thereby posing

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a different threat to established media companies—namely “going around” their products rather than obtaining these products for a fee “over the top” of conventional distribution channels or even illicitly through piracy over the internet.

This paper addresses the impacts of these changes on the participants in the traditional media sector—firms that produce and distribute audio, video, and print. Recent trends in consumer expenditures on electronic equipment and media are reviewed. Empirical evidence on how changes in equipment and access to media have affected consumers’ management of their time is studied. Finally, the effects of all of these changes on the economic prospects of a variety of firms engaged in traditional communications and media are examined. While the market participants may currently recognize the threats posed to traditional media companies, the disruptions have been relatively modest thus far and have had little apparent effect on the financial market’s assessment of the future of media companies.

3.1 Consumer Expenditures on Electronic Equipment and Media

In their seminal study of consumer demand, Houthakker and Taylor (1966, 2010) stressed the importance of dynamic considerations in empirical estimates of consumer expenditures. They demonstrated the importance of psychological habit formation in driving consumer expenditures on everything from food to professional services. An important issue in their study was the rate at which the “stock” of each category of consumption depreciates. Given the recent rate of technological change, particularly in the dissemination of information, the depreciation rates on many categories of consumer expenditure may have accelerated markedly. This is particularly likely for consumer electronics and complementary products, such as software and media, as new devices and technologies replace old ones at a staggering rate. On the other hand, if the improved devices are simply used to access much of the same material more conveniently, rapidly, or with higher quality results, the expenditures on complementary media may be much more stable, *that is*, subject to a lower depreciation rate.

3.2 Consumer Expenditures

The cellular telephone was introduced to consumers in 1983, just after the introduction of the desktop personal computer. Both products are still purchased by consumers, but no one would compare their current versions with those introduced in the early 1980s. Along the way, cable television blossomed after being

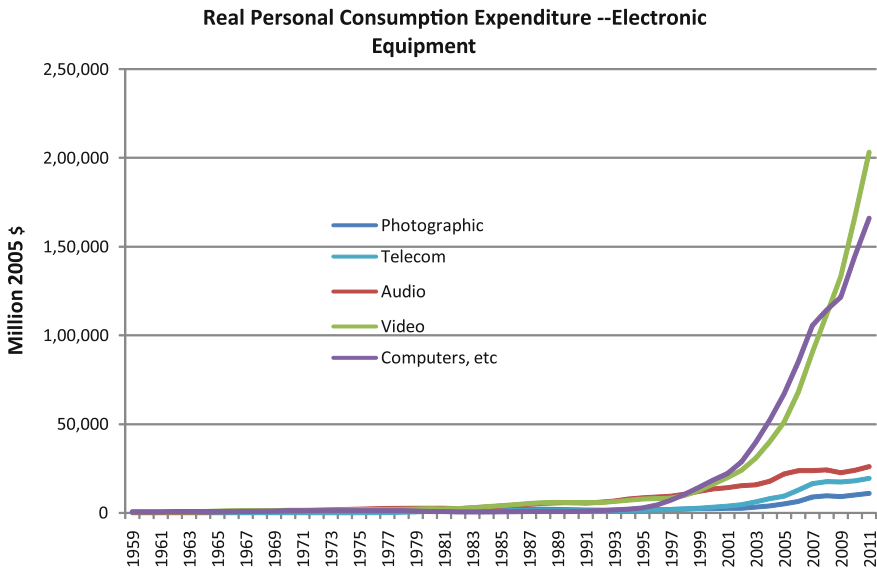


Fig. 3.1 Real personal consumption expenditure-electronic equipment. *Source* BEA

deregulated successively in 1979 and 1986,¹ and the commercial internet emerged by 1994 as a major communications medium for households and businesses. The widespread use of the internet allowed consumers to share music files, often over peer-to-peer services that avoided copyright payments, to the detriment of compact disks (CDs) music sales. Soon thereafter, much higher speed internet connectivity began to be deployed, and the speed of internet connections through fixed and mobile devices has continued to increase ever since. This increase in speed has led to the development of much more data-intensive video services that can be accessed over a variety of devices, including desktop computers, digital video recorders (DVRs), and mobile devices—“smart” cell phones, iPods, laptops, and the new computer tablets.

3.2.1 Equipment

It is difficult to capture the stunning development of consumer electronics technology through simple counts of each type of device or annual sales revenues because succeeding generations of each device—personal computers, laptop computers, cell phones, etc.—have provided dramatic improvements in the amount of

¹ See Crandall and Furchtgott-Roth (1996) for estimates of the consumer benefits of cable television deregulation.

information that can be processed and the speed with which it is made available to the consumer. However, a simple graphic can help. The Bureau of Economic Analysis (BEA) estimates nominal and real personal consumer expenditures (PCE) by product category. Their estimates of annual *real* consumption expenditures on various type of electronic equipment are shown in Fig. 3.1. Clearly, real consumer expenditures on computers and related products began to soar in the early 1990s, but, more surprisingly, real expenditures on video equipment showed a similar, meteoric rise beginning in the late 1990s. Both series increased approximately sevenfold between 2000 and 2010, while real spending on telecom equipment, including cell phones, increased “only” slightly more than 300 % in the same period,² and real spending on audio equipment rose by just 120 %.

The reason for the explosive growth in real consumer expenditures on these types of equipment is obvious: rapid technical change led to sharp reductions in prices as captured in the PCE deflators for each category. Nominal spending on video equipment actually increased only about 50 % between 2000 and 2010, and nominal spending on telecommunications equipment rose by slightly more than 100 %. The PCE deflators for video and computer equipment fell by more than 80 % in this short period, reflecting the rapid changes in television and computer screens, continuing improvements in processor speeds, and the increasing sophistication of a variety of devices such as digital video recorders, hard drives, and even printers. These improvements led to rapid obsolescence of equipment bought in the 1990s or even the early 2000s, inducing consumers to replace their outdated equipment and enjoy the new functionalities of the replacements.

3.2.2 Media

Some electronic devices cannot be used or fully enjoyed without access to various media. Personal audio equipment requires access to recorded music or to events broadcast over radio stations or satellites. The evolution of recorded music from vinyl records to cassette tapes to compact disks greatly facilitated the distribution of such music and arguably facilitated an improvement in the consumer’s listening experience. In recent years, much of the recorded music played over digital audio equipment has been downloaded over the internet, often without any compensation paid to the owner of the copyrighted music or the performers.

A similar transformation has occurred in video media. Prior to the development of the video cassette recorder in the late 1970s, most video was distributed to households through off-air broadcasts or through coaxial cable. Rapid improvements in digital technology led to the introduction of DVDs around 1997 and more recently (in 2006) to the introduction of high-definition DVDs and Blu-ray disks.

² Some telecommunications equipment PCE is recorded in telecommunications services because of the handset subsidies offered by carriers.

