CHAPTER

15

The Content Landscape[1]

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> "Eventually, Television will fit on the Internet—which doesn't necessarily mean it will end up there"
>
> —Bruce Owen

Looking at the future of interactive media, there are two main channels for delivering the next generation of television content: interactive television and Internet protocol television (IPTV). Whereas the first channel is controlled by traditional television providers and transmits content over the television screen through terrestrial, cable, or satellite technologies, the latter takes advantage of the relative freedom of Internet delivery and uses the personal computer as a main household terminal. IPTV has two classes of users: the majority who connect to the Internet using the limited bandwidth of a dial-up modem, and those who connect through cable or digital subscriber line (DSL), which is a high-speed broadband connection and provides a better quality user experience.

Definitions for IPTV vary, but they broadly refer to video content delivered over the Internet. This chapter refers to IPTV content as "Internet TV," which is streamed or downloaded and received through a personal computer. The content referred to is video, not text based, although flash animation is taken into consideration as well.

Streaming video is a technique for transferring data processed as a steady and continuous stream, allowing the client browser to start dis-

[1]This chapter was concluded in August 2001 and reflects the IPTV content landscape at the time.

playing the data before the entire file has been transmitted.[2] As such, the viewing experience is more like that of television. Once viewed, the content does not remain on the viewer's computer. Downloading refers to copying a file from an Internet server to a user's computer. This takes more time than streaming, but a downloaded file can be saved and accessed repeatedly on the PC.

Internet TV content models are based both on original programming and regenerated branded broadcast content. Borrowing from the traditional broadcast model, much of the content is video, streamed and viewed in a linear, noninteractive manner. This, however, may not be the best Internet TV content. There seems to be a need and place for the creation of new forms of content using this technology. In addressing this issue, it is useful to look at the range of content and services offered and to examine some of the main factors influencing content creation. These include the current and future Internet TV audience, technological limitations, and the economics of Internet-delivered content. Will this content justify a new revenue model in a market accustomed to accessing the web for free and, if so, how? It is hard to predict whether Internet TV will become a viable business and which content models will work, but these questions provide an interesting discussion.

THE CURRENT LANDSCAPE OF CONTENT PROVIDERS

The majority of content providers fit into several categories (Hart, 2000); television broadcasters, meaning major networks and local and cable TV channels; large Hollywood film and TV producers; independent web video creators and syndicators, and licensers of web video. Each provides a variety of content, including news, sports, and entertainment. User-generated content is an additional popular model, in which the users provide all or part of the site's content. It is difficult to list and discuss all the content offerings available today. The following are a few examples from the current landscape.

Television Broadcasters

All major networks offer enhancements on their Web sites that are used primarily for promotional or enhanced versions of news and sports programming. Some provide Internet-only programming. For example, ABC news (www.abcnews.com) pushes out four web-only programs accessible live or on demand, including *The Sam Show,* hosted by Sam Donaldson, "a half hour Internet-only streamed webcast featuring interviews with newsmakers and innovators" (ABC.com home page, 2001). They also offer *Internet Expose* with Chris Wallace, an ABC news exclusive program offer-

[2]http://thetech.pcwebopedia.com/term/s/streaming.html

ing interactive elements such as chat sessions with guests, links to related Web sites, e-mail feedback, and a world news webcast that allows chat with anchors. NBC offers two sites, www.nbci.com, a general web portal, and www.msnbc.com, a joint venture between Microsoft and NBC that provides news items, headline news, hourly updates, and videos of breaking news. CBS news (www.cbsnews.com) provides streaming versions of their top stories. On cable, CNN (www.cnn.com) offers streaming videos of headline news and top stories. Local stations, such as NY1 (www.ny1.com), offer both a streaming version of an actual broadcast as well as an archive of their news stories (including both text and video). Independent sites, such as www.bluetorch.com, work in conjunction with televised sports and provide streaming video and interactive sport programming.

