Chapter 9
Video on the Internet: The Content Question

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Abstract What is the effect of Internet distribution of digital video on content? Is there evidence that content will be different from what is available through other conduits or will it just be more of the same? Who will be producing it and who will be consuming it? How important will user-generated video content be? These are some of the questions addressed in this essay.

Introduction

The video content produced for transmission via the Internet and other digital television conduits is likely to be different from that produced for analog television. One key difference is that less than 50% of US households currently have access to digital TV services of some kind while almost all households have access to analog TV broadcasts. An even smaller percentage has a connection to the Internet that is fast enough for the delivery of broadcast-quality digital TV. Thus, audience for digital content is currently smaller and possibly more elite than for analog content. As a result, digital content tends to be a bit "edgier" than analog content. This difference will decline over time and especially with continued rollout of high-speed broadband services and transition to digital broadcasting. As more and more households get access to high-quality digital video, at least some of the newer, edgier content will survive only in market niches. Yet, it is likely that range and variety of content will be greater than it was before.

Why is this an important topic? We would like to know if new information and communications technologies are contributing positively to free speech and creative activity, because the latter is crucial to democracy. There has been much discussion of the role that analog television has played in enhancing or detracting from democracy. Some social scientists argue, for example, that analog television has had a negative impact because of the dependence of voters on TV news for coverage of election campaigns and because that coverage (especially of local elections) is not as good as it was when voters got their information primarily from print media like newspapers.[1] In addition some argue, that concentration of ownership of broadcast networks and limited competition in local TV markets reduces the

number of political viewpoints that voters can access.[2] New digital media has the potential to permit more voices in society to be heard. But are they realizing that potential?

Recent debates over digital transition revealed that less than 20% of US households now get TV signals delivered via terrestrial broadcasts. That means that more than 80% of households get TV via cable or satellite.[3] Cable and satellite are already competing with digital TV delivered by phone companies (see below for details).

Increased competition between telephone and cable companies for telephone, television, and high-speed Internet customers is a consequence of policies adopted during the 1990s by Congress, particularly the Telecommunications Act of 1996, and the Federal Communications Commission. Although the rollout of broadband Internet services in the United States has been slower than in at least a dozen other countries,[4] once it gathers momentum growing numbers of people are likely to be able to access digital TV content via conduits other than terrestrial broadcasts, cable, and satellite. These new digital TV audiences already seem to have developed habits different from those of analog TV viewers, and analysts are trying to guess which of those habits will persist. So the task at hand is to examine carefully what video content is currently available to audiences via the Internet and use that information to make informed guesses about near-term and mid-term future of digital TV content.

Frameworks for Analysis

Key to analysis is identifying the most important factors behind content strategies of content producers. One crucial factor is the potential size of the audience. Analog TV is aimed generally at large audiences, while much of pioneering digital TV content is aimed at small, specialized audiences. Some digital content, however, is for mass consumption; while some analog content is for niche markets, especially after the rise of multi-channel services like cable and satellite. Large audience video content can be supported by sponsorship or advertising; while small audience content may be distributed without charge with customized advertising or provided on a download-to-own or pay-per-view basis. Although one might generally think of large audience video as having higher production values than small audience video, occasionally content off the diagonal (see Fig. 9.1, below) is successful.

An example of large audience content with low production values would be a highly successful YouTube clip produced by a single individual with a Web cam (see, for example, Chris Crocker's videos emotionally defending Britney Spears[5]). LonelyGirl15 is a hybrid with a full production crew producing video episodes for a series that is only distributed via the Internet.[6] An example of small audience content with high production values would be a high-definition digital video program introduced via the Internet as a means of finding a more conventional outlet (e.g., Sanctuary).[7] From the producer's perspective, mass audiences with low production

Fig. 9.1 Production values and potential audience size
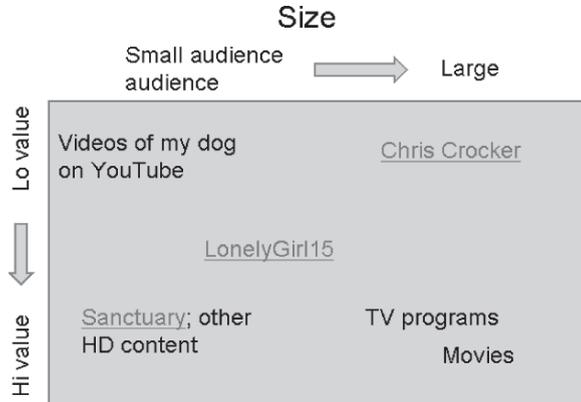