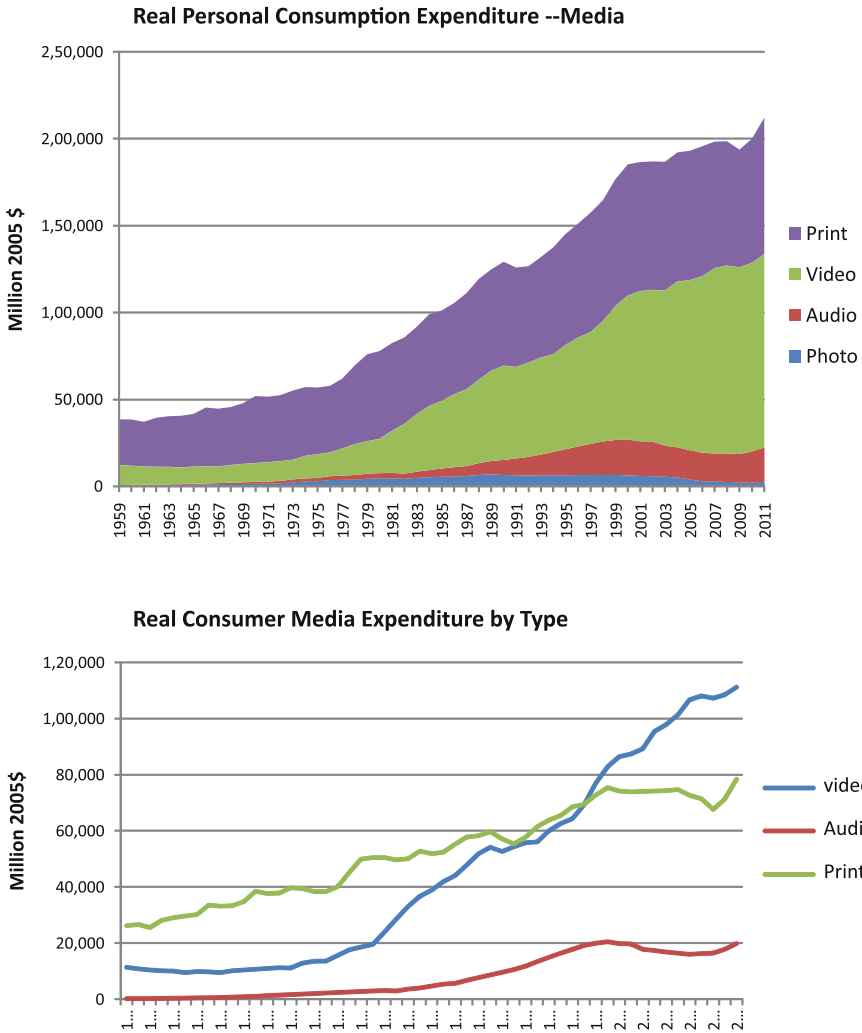


Fig. 3.2 Real personal consumption expenditure-media. Source: BEA

As broadband internet speeds increased, consumers also began to download video over the internet, including full-length movies, through services such as Netflix.

Finally, the development of the digital camera and extremely inexpensive storage capacity has essentially obliterated the photographic processing sector. Since 1989, real consumer spending on photographic processing and finishing has declined by more than 60 %.

It comes as no surprise that consumer expenditures on video media, including video delivered over cable television, have soared as the new equipment has dramatically improved the home-viewing experience. As Fig. 3.2 shows,

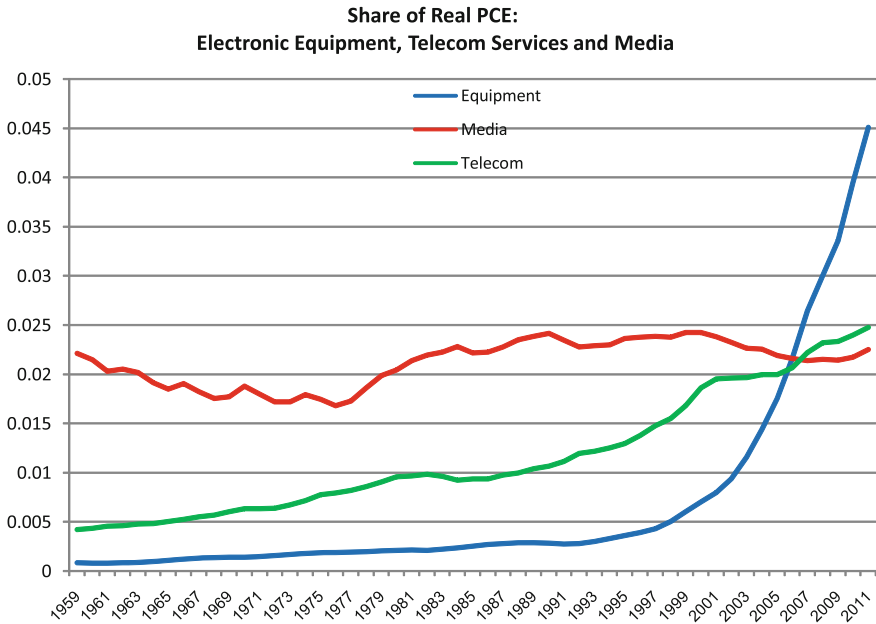


Fig. 3.3 Share of real PCE: electronic equipment, telecom services, and media. *Source* BEA

consumer expenditures on video continued to increase through 2008 while audio expenditures have flat-lined since the late 1990s.

Note, however, that real spending on video media has slowed dramatically since 2008 in the wake of sharply lower economic growth. Indeed, total real personal consumption grew only 0.3 % between 2007 and 2010. At the same time, copyright owners have begun to worry that higher and higher broadband speeds are facilitating much more video streaming and, potentially, video piracy. Whether piracy or the recent recession is to blame, DVD rentals and purchases declined by more than 15 % in nominal dollars between 2007 and 2010.³

The flattening out of spending on audio media occurred much earlier. As Fig. 3.2 shows, the growth in real PCE on audio essentially stopped between 1999 and 2005. This abrupt change in the trajectory of consumer spending on audio media occurred as broadband was beginning to spread rapidly and just before the iPod was introduced. More than 200 million iPods were sold in less than seven years as virtually everyone under the age of 50 began to use this device to listen to music. Despite this successful innovation, there was no rebound in audio media PCE until 2006; the likely culprit is music piracy over peer-to-peer networks on

³ It is not clear whether streaming revenues for Netflix are included in this category by BEA.

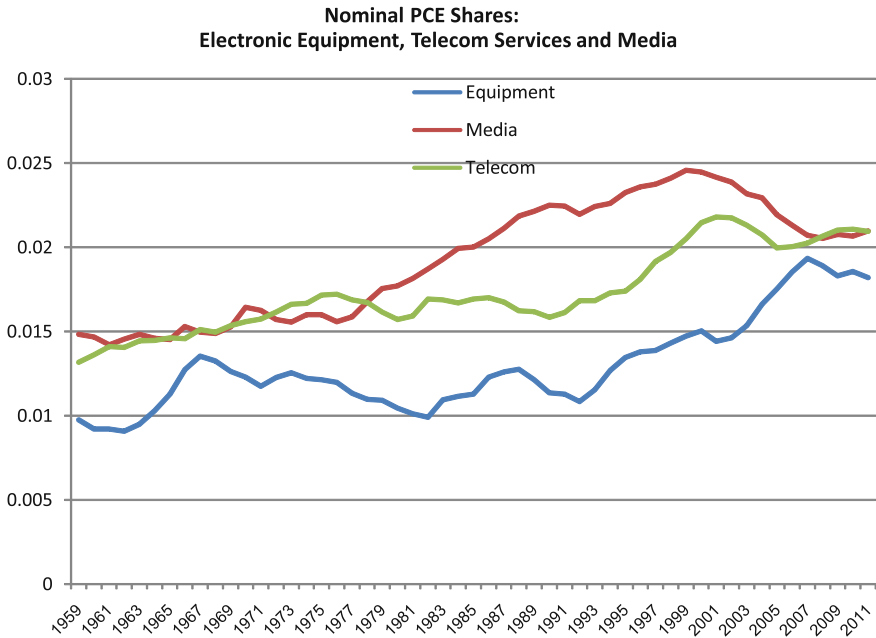


Fig. 3.4 Nominal PCE shares: electronic equipment, telecom services, and media. *Source* BEA

the internet. Liebowitz (2008) Surprisingly, growth resumed in 2006, as real audio PCE stabilized in 2009 and then soared by 9 % in 2010.