Hollywood Studios

Most studios use their Web sites to advertise new films and TV programs. Disney offers two sites. One site, disney.com (www.disney.com), is aimed at families with children, offers interactive content, including movies, TV, and video information and animation. The other site, go.com (www.go.com), has a more general audience and provides news headlines in addition to movie trailers and additional entertainment information. Sony (www.sonypictures.com) provides trailers as well as online initiatives to branded shows such as *Dawson's Desktop,* the online companion to *Dawson's Creek*. Warner Brothers (www.warnerbrothers.com) provides trailers and clips of new releases as well as classic titles. Apple (www.apple.com/trailers) offers a range of trailers from different studios.

Independent Producers

During the past few years there have been a growing number of independent entertainment-oriented dot-coms that have been trying to find new ways to create original content, mainly short films and animation, as an alternative to conventional television programming. Some of these sites, such as television.com and breakTV.com, provide access to previously broadcast television shows as well as behind the scenes interviews and streaming video highlights of brand name network and syndicated shows. Others provide original programming and access to numerous short films. One of the best known examples for this genre is pseudo.com, which featured original short films and programming, but was forced to shut down in the fall of 2000. IFILM (www.ifilm.com) provides an online video on demand portal with over 80,000 films, including news reviews, trailers, and a video shopping guide. It also produces a weekly television series in partnership with "The Independent Channel," covering the world of independent film. AtomShockwave, a merger between Atomfilms and

Shockwave (www.atomfilm.com), provides a huge pool of game, film, and animation content online for consumers and businesses.

MediaTrip (www.mediatrip.com) is an entertainment portal providing on-demand film, music, and original programming content for adults from ages 18 to 49. Hypnotic.com, which merged with nibblebox.com, creates vector animation (Flash) deliverable over low bandwidth; distantcorners.com provides science fiction shorts and has recently formed a partnership with Sony pictures digital entertainment. Icebox.com, heavy.com, mondo media, and wildbrain.com primarily create and distribute animation. Some of the best-known creations of this genre are *The God & Devil Show* (mondo media) and *Mr. Wong* (Icebox). Wirebreak.com develops and produces programming for distribution on television video or other Web sites. The site voxxy.com provides shows for teenage girls, including a series with Jennifer Aniston.

Content Syndicators and Licensors

Some sites specialize in assembling lists of content firms and act as intermediaries between those firms and final customers (Hart, 2000). Examples include Screamingmedia (www.screamingmedia.com), which sells the content of 2,800 online publishers to 1,100 Web sites; Virage (www.virage.com), which is video content indexing for Web sites that provide video owners with Internet content distribution solutions; and iSyndicate (www.isyndicate.com), which enables the collection, distribution, and management of content across the Internet. The Feedroom (www.feedroom.com) aggregates predominately news content from nationwide sites, including 13 NBC channels, 17 Tribune channels, Reuters, four Journal stations, and one Granite Group station.

User-Generated Content

In this model, the content providers are the users themselves. The viewers create and send their own videos for transmission over the web, creating personalized channels that can be shared with users worldwide. This model appeals to the public, which can broadcast its own content and thereby affect the programming. It also enhances the business proposition by providing a cost-effective way to produce, acquire, and market content (Morisano, 2001). Examples include alltrue.com, an entertainment platform in which the users can watch, collect, and send video clips that are usually reality based. Sportscapsule.com allows teams to upload their videos of local sporting events, which the company then enhances with popular music, graphics, and prerecorded voiceover comments from sport personalities such as ESPN's Chris Berman and TV football commentator John Madden. Earthcam.com (http://tv.earthcam.com) allows users to

create their own "personal TV channel" on the PC and to broadcast content to friends, family, or the World Wide Web. Anivision.com enables a three-dimensional interactive viewing experience that allows viewers to direct their own productions.