Table 9.1 The MeTV hypothesis (Eli Noam)

Stages	Delivery	Audience size	Regulation	Business model
Limited	Terrestrial	Large	Regulated	Ad-Supported
Multi-channel	Cable, satellite	Smaller	Lightly regulated	Subscription
MeTV	Internet and other digital	Niches	Lightly regulated?	Download to own, pay per view

costs are valued highly because of potential for large profits. Nevertheless, the movie industry, which sets standards for all full-motion imagery, generally opts for high-cost productions combined with heavy advertising to assure large audiences.[8]

Another way to look at this issue is the MeTV hypothesis of Eli Noam.[9] Noam argues that the first phase of TV was what he called "limited TV": broadcasting-based, large audiences, regulated, and ad-supported. The second phase of TV was "multi-channel TV": delivered by cable or satellite, small to medium-sized audiences, lightly regulated, and subscription-based. The third phase will be "MeTV": delivered by various digital media, stored on TiVo like boxes, largely unregulated, and paid for on a file-by-file basis. A distinctive feature of the third phase would be user programming of content instead of network or channel programming (see Table 9.1).

Vint Cerf predicted the "end of TV as we know it" generalizing from success of iPod/iTunes in audio content.[10] The user downloads audio and video clips from the Internet to a computer and then transfers them to and plays them on a convenient device. Whereas audio clips are mostly played on iPods or MP3 portable devices, it is likely that video content will be downloaded also to set-top boxes to be played on televisions. Nevertheless, the same business model of downloading content via the Internet will apply to both types of content, according to this theory.

Part of the Noam/Cerf theorizing is premised on the importance of time-shifting for consumers, and hence of storage of programs for later viewing. This coincides nicely with relative strengths and weaknesses of digital delivery media, where

top 20%

the long tail

0

number of occurrences ——————————————————————→
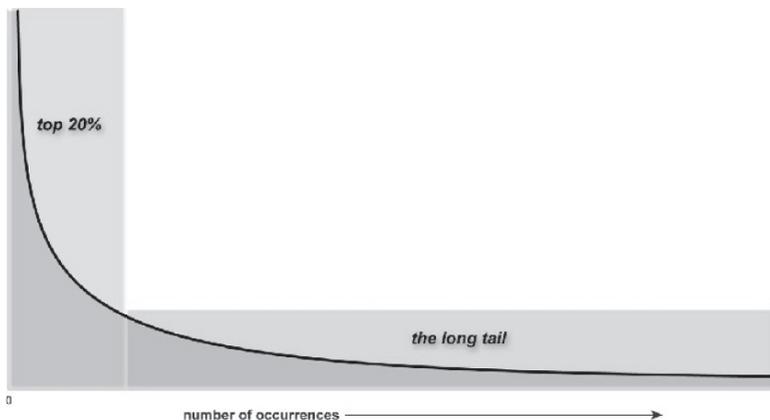
Fig. 9.2 The long tail (Pareto distribution).
Source: http://blogs.idc.com/ie/wp-content/LongTail_01.jpg

greater efficiencies are realized by taking advantage of lower cost of transmitting information when traffic is low. The capacity of the Internet may be challenged by too much real-time usage for transmission of real-time programming, which is one of the reasons why telephone and cable companies want to reserve bandwidth for their own IPTV services. But another response by market players is to offer services that involve downloading of large files via the Internet to DVRs and set-top boxes for later viewing.

A third perspective that can be used for analysis is the long-tail hypothesis. Popularized in a best-seller by Chris Anderson,[11] the long tail is simply an expected distribution curve called a Pareto Distribution (or power law) where the highest ranked services in terms of audience dominate the total but where, as the ranking declines there are still many services commanding smaller and smaller audiences (see Fig. 9.2). If the distribution has a "fat tail" – i.e. if a large percentage of service providers are in the right-hand half of the tail – then that is a sign of market diversity even if a small number of large providers dominate the market. Degree of inequality in a distribution can be measured using a variety of indices, including the Gini and Hirschman/Herfindahl indices. Another way of restating the long tail hypothesis would be to say that introduction of digital delivery via the Internet will decrease the Gini index for video content providers (measured in terms of audience share).