Despite the continuing growth in PCE on video media (at least, through 2008), it is clear that real spending on equipment has soared relative to spending on media (see Fig. 3.3). Since 1995, real spending on media has also lagged real expenditures on telecom services. Of course, much of this startling divergence has been due to the incredible decline in the price of video and computer equipment. If one focuses on *nominal* spending shares, the pattern—shown in Fig. 3.4—is decidedly different.

The share of nominal PCE devoted to spending on media has declined rather steadily since 2001, perhaps an ominous portent for the large, traditional media companies, but the share of nominal spending on equipment continued to rise until the recent recession. Surprisingly, nominal spending on telecom services has risen by more than spending on electronic equipment or media in the last 20 years. In part, this is due to the fact that a substantial share of mobile phone expenditures are buried in the PCE category of telecommunications spending because wireless companies subsidize handset purchases. The similarity in the real and nominal trends in telecommunications spending since 1991, as shown in Figs. 3.3 and 3.4, reflects the fact that the BEA personal consumption deflator for telecommunications services is virtually unchanged since 1991, surely a strange result given the

sharp reduction in the prices of cellular service and the substantial improvement in landline broadband speeds in recent years.

3.3 Consumer Adaptation to New Media Opportunities

At this juncture, it would be difficult to estimate the effects of the new distribution options presented by the internet on consumer allocations of time or spending. It would certainly require detailed household data on the amount of time or income spent listening, watching or reading various types of content delivered over traditional channels or delivered over the internet, principally by “streaming” content, the prices paid (if any) for such content, and the consumer’s own transformation of this content. Because some or perhaps much of this activity may involve copyright infringement, such data would be difficult to obtain at best.⁴ This paper simply sketches the various possibilities of shifts in media consumption and ask if firm, industry, or equity-market data support the existence of major changes at this time.

3.4 The Internet’s Contribution to Changing Patterns of Consumer Use of Media

The changes in consumer behavior induced by the recent wave of technological changes that are likely to have a major impact on current media companies and downstream distributors take the following forms:

Consumers use the internet to be more selective in targeting the information or entertainment content that they read, watch, or listen to, thereby perhaps reducing their use of traditional media. This is often described as going “over the top” to access content that had been delivered through traditional distribution channels. An example would be targeted streaming of video content through Netflix or Hulu, which may induce some consumers to drop their HBO or Showtime subscriptions or even to cancel their cable/satellite subscriptions altogether.

Consumers shift from reading, listening, and viewing traditional media content to developing their own content or otherwise interacting with others through various websites, blogs, tweets, and homemade videos that substitute for movies, CDs, and traditional television programming.

Consumers find ways to use the internet to obtain copyrighted printed, audio and video material without paying copyright fees, i.e., through piracy.⁵

⁴ For a first step in this direction, see Banerjee et al. (2011).

⁵ See Oberholzer-Gee and Strumpf (2007) and Liebowitz (2008) for studies of audio file sharing that reach different conclusions.

3.5 Going “Over the Top”

Using the internet for targeted purchases of media products is hardly new. Consumers have been able to use the internet to bypass newspapers for selected news articles and “want ads” for many years. As a result, most newspapers have had to grapple with the choice between offering their product over the internet to subscribers for a prescribed fee or simply providing all or part of it for free, using on-line advertising to defray its cost. Similarly, music record companies once faced a choice of offering their products over the internet, through such entities as iTunes, emusic.com, Amazon MP3, or mp3.com, or through other distribution channels, but today virtually all companies attempt to do both.

Most attention is now focused on video content. As broadband speeds steadily rise, consumers can increasingly view almost any video content on their traditional television receivers, their desktop computers, or a variety of mobile devices. Traditional video distributors, such as cable television companies and broadcast satellite operators, have long had the option of offering arrays of channels for fixed monthly fees, “a la carte” channels of specialized content, or motion pictures and various live events on a pay-per-view basis. But now consumers have the option of using broadband internet connections to access individual motion pictures or television series episodes through such entities as Netflix or Hulu. As these entities gain subscribers, the cable, satellite, and telecom video distributors are forced to respond with competitive pay-per-view or internet streaming services.

Thus far, most over-the-top video involves content that was originally produced for delivery through motion picture theaters, broadcast television, or cable television/satellite services. Entities, such as Google, Netflix, Apple, or Yahoo!, will attempt to bypass the traditional distributors altogether and negotiate directly for video content for delivery to consumers over the internet; indeed, this has already begun. Alternatively, the large media companies, say Disney or NewsCorp, could develop their own internet-based delivery services.

3.5.1 *User-Generated Content*

The widespread availability of high-speed internet connections has stimulated the development of user-generated video content (UGC) over sites such as YouTube and Facebook. Most of this content is not comparable with professionally produced video entertainment, but it is a substitute for the more polished video productions because it competes for the consumer’s limited leisure time. But, as Arewa (2010) explains, it could also be a complement to this more professional material as users download video clips from copyrighted material to include in UGC that they then post on a variety of internet sites. This user-generated content may actually enhance the value of the copyrighted material from which it is extracted.⁶

⁶ Liebowitz (2008) makes a related point in his analysis of online music downloads.

3.5.2 Piracy

Finally, there is the issue that has occupied copyright owners for most of the last decade—online piracy. This issue has been most acute for the audio-recording industry, which has witnessed a rather severe decline since 1999. There are conflicting studies on whether this decline is mostly related to copyright infringing uses of peer-to-peer sites or if it is simply a reflection of new products, such as DVDs, replacing CDs.⁷ Piracy through illegal copying of DVDs had been a major issue for motion picture companies even before the availability of broadband internet connections allowed it to shift to online streaming.

A recent study undertaken for a major media company, NBC/Universal, concluded that nearly one-fourth of all internet traffic involves copyright infringement.⁸ However, even this study concluded that only 1.4 % of internet use involves infringing use of *video* material.

3.6 The Changing Allocation of Consumers' Time

Given the rapid changes in the electronic equipment purchased by consumers, one might expect to find that consumers have made major changes in their daily lives to adjust to the opportunities that this new equipment provides. There is a widespread perception that many are reducing their use of traditional media as they increase the time they spend accessing the internet through laptops or mobile devices, including the new tablets. Indeed, in a recent speech, FCC Chairman Julius Genachowski offered the following startling observation:

An average American now spends more of their (sic.) free time online than they do watching TV.⁹

If true, this would indeed suggest that traditional cable, satellite, and broadcast television has declined remarkably, but the available data do not support Chairman Genachowski—at least, not yet.