PROMINENT REASONS CONTRIBUTED TO THE FALL

> "Everyone had great ideas—it was just before their time."
>
> —Peter Scott, Nascar.com

Only a short time ago, the excitement over the vast opportunities offered by the web reached a peak. In December 1999, a Forrester report predicted that broadband penetration would rise from six million broadband users in 2000 to 19 million in 2002 (Schwartz, 1999), more and more of them young Internet audiences.[3] Other advancements, such as the new capabilities that streaming technologies offered for innovative programming, helped create an air of excitement around Internet TV. The past year has seen the fall of many Internet content ventures. Expressions such as "Black September," referring to September 2000, saw many of these companies—including the Digital Entertainment Network (den.com), pop.com, and pseudo. com—forced to close their doors (Hollywood Flops, 2000). When David Wertheimer, chairman of Wirebreak.com, coined the phrase "Hollywood's Vietnam," he was referring to the phenomenon of people rushing into Internet businesses without a clear idea of why they are getting in. This scenario depicts the grave atmosphere surrounding this industry (Lyman, 2000).

Business Models Undercut by Disappointing Broadband Penetration

By summer 2001, only 2 out of 10 million DSL phone lines that had been predicted for the United States were actually installed. Although 70 million of the country's 105 million households have access to cable TV, and about 60 million have access to cable modems, less than 10% of those have signed up for the service (Yankee Group Report: Broadband—What Happened?, 2000). Most of the entertainment sites catered to a broadband audience, but there were too few broadband users to sustain viable businesses. Most of these companies did not have a business model that included additional revenue streams. The majority of the web savvy audience in the United States, which was accustomed to receiving content for free, would not pay for the new Internet content. At the same time, due to the dot-com crash, both investors and advertisers pulled out of the Internet, resulting in substantial financial losses and making it impossible

[3]According to the same Forrester report, young consumers are 29% more interested in broadband than their adult counterparts. See Schwartz, 1999. *TV's Internet Tier,* p. 4.

for many of these companies to survive. The Digital Entertainment Network (DEN), for example, which created 4- to 6-minute streaming videos as well as 13 online series ranging from sports and music to sex-filled drama, were targeting such a broadband audience. After raising $50 million from companies, including Microsoft and PepsiCo, and paying its top eight executives excessive salaries described as "Hollywood excess meets Internet euphoria" (Digital Entertainment Network: Start up or Non-Starter, 1999), the company lost $27.1 million in 18 months and closed in October 2000. Pop.Com, a joint venture formed by DreamWorks' Steven Spielberg and Imagine Entertainment's Paul Allen, laid off most of its 70 staffers in early September 2000 and indefinitely postponed the launch of the pop.com site. According to DreamWorks' Jeffrey Katzenberg, even though it had a very strong financial backing, the company understood that there were not enough people willing to pay for their content and that the high operating costs, estimated at $2.25 million a month, "would probably be thrown away" (HollyWeb Flops, 2000).

Technological Issues

Video content takes a long time to download. In January 2000, Miramax's "Gunivere" was the first Hollywood movie to be offered online as a download in a legal, nonpirated way. The download time, through a DSL connection, was 1 hour and 14 minutes (Tristam, 2001). A new initiative of five Hollywood studios (MGM, Paramount, Sony, Universal, and Warner Brothers) provides on-demand access to their films and promises a shorter download time of 20 to 40 minutes per film (Umstead, 2001). In addition, the quality of the stream available to an individual user can be negatively affected by other users' requesting the same content simultaneously. This usually leads to poor quality video, as well as net congestion and delays that turn the viewing experience into a disappointing one. Users accustomed to viewing video on a television or movie screen, neither of which crash, stall, or take long minutes to download, find this hard to accept. Companies seek to overcome these problems by providing technology that ensures that only the highest quality streams reach their audiences. Akamai's "Steadystream" (www. akamai.com), for example, handles the quality of live broadcasts by sending multiple copies of the video to the edges of the network, closer to the viewer, to ensure that a good quality video stream reaches the viewer.