Mass-Audience TV Migrates to IPTV

Until recently, delivery of digital video broadcast content by television channels and networks was limited mainly to short clips or lower-resolution streamed video on Web sites. All broadcasting networks are offering both clips and whole programs

Table 9.2 Web sites of the four television broadcasting networks

Network	URL	Comments
ABC	http://www.abc.go.com	4:3, Free
CBS	http://www.cbs.com	4:3, Free
Fox	http://www.fox.com	4:3, Free
NBC universal	http://www.nbc.com	16:9, Ad-supported

using Flash for playback; so far only NBC is offering ad-supported 16:9 video (see Table 9.2). A combination of advertising and fees for downloading or streaming will eventually be used to obtain revenues for these services, but for the moment they are primarily used to advertise broadcasts themselves and/or to allow fans of particular programs or series to watch entire programs at their convenience.

Business strategies of telephone and cable companies now include delivery of digital video content via their networks, mainly through what is called IPTV or Internet Protocol Television.[12] Such services will typically be bundled with Web access and Voice over Internet Protocol (VoIP) telephone services. The bundling of cable TV, Web access, and VoIP services for a slighter reduced fee in the United States is called "triple play." In the future, mobile services may be added to constitute a "quadruple play." Addition of quadruple play may mean high-quality mobile video services will become widely available. Some mobile video is currently offered by cellular carriers but at relatively low quality and high prices. An example of this is Verizon's V CAST Video service.

In 2006, AT&T launched its U-Verse IPTV service offering over 300 channels in 11 cities with more to be added in subsequent years. U-Verse provides high-speed Internet access at a speed of around 6 Mbit/s via a fiber to the node (FTTN) architecture. The fiber goes to a DSLAM box in the neighborhood; copper cable goes from there into the subscriber's home. The service was launched in San Antonio, Texas. Thirty of the 300 channels offered in the most expensive U-Verse package included high-definition television (HDTV) content.[13] At the end of 2006, there were only 3,000 U-Verse customers; by September 2007, there were 100,000. AT&T expected the U-Verse service would be available to 8 million homes by the end of 2007; and more than double that by the end of 2008.

Verizon launched its pilot FiOS service in Keller, Texas in September 2005. FiOS is a high-speed broadband service offering (eventually) 100 megabit per second (mps) downloads via fiber to home (FTTH) architecture. Actual FiOS services started at 10 mps which was raised to 20 mps in 2007. By the end of March 2007, Verizon had passed 6.8 million homes. Verizon hoped to add 3 million homes per year by the end of 2010. The total investment in the FiOS network through 2010 was projected to be $18 billion. To the end of September 2007, Verizon had over 500,000 FiOS subscribers. The video service part of FiOS was expected to have over 200,000 subscribers by the end of 2007.

Table 9.3 summarizes similarities and differences between AT&T and Verizon services. The purpose of TV services of U-Verse and FiOS is to permit the two telephone companies to compete with cable companies for cable TV customers by

Table 9.3 Verizon FiOS vs. AT&T
U-Verse

	FiOS	U-Verse
Architecture	FTTH	FTTN
Video Customers, end 2007	1,000,000	231,000
Download speeds	10 mps	6 mps

using broadband infrastructure. The channel lineups and pricing of the two serv-
ices are clearly pointed in that direction and early reports show that they are taking
customers away from local cable competitors.

While rollout of U-Verse and FiOS is important for building of broadband
infrastructure in the United States, so far the implications for TV content are fairly
minimal. The same content that is being provided by terrestrial broadcasters, cable
operators, and satellite services will be available on U-Verse and FiOS with only a
few exceptions. The same can be said for certain Internet video aggregators like Joost,
hulu.com, and others. More important is that customers of these services will have
high-speed Internet access if they did not have it already, and edgier Internet Television
content will also be available to them via the Web if they choose to access it.

Internet TV Viewers and Their Habits

Whereas IPTV is basically a set of technologies and market strategies that allow
telephone companies to compete with cable companies for current mass-audience
TV viewers, Internet TV is a broader phenomenon involving use of the Internet to
distribute digital video images of all sorts. To capture on paper the enormous vari-
ety of types of video on the Internet is impossible, and much time will be wasted by
scholars in vain attempts to bring order to chaos. Nevertheless, some patterns can
be identified and some order can be imposed artificially for the sake of inquiry.