Bruce Owen (1999) addressed the question of whether the internet then posed a threat to conventional television. He concluded that it did not for two reasons. First, the technology of that era made it unlikely that video streaming over the internet could be cost competitive with cable television and broadcasting. Owen noted the limitations of the copper-wire and coaxial cable networks of the time, but he allowed that technology could change sufficiently to ease this constraint. The

⁷ Oberholzer-Gee and Strumpf (2007) and Liebowitz (2008).

⁸ Envisional Ltd. (2011).

⁹ Speech given at the National Association of Broadcasting Convention, Las Vegas, NV, April 11, 2011, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0412/DOC-305708A1.pdf.

Table 3.1 Average hours per week spent watching TV, using the internet, and watching videos on mobile phones by age

Age	18–24	25–34	35–49	50–64	65+
Traditional TV	26.5	30.5	36.4	44.9	49.3
Time-shifted TV	1.5	3.2	3.2	2.8	1.7
Using internet (At home and work)	5.5	8.5	8.5	7.3	3.9
Video on internet	0.8	1.0	0.6	0.4	0.2
Video on mobile phones (per mobile subscriber)	0.25	0.2	0.1	0.03	<0.02

Source AC Nielsen (2011)

second reason that Owen offered to support his pessimistic view is that television viewing is a “passive” activity. Couch potatoes do not want to have to struggle to receive their entertainment over the internet; they prefer to select passively from a menu offered by traditional video distributors. Of course, he reached these conclusions before Facebook or even Netflix and surely before 50 Mbs broadband speeds.

More than a decade later, the available data appear to support Owen’s conjecture—Americans still spend far more time watching traditional TV than using the internet. A Nielsen survey of households in the first quarter of 2011 found that the average adult spends about five times as much time watching TV as using the internet.¹⁰ Table 3.1 provides the details by age category. Note that video over the internet and video over mobile phones constitute a small share of total video viewing, but this share is rising rapidly. Nielsen reports that online video viewing rose 34 % between the first quarter of 2010 and the first quarter of 2011, while the number of persons accessing video over smartphones rose by 41 % in the same period.

In the first quarter of 2011, 288 million people (age 2+) watched TV in the home, 142 million watched at least some videos over the internet, but only 29 million watched video over a mobile phone. While watching video over non-traditional sources is still dominated by watching traditional TV, new forms of video access is increasing rapidly. One research firm, SNL Kagan, estimates that 2.5 million households had substituted “over-the-top” video over internet for their pay—cable, satellite, or telco-provided—television service and predicts that this total will rise to 8.5 million households by the end of 2015.¹¹

The Nielsen data on internet use would appear to be conservative if one believes a variety of other sources, particularly those providing social-media services. For instance, Facebook claimed 700 million active users in 2011, of whom 225 million were in the United States.¹² It also claimed that the average

¹⁰ The latest (2009) BLS Time Use Survey finds that the average adult (aged 15 and over) watches television only 2.82 h per day or only 20 h per week.

¹¹ “Online Video Will Replace Pay TV in 4.5 Million Homes by Year-End,” *The Hollywood Reporter*, July 20, 2011.

¹² These data are found at www.facebook.com/press/info.php?statistics.

user spends more than 15.5 h per month on the Facebook site. If this is an accurate representation for U.S. users, it suggests that the average adult spent perhaps 40 % of his or her time on the internet (as measured by Nielsen) on the Facebook site, surely a remarkable share, if true.

The second most popular social-media site, Twitter, claims similarly staggering usage. Twitter began in March 2006. Five years later, it claimed that the number of “tweets” sent over its site in a single day was 170 million.¹³ Apparently, only about 7 % of Americans are considered active users of Twitter, or about 21 million overall. Nevertheless, Twitter claimed that an average of 460,000 new users join every day. Another popular site, YouTube, claimed 490 million users worldwide. These users spend an average of nearly 6 h per month on the site, viewing an average of 188 pages per month.

3.7 The Effects on Industry Participants

What has been the effect of the changes in consumers’ use of electronic equipment and media access traditional on the firms participating in the media/communications industries? Specifically, have these shifts in consumer behavior begun to erode the values of cable television, satellite, and broadcasting companies or traditional media producers—those producing motion pictures, television programming and music?¹⁴ In this section, the revenue growth and stock-market performance of telecom, cable/satellite, and media firms are examined to see how they have fared as the internet has fostered the development of new distribution channels for traditional and new media. It focuses on whether the financial markets have begun to reduce traditional media-company valuations as these changes unfold.

3.7.1 *Industry Revenue and Output*

The Census Bureau collects annual data on revenues and costs for firms in service industries. These data have been reported for each of the media and communications industries, based on the North American Industry Classification System (NAICS) classifications, for 1998–2010 in the Service Annual Survey.¹⁵ The revenue data are plotted in Fig. 3.5 for the various media industry categories and

¹³ These data are found on <http://blog.tweeter.com/2011/03/numbers.html>.

¹⁴ Consumer electronics manufacturing is not addressed in this paper because the focus is on the shifting use of electronic devices and its impact on media companies and distributors. Obviously, consumer electronics companies have generally thrived, particularly those—such as Apple—who have led in developing audio players, smart phones, laptops, and the new tablets.

¹⁵ Available at <http://www.census.gov/services/>.

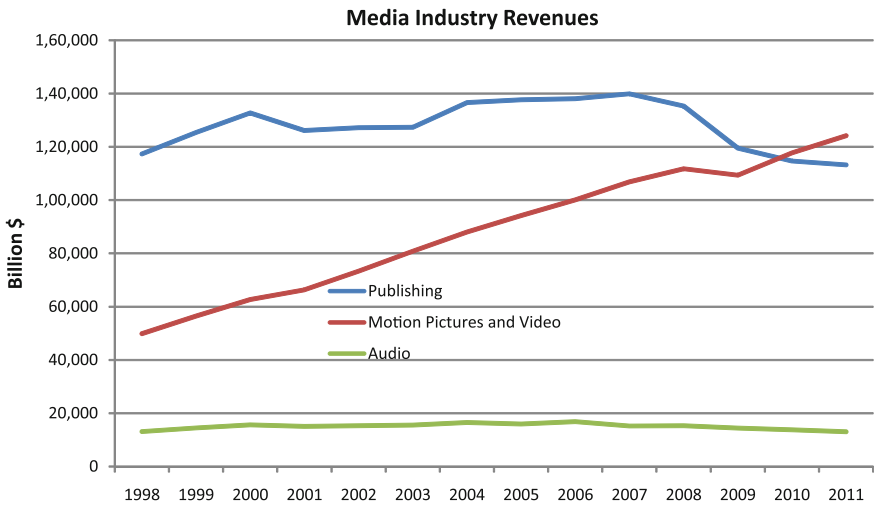


Fig. 3.5 Media industry revenues. Source U.S. Census Bureau

in Fig. 3.6 for motion pictures and other video production as well as cable/satellite television and broadcasting.