Poor Fit Between Content and Audience

One of the main questions for Internet content creation is audience behavior. Many content providers failed to determine in advance whether their target audience was interested in viewing entertainment content on a PC instead of on a television or a movie screen. Perhaps other forms of content, such as news and business information, would be more suitable for

the web. In 2000, 72% of broadband users had this access at their workplace, 8% were at a school or in a library, and only 20% had broadband at home (Carey, 2001b). It seems that entertainment might not have been the optimal form of content for an audience at work that cannot devote long periods of time to viewing video content. Much of the early video content on the web, including *Froggy in the Blender* and *Bikini Bandits*,[4] which appealed to the young 18- to 25-year-old male audience, did not cater to the mass business audience or the growing numbers (from 14% in 1994 to 51.4% in 2001) of female viewers (Carey, 2001a). As a comparison, financial news sites like Bloomberg.com, which target the workforce with financial information, as well as MSNBC.com and CNN.com that provide news stories for both the home and working audience, are reporting steadily growing traffic.

Costs Per Production

Streaming video is available today through several vendors, including RealPlayer, Apple Quick Time, and Microsoft Windows Media Player. All three players are offered as free downloads or bundled with consumer software. The situation is different for the content provider. Streaming Internet television content is currently more expensive than delivering similar content by cable or satellite (Waterman, 2000). In addition to fixed capital costs for encoding and storing video, there is also a high variable cost. In broadcast, costs are on a per program basis, so the more viewers you get the more money you make. Internet transmission is the opposite. The more people who view a program, the more expensive it gets for the content provider. The cost for the content provider can be divided into three areas: hosting the content, streaming the content, and the cost of broadband. Hosting and encoding are a fixed cost. The more content hosted and encoded, the larger its file size and the more the content provider will pay the Internet service provider (ISP). A 3-hour movie costs more to host and encode than a 1-hour movie. But once a certain size is determined, these costs are fixed and remain the same whether 10 or 100 people view the program. The variable costs are for streaming and bandwidth. Although revenue deals vary, the rate is determined per stream, so the more streams requested the more expensive it gets. The cost of the bandwidth will grow according to the number of users as well. This creates an ironic situation because the more successful in terms of the number of viewers the Web site is, the less profit it makes. For example, live broadcasts that are popular with Internet audiences are usually not commercially viable. While advertisers pay to be part of a successful Web site, the fixed cost of the advertisement does not grow according to the number of users. In contrast, the provider's costs continue

[4]Available through ATOM Films. www.atomfilms.com

to increase as their audience grows. Although advertisers do not pay per user, streaming content providers do. This does not mean live broadcasts do not exist. Microsoft Network (MSN) picked up the tab for Madonna's half-hour web show, which was streamed in November 1999, and generated nine million streams. MSN rationalized that the publicity generated was worth the expense and was balanced by their not being required to pay for the concert rights (Lassiter, 2001).

SURVIVING THE FALL

> "I am an optimist and I want to believe some of these companies will break out. The odds are slim, but I'm still hopeful, which is what makes it fun"
> —Kenneth Wong, CEO of the former pop.com

Despite the bumps and hurdles along the way, the Internet TV landscape continues to develop. Companies have learned from previous mistakes and are developing new models to get them through this period. Companies that have strong financial backing and branding, including the networks and established Hollywood production companies (e.g., Bloomberg, CNN, and Sony), could afford to absorb the loss from their web divisions and were less affected by the Internet downturn. There are several characteristic approaches taken by companies that managed to stay in the game. Some chose to focus on a single approach and others combined several as a survival strategy. Some companies were able to diversify the high cost of producing content solely for the Internet by creating content that could be used on several platforms, and thereby were able to generate additional revenues. The other platforms include television, video, PDAs, and wireless devices. Other companies reverted to providing content through narrowband dial-up connections.[5] Most news sites offer both narrow and broadband options for accessing video. Still others, understanding the limitations and advantages of the Internet, revised their business models, including their programming, promotion, and transmission solutions to better fit the audience and cut bandwidth and streaming costs. This allowed them to rely less heavily on advertisers and investors. These companies turned to licensing and distribution deals, subscription or premium pay services, and innovative advertising models. Of course, finding the content that people will pay for remains one of the main challenges facing the industry.