A report released by Veronis Suhler Stevenson (VSS) in August 2007 reported
that total time spent on various media declined for the first time since 1997,
although the hourly average usage was still 3.53 h per day. In 2006, consumers
spent most of their media time viewing TV and listening to radio (70%); next came
recorded music (5.3%), newspapers (5%) and accessing the Internet (5%). Increase
in Internet usage was mainly at the expense of newspapers and recorded music.[14]

A random-sample survey entitled the "State of Media Democracy" conducted
by Deloitte & Touche at the end of October 2007 found that 38% of respondents
were watching TV shows on-line, 36% were using their cell phones as entertain-
ment devices, and 45% were creating online content such as Web sites, blogs,
music and videos. About half the respondents were using social networking Web
sites. A major increase had occurred in all of these activities when compared with
a survey taken eight months earlier.[15]

In December 2007, the Pew Internet Project reported that 48% of respondents
who were Internet users said they had visited a video-sharing Web site, up from
33% a year earlier. The same survey showed that visitors to video-sharing sites
tended to be male, young, well-educated, and from relatively wealthy households.

The gaps in usage between males and females, young and old, well-educated and less educated, wealthy and poor had declined somewhat over a one-year period.[16]

Roughly 24% of households had a digital video recorder (DVR) by the end of 2007 and 48% used video on demand (VOD) services from their cable operator. More people reported watching TV via replay rather than during scheduled broadcast times.[17] DVR penetration was projected to rise to 35% by 2012.[18] Programs recorded on DVRs were viewed mostly within a week of being recorded.[19] DVR manufacturers like TiVo and set-top box manufacturers like LG were beginning to offer movie downloading services using the Internet.

As a result of growing penetration of DVRs and growing use of the Internet for entertainment, companies like Nielsen are beginning to change their techniques for measuring the size of audiences. Nielsen has already replaced their old system of relying on informants to record time spent on particular TV programs with a set-top box that automatically records information. Similar devices were being created to attach to DVRs, computers, video game consoles, and cellular telephones. Accurate statistics on these alternative media access points will soon be available for a fee. A major potential use for such statistics will be to permit advertisers to make more informed decisions about where to advertise.

Downloading Vs. Streaming

The two main methods of delivering Internet Television are downloading and streaming. Downloading involves transfer of a digital file to the consumer, usually via some variant of the file transfer protocol (FTP). Whereas to view the content by downloading, the user must wait for the entire file to download and must then view it through media player software that is compatible with the video file's format. In streaming, the viewing starts prior to completion of the download and the user does not get access to the entire file after viewing it. Whereas downloading is based on FTP, streaming works on protocols built on top of the User Datagram Protocol (UDP) such as the Real-time Streaming Protocol (RTSP), Real-time Transport Protocol (RTP), and Real-time Transport Control Protocol (RTCP).

Content producers hoping to maintain control over content consistent with their interpretation of "digital rights management" (DRM) tend to prefer streaming to downloading; but all producers are concerned about illegal uploading and downloading of their content, especially in the light of rapid growth of file-sharing systems. Users may prefer streaming to downloading because less local memory is required for viewing video files. If the user wants to port the file to another playback device, such as a portable or handheld video player without wireless Internet access, then downloading is the only practical choice.

There were four main competing systems for streaming video: Apple's QuickTime, Microsoft's Windows Media Player, RealNetwork's RealVideo, and Adobe's Flash. All these systems required that the users have the appropriate software installed on their computers. By the end of 2007, most video-sharing Web sites were using Flash (see Table 9.4). Flash players had been downloaded