Several trends are immediately obvious. First, nominal audio production and distribution revenues (record-company revenues) have not changed since 2000, indicating that, not surprisingly, real record company revenues have declined steadily over this period. On the other hand, video and motion picture revenues grew at a remarkably steady rate from 1998 to 2008 before declining during the recent recession. During this period, these video/motion picture company revenues grew by 72 % while the price level, as measured by the Consumer Price Index (CPI), rose by just 32 %. In 2010-2011, revenues rebounded substantially from their depressed 2009 levels, suggesting that the 2009 decline was temporary and not due to substitution of other products over the internet or even a sudden acceleration of piracy.

By contrast, publishing revenues grew slowly from 1998 through 2005 and have declined precipitously since 2007. Newspaper, book, and magazine publishers have been particularly hard hit and have not recovered their 2008–2009 losses. Since then they are likely in secular decline.

Figure 3.6 once again shows the trend in motion picture/video production revenues, but this time they are shown with the growth in broadcasting and cable/satellite company revenues. Note that cable/satellite firm revenues appear to have grown even more rapidly than motion picture/video producer revenues, but broadcasting revenues have clearly stagnated as viewers and listeners have shifted to satellite, cable, and a variety of devices connected to the internet. Cable television’s revenue growth is undoubtedly the result of the increasing importance of broadband and telephone revenues in cable company revenues, as they began to offer “triple play” packages to their subscribers.

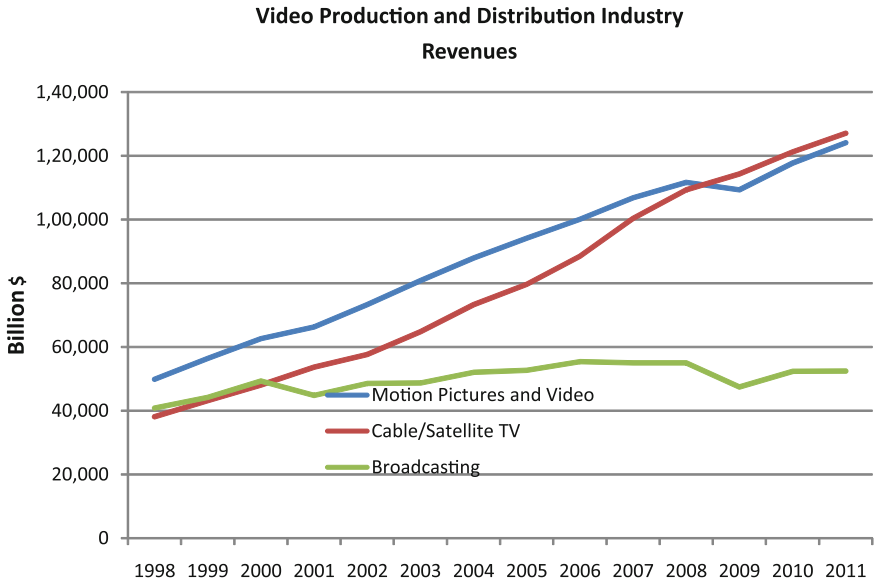


Fig. 3.6 Video production and distribution industry revenues. *Source* U.S. Census Bureau

In short, the Census Bureau's revenue data reveal that motion picture/video companies' revenues continued to grow steadily until the recent recession; record companies have seen little nominal revenue growth over the last decade; and publishers of books, magazines, and newspapers have suffered a precipitous decline since 2007. These data, however, suffer from the possibility of double counting since one company in the production/distribution chain can sell a substantial share of its output through others who are in the same three-digit NAICS category. If the degree of vertical integration changes over time, this change can affect the tabulation of revenues even though overall final sales do not change. To address this possibility, it is useful to examine data on industry value added in these sectors.

The Commerce Department's Bureau of Economic Analysis (BEA) estimates the value added originating in the Information sector which comprises Publishing (including software), Telecommunications and Broadcasting, Motion Pictures and Sound Recording, and Information and Data Processing Services.¹⁶ Figure 3.7 shows the growth of nominal value added in Motion Pictures and Sound Recording and Broadcasting and Telecommunications relative to total GDP.

The share of GDP accounted for by broadcasting (including cable/satellite) and telecommunications and motion picture/sound recording has been remarkably stable. The slight decline in motion picture/audio revenues is likely due to the

¹⁶ The BEA data on publishing is ignored because print is combined with software in their value-added data.

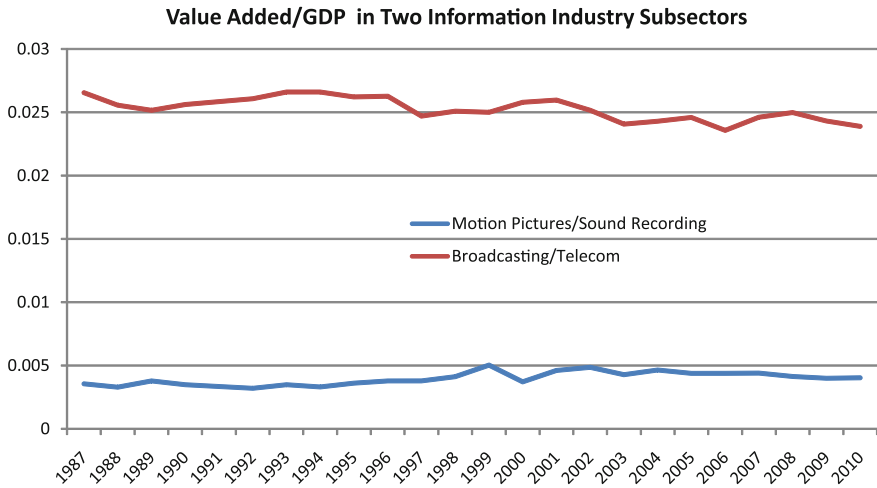


Fig. 3.7 Value Added/GDP In two information industry subsectors. *Source* BEA

relative decline in record-company sales, but it is impossible to separate motion pictures from audio value added in these data.¹⁷

From these data, one would not deduce that a major upheaval is occurring in the motion picture/video industries. The Census data, however, confirm the widespread impression that record companies and publishers of newspapers, books, and periodicals are in decline, with the latter declining sharply in the last three years.

3.7.2 Telecommunications and Cable TV firms

In the last decade, telecommunications carriers and cable television companies have begun to compete with one another in earnest. The telecom carriers have built fiber farther out in their networks—in some cases all the way to the subscriber—so as to be able to deliver video services. The cable companies, at a much lower incremental cost, have been able to offer voice services—VoIP. Combined with the steady expansion of high-powered satellite services, these trends have made the distribution of video, data, and voice far more competitive than it was in earlier decades.

Despite this substantial increase in competition, the carriers have done well. Table 3.2 provides recent market capitalization information for the major telecom and cable and satellite firms in the United States. The U.S. telecom companies shown derive an overwhelming share of their income from operations in the U.S.,

¹⁷ It is possible that this stability is an artifice, driven by BEA's estimation procedure between benchmarks.