Companies Adapted to Changes in Their Environment

Nascar.com decided to branch out from a sports-only site to an entertainment site in order to create a "buzz" and attract a new entertainment audi-

[5]According to a Jupiter Report, two thirds of Internet users will still be using dial-up connections in 2005. See Tristam, 2001.

ence. In the near future, the site will offer a weekly 3-minute-long cartoon, by the creators of *The Simpsons,* that will pay homage to Nascar. As a revenue generating advertising model, product placement will be used throughout the cartoon. Nascar will also explore a new model for unique premium content in which the customer experiences the illusion of participating in a real race by following, on their PC screen, a video camera installed in the race car itself. Promotion will be done over both the TV and the Internet, with heavy promotion from AOL.[6]

Interactive television (INTV) (www.intv.tv) and icebox.com provide examples of two entertainment Internet startups that were forced to close and have now revised their business models in preparation for relaunch. INTV bought former pseudo.com, including its content, for $1.8 million in January 2001. The investment was recovered by selling hundreds of computers and renting out the former Pseudo facilities (including its television studio). In order to cut down costs, staff was drastically cut from 200 to 5. College interns and volunteers are filling vacant positions. In order not to rely on outside investors and advertisers to keep the company running, INTV is now adopting a new subscription revenue model. Along with content that will be offered for free, access to the popular Pseudo content will be available for a monthly subscription of approximately $5. New shows cater to a 15- to 30-year-old New York–based audience and include a version of *American Bandstand* streamed live from the Wetlands club in New York City. They are seeking to recapture their female audience by bringing back Pseudo's *Cherry Bomb,* a show produced for women by women. Programming will take into consideration the "at work" audience, which peaks during lunch hour. In order to cut down the broadband and streaming costs, INTV is working with partners to close deals with streaming vendors that have bandwidth surpluses. Instead of spending money in advance, they plan to grow slowly as the industry evolves.[7]

Icebox.com was founded by successful television writers who felt frustrated in the TV process with their lack of control over the final product. They thought the Internet would be a great platform to create cheaper animated shows that could eventually be migrated to the television. Series such as *Mr. Wong,* which garnered three million viewings of a particular episode, proved very successful. They were able to break even by using flash animation and other techniques to keep their file sizes small, providing a higher quality user experience on low speed connections. Despite their relative success, Icebox was forced to shut down in February 2001 because advertisers and investors pulled out of the Internet. Like INTV, they reduced their

[6]Personal communication with Peter Scott, Senior Director of Multi Media Content for Nascar.com, Interview, August 9, 2001.

[7]Personal communication with Edward Salzano, CEO/CTO INTV Inc., Interview, August 22, 2001.

staff, sold assets to pay debts, and decided not to rely on advertisers. They relaunched the company on May 16, 2001. Icebox no longer produces content without a sponsor or production partner. In addition, they are initiating an on-demand model requesting users to pay from 25 to 50 cents per show. They believe this VOD model will keep the site running and have posted an official explanation for these changes on their Web site. Icebox intends to focus on the development and exploitation of their content and believes that revenue will come from production and development deals as well as the online and offline syndication of their web content, such as their syndication deal with Mondo Media. Because the animation produced is in small files, it can be licensed and delivered on other platforms including wireless devices, video, DVD, and broadcast television.[8]

Heavy.com offers a mix of alternative music and humorous video clips as both free and premium content. The premium content is available for $7 a month or a $50 annual fee. The site is not necessarily intended to be profitable; it is viewed as a way to broadcast television over the Internet without a broadcast license and a distribution network. The intent is that this content would later be broadcast on television to generate more revenue.[9]

Romp.com, which targets male audiences, gave the subscription model a try at $34.95 a year, but decided it was not sufficiently successful. They plan to refund all their subscribers and change their business model. Romp.com now plans to develop branded film and print objects, stop updating content daily, and release new shows periodically.[10]