Table 9.4 Non-pornographic video-sharing Web sites

Web site	Software download required	Production values	Features
http://www.atomfilms.com	Yes for HD, no for other content	High	See text below
http://www.babelgum.com	Yes	Medium	Original content
http://www.blip.tv	No	Flash	User-generated, Creative Commons License
http://www.bloggingheads.tv	No	Medium	Split screen dialogues
http://www.break.com	No	Flash	Combat clips from Iraq
http://www.broadcaster.com	No	Low	Humor mostly
http://www.channelflip.com	No	Medium	Game reviews, how to videos (unwired.tv), film reviews (Discus)
http://www.currenttv.com	No	Medium	Social news site
http://www.dailymotion.com	No	Flash	Combines licensed and user-generated
http://www.GoFish.com	No	Low	Humor mostly
http://video.google.com	No	Flash	Wide variety
http://www.imeem.com	No	Flash	Rock videos, soccer matches
http://www.jalipo.com	No	Flash	Real-time TV from overseas
http://www.jaman.com	No	Flash	Movie trailers, Bollywood
http://www.joost.com	Yes	High	TV with social networking
http://www.jumptv.com	No	Medium	TV from other countries
http://www.justin.tv	No	Low	Webcam videos
http://www.metacafe.com	No	Medium	User-generated, contributors paid
http://vids.myspace.com	No	Flash	Music videos, celebrities
http://www.outloud.tv	No	Flash	User-generated
http://www.revision3.com	No	Flash	Techno-geek shows
http://www.sevenload.com	No	Flash	German site: photos and videos
http://www.spiketv.com	No	Medium	Man Show, Ultimate Fighters, iFilm shorts
http://www.tudou.com	No	Flash	Chinese video site
http://www.twango.com	No	Low	Includes videos, audio clips, and photos
http://www.veoh.com	Optional	Medium	Anime, Manga, mulitple channels
http://www.vimeo.com	No	Medium	User-generated
http://www.yahoovideo.com	No	Flash	Wide variety
http://www.youtube.com	No	Flash	Wide variety
http://www.zattoo.com	Yes	n.a.	Foreign TV channels, not yet available in the US

to over 98% of personal computers with Internet connections; the corresponding percentage for Windows Media Player was 83%, QuickTime 68%. Many users preferred Flash because of shorter time required for playback after clicking on a thumbnail version of the video. Many content producers preferred Flash because of the ease with which videos in various formats could be converted to compact files for streaming.[20]

Pornography

Any treatment of Internet television would be remiss if there was no mention of the enormous and pioneering role of the pornography industry.[21] All examples below of non-pornographic types of Internet video services have their counterparts (and, in some cases, predecessors) in the pornosphere. Revenues for the global pornography industry in 2006 were just short of $100 billion, up from $57 billion in 2003. China was the number one revenue earner with $27.4 billion; the US was fourth with $13.3 billion. US Internet pornography revenues were $2.84 billion in 2006. A high proportion of Internet pornography revenues come from rental or sale of online digital video content.

Twenty-eight thousand Internet users per second are viewing pornography on an average and 372 are entering adult content search terms into search engines. Porn viewers tend to be higher income individuals, 35% of who earn $75,000 or more annually. US firms lead the world in producing pornographic video content and US nodes host the most pornographic Web pages: 244 million of them.[22]

Because pornography does not contribute in any significant way to the number of voices in society that can be heard, it does not help to build or sustain democratic systems, I will focus on non-pornographic video-sharing Web sites in the rest of this chapter. Before leaving this topic, however, I wanted to call the readers' attention to a humorous YouTube video – "The Internet is for Porn"[23] – which is not too far off the mark and which has been viewed over four million times since its upload to YouTube.

Internet Video Advertising

There are two main business models for Internet television: free downloads in exchange for viewing advertisements and paid downloads to own. Some Internet videos are distributed for free without advertising under the banner of "viral marketing" in the hope that down-loaders will be so grateful that they will purchase related products and services. There is some movement in the direction of downloading to rent, where there is a time limit on the use of a downloaded file. AppleTV and iTunes have started an on-line movie rental service, as also Amazon and Netflix.[24]

   Wal-Mart partnered with HP, broadcasters, and major movie studios to offer
TV shows and movies. Wal-Mart downloads required devices with Windows that
supported Windows Media Player software. The videos will not play on iPods or
Microsoft Zunes. The cost of most films was about $15. When HP decided to drop
out of the deal, Wal-Mart shuttered the project.
   A slight variation on the two basic models involves video streaming. Streamed
video content does not reside on the user's computer like downloaded content but
rather on the content provider's network. The primary advantage for the vendor is
that the user cannot use the content for anything other than viewing; this is a dis-
advantage from the perspective of the user, who might want to transfer the content
to local storage devices and/or edit or sample the content for creative purposes.
Streamed video, like downloaded video, can be distributed for free, with or without
advertising.