Table 3.2 Market capitalization and equity betas for telecom and cable TV firms

Company	Market capitalization—8/31/2011 (Billion \$)	Equity β
<i>Telecom</i>	333	
AT&T	169	0.52
Verizon	102	0.53
Century Link	21	0.75
Sprint-Nextel	11	1.04
Frontier	7	0.76
Windstream	6	0.87
Metro PCS	4	0.52
U.S. Cellular	4	0.90
Level 3	3	1.36
Time Warner Telecom	3	1.33
GCI	0.4	0.96
Leap Wireless	0.7	1.32
Clearwire	0.8	1.33
Cincinnati Bell	0.7	1.47
Shenandoah Telecommunications	0.3	0.23
Alaska Communications	0.3	0.66
Fairpoint Communications	0.2	NA
<i>Cable/satellite</i>	140	
Comcast (Includes NBC)	59	1.08
Time Warner Cable	21	0.73
Cablevision	5	1.61
Charter	5	NA
Knology	0.5	1.68
DirecTV	32	0.87
Dish Network	11	1.44
Sirius/XM	7	2.32

Source www.finance.yahoo.com

and most have substantial investments in infrastructure and little invested in media (programming) despite their recent forays into video distribution. The two largest U.S. telecom companies account for about 80 % of the industry's market capitalization because they are the principal providers of both fixed-wire and mobile (wireless) telecommunications. Despite more than a decade of public policy designed to promote entry by new, fixed-wire competitors and years of regulatory strife surrounding this policy, only a few of these entrants remain. Competition in telecommunications is now focused on interplatform competition between the large telecom companies and the cable/satellite companies as well as from a number of independent wireless companies, such as Sprint/Nextel, Leap, and U.S. Cellular. Note that despite the threat of increased competition posed by the internet to traditional video distribution, the large telecom companies' equities continue to have low betas, suggesting that the markets have not yet perceived a major increase in the risk of holding these equities.

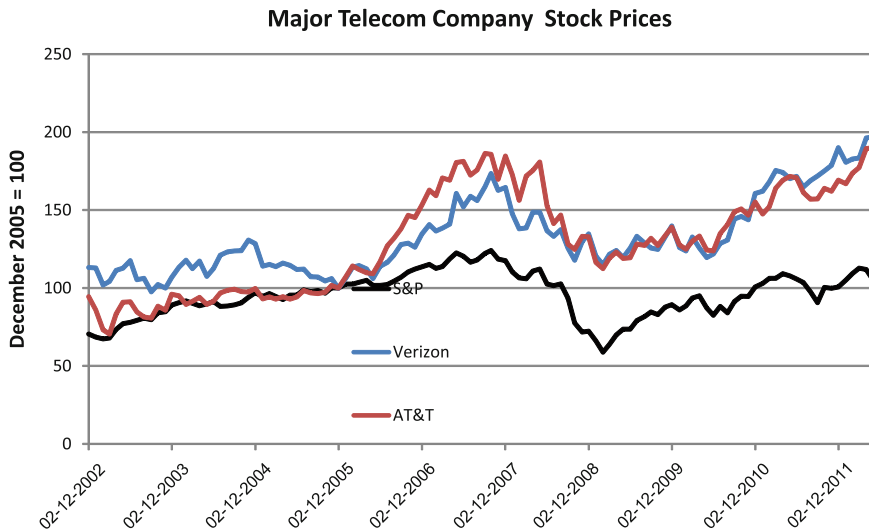


Fig. 3.8 Major telecom company stock prices. *Source* www.finance.yahoo.com

The cable-satellite companies, on the other hand, have a much lower total market capitalization even though they also have substantial infrastructure investments as well as investments in video programming.¹⁸ (The five cable companies shown in Table 3.2 account for approximately 70 % of the country’s subscribers.) Each of the national cable television companies now offers video, data (high-speed internet connections), and voice. The satellite providers are more specialized in video services, but they have grown substantially in recent years. Note that most of the cable/satellite firms’ equities are viewed as more risky than are the telecom companies’ equities, perhaps because of their investments in media content.¹⁹

In past few years, the major telecommunications companies—AT&T and Verizon—have enjoyed strong stock-market performance. As Fig. 3.8 shows, both of their common equities have substantially outperformed the S&P 500 since 2005 and even since 2001, the peak of the technology stock market bubble. Figure 3.9 shows that since 2005, two of the three major publicly listed cable companies’ equities have also slightly outperformed the S&P 500, (Time Warner Cable is the exception.) The most spectacular performer, however, has been DirecTV, a satellite company which has wooed a substantial number of subscribers from traditional cable television companies and derives little income from internet connections.

It is hardly surprising that telecom and cable television companies have performed well in the modern era of the internet. Neither group is now heavily regulated, and both have benefitted from the public’s seemingly insatiable demand for bandwidth as well as for voice and video services.

¹⁸ Comcast recently completed its acquisition of 51 % NBC/Universal for \$13.8 billion.

¹⁹ Cox Cable and MediaCom are not included because they are now privately-held companies.

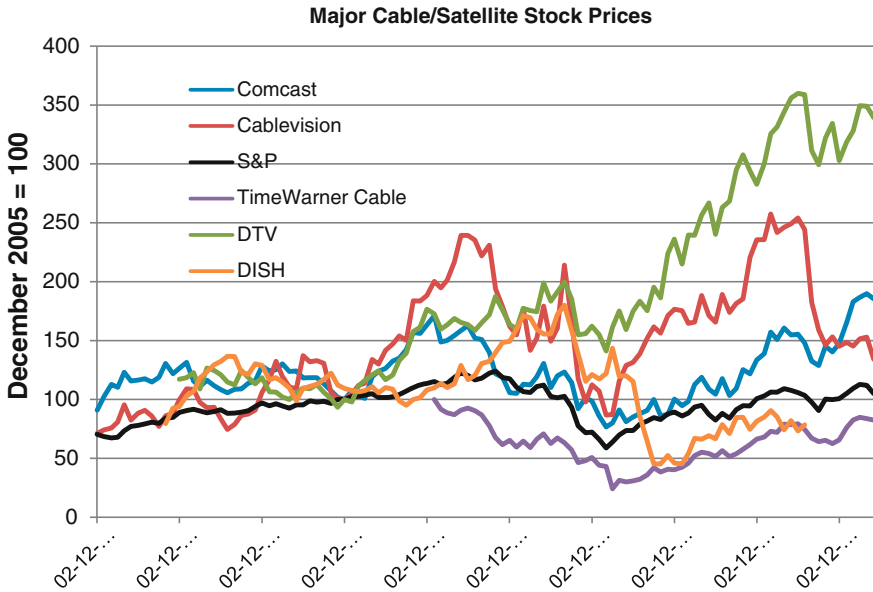


Fig. 3.9 Major cable/satellite company stock prices. Source www.finance.yahoo.com

The relatively strong performance of cable television and telecommunications equities undoubtedly reflects the fact that their fixed-wire and wireless services are needed to deliver the increasing amount of digital media to consumers, regardless of whether the content is obtained legally from traditional media companies, is the result of piracy, or derives from new media organizations.

3.7.3 The Media Companies

Far more relevant for this paper is the recent performance of the “media” industry, that is, those firms that supply video and audio content to distributors, including those that distribute over the internet. First, the “traditional” media which have supplied video and audio products to consumers through a variety of distribution channels for decades are examined. Then, the focus shifts to the new media.