AtomFilms is in the short film distribution business and not necessarily the Internet streaming business. In fact, 60% of their revenue comes from selling shorts to airlines and shopping malls. They also signed a $1 million distribution deal with Blockbuster.com. Atom Films has deals to air short films in hotel rooms and wireless devices from companies, including Compaq, Sanyo, and Texas Instruments (HollyWeb Flops, 2000). In January 2001, AtomFilms and Shockwave.com, which features interactive games, merged. The two companies intended to build vast online entertainment content that, due to the dot-com decline, was postponed. They also cut their staff from 180 to 30 employees and in May 2001 announced a pay to play initiative featuring two online games packages at $19.95 and $29.95 (Olsen, 2001). MediaTrip signed a distribution arrangement with Amazon.com and sold their successful short film *George Lucas in Love* (a parody of *Shakespeare in Love*) through the retail outlets Tower and Blockbuster. By January 2001, Amazon had sold 20,000 tapes for $7.99 (DVDs are available for $12.99) and 25,000 more have been bought in stores (Hart, 2001).

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[8]Personal communication with Tal Vigdersom, Managing Director of Icebox.com, Interview, August 17, 2001.

[9]Assad Simon, cofounder of Heavy.com (see Tristam, 2001).

[10]Information available on Web site, www.romp.com

Many companies are working on deals to sell Hollywood studios the rights to their content. One of the biggest deals is the $2 million that Universal Studios Inc. paid UrbanEntertainment.com (www.urbanentertainment.com), a site that caters to the African American market for the movie rights to the animated short *Undercover Brother* (HollyWeb Flops, 2000).

Even companies with strong financial backing are developing new business models. MSNBC.com started to stream video as early as 1998. To cut production costs, materials left on the cutting room floor at NBC and MSNBC cable were used for the site. Because half of the MSNBC.com audience is at work and the other half logs on from home, the site offers both broadband and dial-up options. To keep costs down, MSNBC does not stream high resolution video. In addition, they are planning to branch out to PDAs and wireless devices. MSNBC.com will be launching a video player that will allow advertising links from banners, as well as a play list that enables the viewers to select additional videos.[11]

SELECTING SUITABLE CONTENT

> "Why do things on the Web if it's just like watching a TV show?"
> —David Wertheimer, President of Wirebreak.com

Providing suitable content given the limitations of the web is not an easy task. Content needs to be innovative, compelling, and suitable for a PC screen as well as have the ability to create a connection that will bring users back to the site. The majority of the audience is at the workplace, so short content, under 15-minute segments might be suitable.[12] Sites that provide news content to mass audiences that are not necessarily early technology adopters might provide for both high and low speed connectivity.

Animation may work better than video because it can be less expensive to produce and, as the files are smaller, it can be streamed more efficiently over both narrow and broadband lines. Animation works well on many platforms, so it is easy to localize and redistribute. Interactivity and nonlinearity work best for Internet TV content. It is therefore likely to appeal to a "lean in" crowd, characterized as an active one-on-one personal experience associated with a computer in contrast to a "lean back" passive audience associated with television viewing. Broadband is very important for this content form. Low quality video and slow connections hamper the quality of most sites that stream video.

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[11]Personal communication with Michael Silberman, Executive Director MSNBC, Interview, August 24, 2001.

[12]34"405", a short, 3-minute film created on home computers by Bruce Branit and Jeremy Hunt, is a great example. Available on ifilms.com

Entertainment

Most of the innovative Internet TV content will continue to come from the entertainment sector. One interesting entertainment site that takes advantage of the Internet's capabilities is Sony Screenblast (www.screenblast.com), an extensive broadband entertainment portal for films and music buffs. With this site, Sony seeks to strengthen its two-way relationship with the audience and to get them more involved. Sony's goal and revenue model is to provide the audience with sufficiently compelling content to stimulate software sales and subscriptions. They also intend to attract integrated advertising through personalization and customization. The site caters to the 18- to 24-year-old audience, providing tutorials and instructions on how to create feature films, including special effects, that can be uploaded to their friends or a Sony producer for feedback. Whereas the free membership allows the user 50 Mb of storage space, six editing tools and free trials, a full deluxe set of these of tools is offered for $169 and can be purchased separately. The strategy is to build long-term relationships with customers that will come back for additional tools, instructions, and feedback. As for developing content on other platforms, Sony is waiting to learn what kind of entertainment experience belongs on each platform.[13]