User-Generated Video

One of the key differences between video for TV broadcast, cable, satellite and
IPTV delivery and the rest of the Internet TV universe is *user-generated video*.
While most videos uploaded to user-generated video sites are donated, some sites
pay users to submit videos. Why do people upload short videos for sharing on
Web sites, and why do the Web sites solicit donations? The shortest and simplest
answer is that these videos generate traffic and traffic sells advertisements. User-
generated video is the essence of what enabled YouTube to acquire sufficient
market value to be purchased by Google for $1.65 billion in October 2006. It is
also part of what makes a multi-million-dollar investment in FaceBook attractive
to Microsoft. Advertising revenues from user-generated video sites are expected
to reach $900 million by 2011.[25] Microsoft's hostile takeover bid of Yahoo! in
February 2008 was partly an attempt to make up for Microsoft's failure to make
MSN a true competitor to either Google or Yahoo as a search engine or Web-based
email service.

Social Networking and Internet Video

A number of Internet video services offer social networking along with sharing of
videos. The largest social networking services, like MySpace and FaceBook, allow
users to upload videos and share them with their friends. But so do smaller and
newer services like Joost, Broadcaster, Twango, and Vimeo. YouTube allows you
to share a video with a friend via email, and to comment on videos with videos.
Combining social networking with Internet video allows users to employ video
files along with text, photographs, and audio files to build and maintain a network
of friends and relations.

Characteristics of a Sample of Video-Sharing Web Sites

Examples of video-sharing Web sites listed can be found in Table 9.4, below. This is not a comprehensive list but it does include many of the most popular non-pornographic video Web sites.

   The remaining portion of this chapter will be devoted to describing some of the Web sites in Table 9.4 and examining their potential to add to the diversity of viewpoints.

YouTube, Google Video, Yahoo Video, and AOL Video

Video-sharing services of the three major Web portals, Google, Yahoo, and AOL, are the most popular services on the Internet because the combination of video-sharing and search makes it easier for users to find what they want. In addition, these sites provide access to very large numbers of videos, many of which are located on smaller Web-sharing sites.

   The most popular of them all is YouTube, according to Alexa Rankings (see Table 9.5 below). YouTube was founded in 2005 by three former employees of PayPal. As on August 2006, YouTube was hosting 6.1 million Flash videos which required 45 TB of storage.[26] Besides being the fastest growing Web site in the history of the Internet, YouTube streamed an average of 100 million videos per day. Over 50% of all Internet videos are watched on YouTube. Between 30 and 40% of the content on YouTube is copyrighted, and the combination of licensed and user-generated content constitutes one of YouTube's competitive advantages over other sites.[27]

   YouTube contains an enormous variety of videos. As in February 2008, a YouTube search for "*" returned about 69 million videos. The very large subset of videos that express political views covers wide ranges of topics and perspectives. One important political use of YouTube was CNN's solicitation of YouTube videos to use as questions for televised debates of both Democratic (July 23, 2007) and Republican (November 28, 2007) presidential candidates.[28] Another example of

Table 9.5 Alexa ranking of internet video Web sites

Site	June 2006	February 2008
YouTube	23	3
Zippyvideos	1,544	11,807
Dailymotion	2,171	31
Vidilife	2,245	9,680
Veoh	6,934	77
Vimeo	7,400	6,224
GoFish	8,645	2,208
Imeem	–	150
Metacafe	–	179

Source: http://www.alexa.com/site/ds/top_500

this potential for political expression occurred during the national debate over net neutrality in the summer of 2006 when both proponents and opponents uploaded videos to YouTube as part of their efforts to mobilize support.[29]

Even though YouTube is now owned by Google, it continues to operate independently from Google's video-sharing service. Google's video search engine returns video thumbnails from all video-sharing Web sites on the Internet that are free or ad-supported. As in all other Google searches, Google obtains revenues by selling advertisements on the top and right side of the search results pages.

AOL and Yahoo also provide some original video content, user-generated videos, and links to videos of other aggregators, but they are dwarfed in size by YouTube and Google Video. There is a real advantage to content producers to have their content listed on one of the major search engine portals, and a small percentage of producers are paid to license their content.

Searching for Talent: AtomFilms, Current, Revision3, and Spike TV

This group of Web sites commission original Web videos from independent producers that involve, on the average, considerably higher production values than those found on the video-sharing Web sites of search engine portals. In order to pay for the right to share these higher quality videos, the managers of these sites must either give the producers a share of online advertising revenues or find sponsors for their productions. The earliest and most successful example of this is AtomFilms.

Launched in 1998, AtomFilms created a Web site for independent film producers that survived the dot.com bust. Its comedy series includes such memorable and popular offerings as Possum Death Spree and Ninja Babes from Space; the animation series include Angry Kid and Joe Cartoon. All content on AtomFilms is edgy, and much of it could not be shown on broadcast television.