3.7.4 Traditional Media

Table 3.3 lists the major U.S. media companies, including those that own the major broadcast networks, motion picture companies, and most of the major cable

Table 3.3 Market capitalization and equity betas for major traditional media companies

Company	Market capitalization 8/31/2011 (Billion \$)	Equity β
<i>Traditional media</i>	267	
Disney	63	1.24
News Corp	46	1.55
Time Warner	33	1.33
Viacom	33	1.10
NBC/Universal	30 (e)	N/A
CBS	17	2.40
Discovery	17	0.76
Liberty Interactive	10	2.56
Scripps	7	1.15
Liberty Starz Group	4	N/A
Washington Post	3	1.07
DreamWorks	2	1.11
New York Times	1	1.57
Lions Gate Entertainment	1	0.61
Tribune Company	0	NA
Media General	<0.1	2.89

Source www.finance.yahoo.com

channels. An estimate of the value of NBC/Universal, the owner of a major motion picture distributor and the NBC network and stations, which was recently purchased by Comcast, is included. Not included are the motion picture operations (Columbia Pictures) or record businesses of Sony Corporation because their value cannot be separate from the rest of Sony. Moreover, the other major record companies are not included because, given the decline in the music business, most of the other major record labels have been sold or otherwise transferred to companies other than the major media companies.²⁰

Note the substantial market value of these major media companies, even in the current environment. Most have relatively high equity betas, a reflection that they are considerably riskier than the telecom carriers and many cable companies. It is also notable that the value of the major newspaper companies—*Washington Post*, *New York Times*, and the Tribune Company—is low. (The most successful U.S. newspaper, the *Wall Street Journal*, is owned by News Corporation.)

The substantial market capitalization of the major media firms is obviously reflected in the movement of their equity prices. As Fig. 3.10 shows, all of the largest media companies except Time Warner have recently outperformed the overall equity market as measured by the S&P 500 Index. Prior to 2005, these companies' equities more closely tracked the overall market, but in the past few

²⁰ The major record labels have declined substantially. Sony retains the Sony-BMG label. Warner Music Group was sold to Access Industries for \$3.3 billion in 2011; Universal Music remains with Vivendi, a French company; and EMI was acquired by Citigroup in a prepackaged bankruptcy in 2011. Citigroup is now attempting to sell EMI for about \$4 billion.

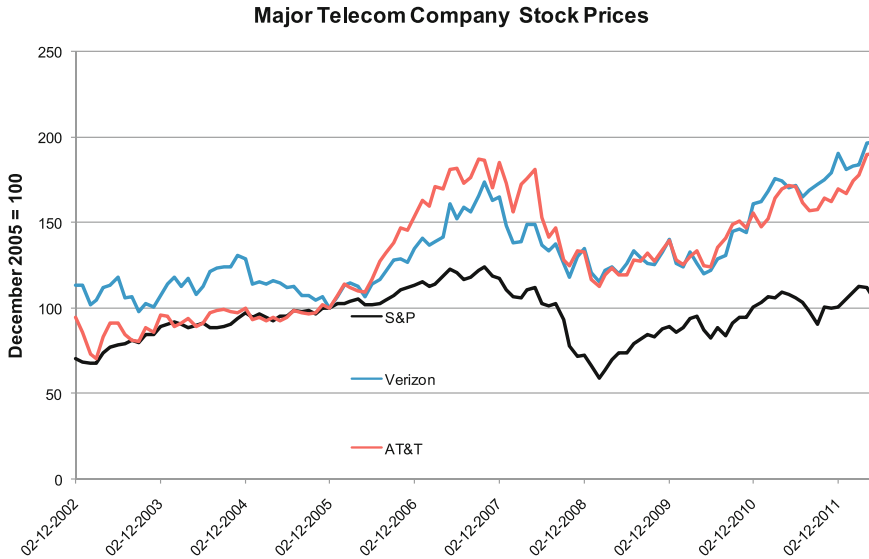


Fig. 3.10 Leading media company stock prices

years, several of these companies' equity prices have diverged substantially from the S&P 500 Index. Nevertheless, there is certainly no evidence that investors are abandoning these companies in favor of the new internet-based companies, such as Google, Facebook, or Twitter. This suggests that not only have these companies' revenues and profits not declined, but that the equity markets are not expecting such a decline in the foreseeable future.

Given that their stock prices have performed well, it should be no surprise that the major media companies' revenues have also held up rather well. Total revenues for Disney, News Corp., Time Warner, Viacom, CBS, Liberty Media, and NBC/Universal have tracked GDP for the past 10 years, totaling between 0.93 and 1.06 % of the nominal value of GDP. In the most recent year, 2010, these companies' revenues were equal to 1.04 % of GDP. These companies' revenues have grown by 59 % since 2001. Census data show that video and motion picture company revenues grew by 64 % in the same period. Thus, piracy, the development of new media, or the shift of advertising expenditures to nontraditional forms of internet advertising have not yet combined to reduce these companies' revenues relative to overall economic activity.²¹

Nor has there been a noticeable shift in the largest companies' sources of revenues. In 2001, Disney, NewsCorp. Time Warner, Viacom, and CBS derived 75 % of their revenues from video products; in 2010, they derived 76 % from

²¹ Three of the major media companies, Disney NewsCorp., and NBC/Universal own Hulu, a new media company that streams programming over the internet.

video.²² And it does not appear that these companies, with the exception of News Corp, have diversified outside the United States. Those reporting revenue data by geographical area continue to realize about 70–75 % of their revenues from North America in the latest year.

Of all the major media companies, only Time Warner has exhibited declining revenues over the last few years. This is an ironic result, given that Time Warner was merged into one of the most successful new internet companies, AOL, in January 2001. When the merger was announced in 2000, the antitrust authorities were concerned that AOL/Time Warner could dominate the broadband ISP market. After nearly a year's investigation, the Federal Trade Commission and AOL/Time Warner entered into a consent decree that required AOL to offer, its services over both cable modems and telco-based DSL connections. Within three years, Time Warner's total revenues (excluding Time Warner Cable) began to decline, largely because of AOL's declining revenues. Over the next five years, Time Warner's nominal revenues would decline by more than 25 %, while the other media giants' revenues rose by 27 %. In retrospect, it is now clear that Time Warner did not need AOL to deliver broadband services over its cable networks; AOL brought a large narrowband customer base, but most of these customers could easily migrate to either DSL or cable modem service.

3.7.5 *New Media*

The newer, largely internet-based media companies that are listed publicly are shown in Table 3.4. While the traditional media companies in Table 3.3 are largely focused on motion pictures, broadcasting, and cable television programming, many are beginning to pursue a variety of new media (internet) options. The companies listed in Table 3.4, however, are those whose origins are largely based on the internet. Some—Google, Yahoo, and AOL—are largely internet portals that rely heavily on advertising revenues from their search engines or other internet sites. Others—such as Amazon and eBay—rely heavily on online commerce while still others—Facebook, LinkedIn, eHarmony, and Twitter are best described as social-networking sites.²³ All rely heavily on advertising, draining potentially a large share of advertising revenues from the traditional media companies. One could even include Microsoft in Table 3.4 because of its substantial investment in a search engine, online gaming, Skype, etc., but it would be difficult to determine the share of its \$225 billion in market cap attributable to its new media businesses.

²² AOL is excluded from Time Warner. Because segment data is not available for Liberty Media and NBC/Universal for these years, they are excluded.

²³ Note that these data are for 8/31/2011, substantially before the initial public offering of Facebook stock in 2012.

Table 3.4 Market capitalization and equity betas of new internet-related companies

Company	Market capitalization (Billion \$)	Equity β
Google	175	0.91
Amazon.com	98	0.90
Facebook	75	Not traded
eBay	40	1.58
Yahoo!	17	0.83
Netflix	12	0.40
Zynga	10	Not traded
Twitter	8	Not traded
Linked-In	8	NA
Pandora	2	NA
IAC/Interactive Corp.	3	0.52
AOL	2	NA
eHarmony	0.5	Not traded
Zillow	0.4	Not traded
Linden Labs	0.2	Not traded

Source www.finance.yahoo.com

Note that these new internet-related companies' total market capitalization is even greater than the total market capitalization of the large traditional media companies shown in Table 3.3. This suggests that the equity markets are assuming that these companies can attract users, generate new media, and divert substantial advertising revenues from traditional media companies. Nevertheless, this expectation has not yet eroded the values of the traditional media companies, as we have seen.

3.8 Prospective Impacts of Internet-Connected TV Households

As broadband spreads to a large proportion of U.S. households, new commercial opportunities arise for delivering video content to consumers. The main impediment to such delivery lies in the household's television viewing architecture. I can view a large amount of internet-delivered video material on the screens of my desktop or laptop computer, but if I want to have a complete viewing experience, I need to connect the internet to my large-screen, high-definition television receiver. In fact, this is precisely what many households are now doing through game consoles or directly connected television receivers. A recent report from Morgan Stanley provides current data and forecasts on the share of these "connected households" (see Fig. 3.11).

Today, fewer than 25 % of broadband households—or fewer than 18 % of all households—have a direct connection from their television sets to the internet, but the share is likely to grow rapidly. As this share grows, new distribution patterns

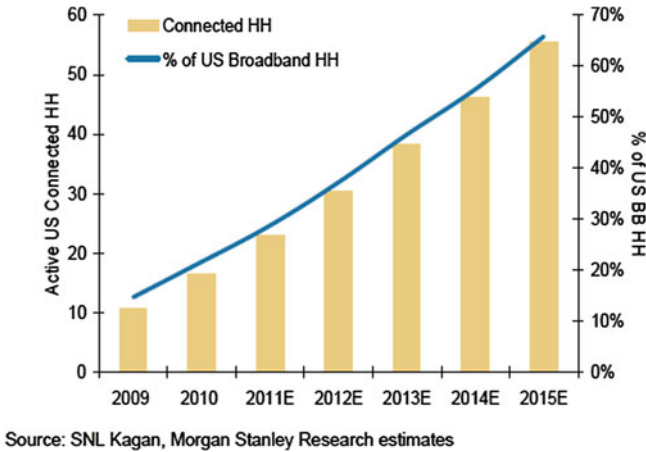


Fig. 3.11 Percentage of broadband homes with direct TV connection to the internet

are likely to arise. The number of potential distributors will increase, creating greater competition for content. But will these changes lead to a transformation of video distribution from a cable/satellite model of a variety of tiers of program channels (plus some *a la carte* pay-per-view options) to one that provides most programs on a pay-per-view basis? This, in turn, could reduce the reliance of the current video industry on advertising revenues, currently about 60 % of total revenues, to one much more reliant on subscription revenues. Whatever the outcome, absent an increase in video content piracy, the media companies are likely to gain at the expense of today’s major video distributors.

The shift from traditional television, delivered by cable, satellite, or (to a much lesser extent) broadcast stations to internet delivery through large-screen home television screens has its antecedents in the use of digital video recorders (DVRs). Households have used home video recorders—beginning with video cassette recorders—for years as devices to store or time-shift programming. The newer DVRs provide for much easier storage and time shifting, and they also facilitate the bypassing of commercial messages. Now, those interested in exploiting the use of internet delivery of video, such as Google, are seeking to replace or supplement these DVRs with new devices that facilitate streaming video content directly into large family television screens.²⁴

The effect of a shift to internet-connected television sets on distributors and media companies is difficult to predict. There are a number of possibilities. First, such a shift may allow consumers to bypass television advertising much more than they have thus far because of the limited spread of DVRs. This would obviously

²⁴ Google’s recent decision to buy Motorola Mobility is widely seen as an attempt to enter not only the production of smartphones, but also an attempt to use Motorola technology to develop the set-top boxes for its Google TV offering.

erode the value of advertiser-supported programming to distributors. Second, this shift may allow media content owners to offer their programming to subscribers on a direct fee basis, further reducing their reliance on advertising. Third, the internet connection will allow content viewers to interact with other sites as they view the programming, thereby increasing advertising opportunities through search engines, banner advertising, or other forms that are presented on the internet.

Clearly, the recent changes in the delivery of video media have been economically beneficial for the large media companies. Competition for programming between satellite companies, cable television companies, and now telecommunications carriers has increased these media companies' share of consumer expenditures on television subscriptions from 32 % in 2000 to 41 % in 2010, according to Morgan Stanley.²⁵ The shift of this programming to internet delivery will only add to such competition, thereby further improving the media companies' bargaining position.

The risk to traditional media that derives from directly connected television sets is that it erodes their share of the households' time because it permits viewers to search for alternative content, even viewer generated content. Moreover, any closer connection of households to the internet creates the threat of further erosion of conventional advertising on television, in print, or elsewhere in favor of internet advertising. internet advertising is now growing much more rapidly than advertising on all other media, but it still accounts for only about 10–15 % of all advertising.²⁶

At this juncture, the immediate threat posed to traditional media companies by streaming of video directly from the internet to households' television sets appears to be rather minimal. This fact is reflected in the large media companies' stock market performance, reviewed above. The threat to the video distributors—cable television, satellite, and telecom companies—may be a bit more severe. However, two of these groups—cable television and telecom companies—are still necessary for households to obtain the high-speed internet connections through which internet content is delivered. Whether the revenues from increasing demand for bandwidth to receive this programming offset any loss in revenues from these firms' traditional video services remains to be seen.²⁷

3.9 Conclusions

There can be little doubt that the diffusion of high-speed internet services and the remarkable advances in consumer electronics have combined to present a serious challenge for traditional media companies and their downstream distributors. Yet,

²⁵ Swinburne et al. (2011).

²⁶ See, for example, <http://www.businessinsider.com/chart-us-advertising-by-medium-2011-7>.

²⁷ Ultimately, these distributors could be bypassed by new wireless technologies that may be deployed to allow the delivery of the requisite data directly to households.

despite these changes, consumers continue to obtain their video entertainment through traditional channels, confirming the insight reflected in Houthakker and Taylor's theory of consumer demand.

On the other hand, there is no denying that the print media companies are in serious decline and that record companies are suffering from a decade of stagnation. As a result, the leading newspaper and recording companies have seen their market values decline to low levels.

But the traditional large motion picture and video media companies, such as Disney, CBS, and Viacom, continue to thrive, and the equity markets have not yet begun to mark them down in anticipation of any major changes in consumer viewing habits. It may be that even when most consumers have connected their large-screen television sets directly to the internet or, perhaps less likely, most of us begin watching video over wireless devices, these media companies will continue to provide most of consumers' viewing content with little loss of revenue.

What is perhaps most surprising, however, is that the traditional *video distribution* companies' equities have performed equally well in the face of this potential threat. It is possible, even likely, that they may lose programming revenues as subscribers shift to internet delivery of video, but the markets appear to reflect the fact that these companies will offset any revenue declines from revenues derived from the greater internet bandwidth demanded by consumers.

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