AtomFilms merged with Shockwave in early 2001 to form Atom Entertainment, Inc. In September 2006, MTV Networks purchased AtomFilms for $200 million. In October 2006, the CEO of AtomFilms, Mika Salmi, was named CEO of MTV. MTV Networks is a subsidiary of Viacom. After the MTV purchase, AtomFilms introduced a high-definition version of the site optimized for broadband connections. It also added a new channel based on programming from the Comedy Channel. AtomFilms shares ad revenues with film makers in order to attract high-quality content to the site. Some AtomFilms directors, like Jason Reitman, have gone on to direct full length Hollywood feature films.

iFilm was one of the pioneers of Internet video when its Web site launched in May 2000. iFilm specialized in licensing short videos that appealed to males in the 18–34 age group. MTV purchased iFilm in October 2005. The acquisition of iFilm signaled that at least one major cable television group was taking Internet TV seriously. In March 2007, iFilm merged with Spike TV which was part of the Entertainment Group of MTV Networks. While Spike had created programs for its

cable channels like World's Most Amazing Videos and Ultimate Fighters, which also appealed to the young adult male demographic, until the merger Spike had not had much of a Web presence.

Current TV is an Emmy Award winning independent media company led by former US Vice President Albert Gore. Current's cable TV network went on air on August 1, 2005. On September 20, 2006, Current TV started a short-lived partnership with Yahoo to supply topic-specific channels to the Yahoo video Web site. The first four of these became very popular on the site and additional channels were planned. However, on December 6, 2006, the relationship ended but Current TV continued to broadcast its Internet content on its own Web site. Besides channels focusing on politics and culture, Current TV invites young film makers to submit original material. The best material is featured on the site's home page.

Revision3 is a relatively younger video-sharing Web service based in San Francisco that is specializing in original productions. These productions are organized as "shows" with multiple episodes such as Diggnation, GigaOM, Mysteries of Science, NotMTV, PixelPerfect, Tekzilla, and Web Drifter. PixelPerfect, for example, is a how-to-do-it show about how to manipulate images with Adobe's Photoshop software. Diggnation provides reviews of items posted recently to Digg. Tekzilla features reviews of new electronic gadgets. The intended audience, clearly, is Geeky/Nerdy.

This group of Web sites serves as a paving ground for new talent. One of the reasons why young content producers are willing to work with these services is the prospect of being discovered by better-paying employers. Not all of the talent here will go on to produce content for large audiences, but increasingly they do not have to do so to earn a decent living. Production costs have gone down to the point where it is possible to raise production values sufficiently to win large enough audiences to provide steady flow of advertising revenues. Consumer dissatisfaction with content provided by broadcast TV, including on cable and satellite, will continue to fuel demand for this sort of content.

Conclusions

The importance of video-sharing Web sites is that they represent the potential for Internet TV to create opportunities for new voices to be heard by large audiences. We want our media to underpin democracy by allowing a broad spectrum of political voices to be heard. Until the rise of what Eli Noam calls multi-channel television (see Table 9.1 above), there was insufficient competition among television networks and their associated content producers to allow much diversity of viewpoints to be heard on TV. With the advent of cable and satellite television, and the rise of new specialized channels and networks, there was some increase in the variety of content, but also a division of the audience into smaller niches. News coverage increased a bit in variety with the addition of mainly right-wing news channels. Cable access and left-wing channels like Democracy Now had the effect

of widening the spectrum of views also. Cable channels like C-Span and gavel-to-gavel coverage of state legislatures, city councils and school boards helped to increase the transparency of government for citizens who subscribed. To put it in the language of the long tail, the long tail got a bit fatter. The competition from cable and satellite gave the broadcast networks an incentive to improve the quality of their prime-time offerings in order to maintain their audience shares (which continue to decline slowly). Now the competition from Internet TV appears to be continuing these processes pretty much in the same direction.

While a change from mass-audience dominated television to a television with many more voices, more variation in production values, and more niche and/or specialized markets/audiences appears to be occurring, that transition has both positive and negative aspects. On the plus side, the long tails are getting fatter and more voices are being heard. Precise measurement of this awaits the availability of audience measurement techniques that are still being developed. On the minus side, there is the potential for people to organize their lives, a la the MeTV hypothesis (see Table 9.1 above), so that they never encounter a discordant idea that might help them to understand or respect the views of others. There was always some tendency in the past for people to do this simply by avoiding exposure to the media (including the print media). Now it will be possible to do it while immersed in a highly evasive and fluid media environment that reinforces all pre-existing attitudes and beliefs. In my view, most individuals in a free society will not do this, especially if the average level of education/schooling continues to rise, so the net effect of the rise of Internet TV is likely to be positive for democracy.

Notes

1. See, for example, Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Touchstone, 2000), p. 36.
2. Robert McChesney, "The New Global Media: It's a Small World of Big Conglomerates," *The Nation*, November 29, 1999; for a contrary view, see Eli Noam, "Media Consolidation," Testimony before the Senate Commerce Committee, July 17, 2001.
3. Media Bureau, Federal Communications Commission, *2007 Annual Report* (Washington, DC: FCC, January 17, 2008).
4. OECD Directorate for Science, Technology, and Industry, Broadband Portal, "Broadband Statistics to June 2007," http://www.oecd.org/document/60/0,3343,en_2649_201185_39574076_1_1_1_1,00.html.
5. http://www.youtube.com/watch?v=kHmvkRoEowc.
6. http://www.lg15.com.
7. http://www.sanctuaryforall.com.
8. David Waterman, "Business Models and Program Content," in Eli Noam, Jo Groebel, and Darcy Gerbarg, eds., *Internet Television* (Mahwah, N.J.: Lawrence Erlbaum Associates, 2004).
9. Eli M. Noam, "The Stages of Television: From Multi-Channel Television to Me-TV," CITI Working Paper Series, 1995.
10. Bobbie Johnson, "Vint Cerf, aka the Godfather of the Net, Predicts the End of TV as we Know it," *The Guardian*, August 27, 2007, http://www.guardian.co.uk/technology/2007/aug/27/news.google.

11. Chris Anderson, *The Long Tail: Why the Future of Business is Selling Less of More* (New York: Hyperion, 2006). See also Anderson's web site and blog at http://www.thelongtail.com.

12. Judith Estrin and Bill Carrico coined the term IPTV when they founded Precept Software in 1995. Cisco acquired the firm in 1998. A definition of IPTV is "a system where a digital television service is delivered using Internet Protocol over network infrastructure…" http://en.wikipedia.org/wiki/IPTV. Experts in the field are beginning to distinguish between IPTV and what they call "Internet Television." Whereas IPTV can be delivered over either public or private IP networks, Internet Television is only delivered over the public Internet. See also, Working Party on Communication Infrastructures and Services Policy, *IPTV: Market Development and Regulatory Treatment* (Paris: OECD, December 19, 2007).

13. http://www.att.com/gen/sites/iptv?pid=8695.

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15. Gail Schiller, "Americans More Wired: Survey," *Reuters*, December 28, 2007, http://www.reuters.com/article/domesticNews/idUSN2844258220071228.

16. "Video Sharing Websites," Pew Internet Project Data Memo, January 9, 2008.

17. IBM Media and Entertainment Consumer Household Survey Fact Sheet, undated but released in Fall 2007, http://www-03.ibm.com/industries/media/doc/content/bin/media_consumer_entertainment_survey_fact_sheet.pdf.

18. Ned Randolph, "DVR Penetration to Double in Five Years," *Video Business*, January 3, 2008, http://www.videobusiness.com/article/CA6516769.html.

19. "Nielsen: 10% of Broadcast Primetime Viewing via DVR Playback," http://www.marketing-charts.com/television/nielsen-10-of-broadcast-primetime-viewing-via-dvr-playback-536/.

20. Email correspondence with Regic Gaughan and Bryan Paul on LinkedIn, February 4, 2008.

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23. http://www.youtube.com/watch?v=eWEjvCRPrCo.

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25. "$1.5 Billion to Be Spent on Online Video Advertising by 2011," *Wireless World Forum*, March 1, 2007, http://www.prlog.org/10009422-do-these-statistics-mean-anything-to-you.pdf.

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27. http://www.startup-review.com/blog/youtube-case-study-widget-marketing-comes-of-age.php.

28. http://www.youtube.com/profile_videos?user=YTdebates&p=r.

29. For example, Public Knowledge's video in favor of net neutrality is at http://www.youtube.com/watch?v=l9jHOn0EW8U; the National Cable and Telecommunications Association's clip is at http://www.youtube.com/watch?v=oPIYxtjLFeI&feature=related.