Internet TV entertainment may become intertwined with advertising and commerce becoming advertising-sponsored content. BMWfilms (www.bmwfilms.com) provides an interesting example of using entertainment for advertising. BMW research shows that 85% of their consumers go online before making a purchase and because they were interested in creating a new and different branding campaign, BMW decided to use the Internet. In April 2001, they launched a site that features five short films, less than 7 minutes each, directed by intriguing names such as Guy Ritchie, featuring his wife Madonna, and Ang Lee. All films star a BMW car and are shot at cinematic quality using 35 mm film and high production standards. The concept was pitched to the directors as an opportunity to make quality entertainment for the Internet with complete artistic freedom. The films are offered in both broadband and dial-up versions and are promoted through traditional broadcast commercials and Internet shorts sites. BMWfilms has been approached by TiVo to offer its viewers broadcast quality versions of the films on their television sets. There is no known direct link between the launching of the site and an increase in BMW sales. But the fact that users who log on, disclose information, and may choose to be contacted combined with the great buzz BMW is receiving, looks like successful advertising.[14]

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[13]Personal communication with Andrew Schneider, Senior Vice President for Broadband Content, Sony Pictures Digital Entertainment, Interview, August 24, 2001.

[14]Personal communication with Karen Vonder-Meulen, Marketing & Events Communications Manager, BMW, Interview, August 22, 2001.

News and Sports

News stories are relatively short and their audience seems to be more forgiving when it comes to the quality of news-oriented video content streamed over a dial-up connection. News is a natural for interactivity and has a market of interested viewers who gain the prerogative of receiving news and updates at their convenience. News sites are reporting a steady increase in audience. According to Bloomberg statistics, for example, users are staying an average of 36 minutes on the site.[15] Breaking news, is the most popular content and the biggest in terms of video streams for MSNBC.com. The day of the Seattle earthquake, the site sent 1.5 million streams on demand. This is close to a cable size audience. Hourly updates of video news clips and web exclusive video headlines are also very popular because news can change hour by hour. On average, MSNBC handles 200,000 streams per day and offers content in both broadband and narrowband versions.[16] The Feedroom reports 2.5 million streams a month. They found that streamed local news on the site added a new predominantly male audience that logged on from work.[17] These viewers, added to their female homemaker-based audience, made the site appealing to advertisers.[18]

Some Internet TV models provide interactivity and a community around sports. Sports fans are a loyal audience more likely to pay for additional content. NBA Entertainment (www.NBA.com), for example, has become one of the most popular sports sites, averaging more than 800,000 daily visitors throughout the NBA finals 2000. The site offers access to all 29 of the team's Web sites and an NBA store. In addition, it has interactive features such as custom headlines of favorite teams or the option to create individualized packages of video and audio clips (Kaufman, 2001).

Children's Programming

Children are becoming a natural audience for interactivity because they are accustomed to it from a very young age. HBO's *The Deadwood Mys-*

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[15]Personal communication with Michelle O'Brien, Head of ITV&BB Division, Bloomberg.Com, Interview, August 20, 2001.

[16]Personal communication with Michael Silberman, Executive Director MSNBC, Interview, August 20, 2001.

[17]The numbers provided in this chapter changed after September 11, 2001. In a later interview, Silberman added that during September 11, MSNBC had record traffic of approximately 12 million unique visitors to the MSNBC site. The video traffic that day was also a record—approximately 6.3 million live streams and another 5.75 million on-demand video streams were requested.

[18]Personal communication with G. Gooder, Manager Business Development/The FeedRoom, Interview, August 14, 2001.

teries (www.hbofamily.com/deadwood) is a 16-episode series that debuted on July 16, 2001, and ran through Halloween. It was one of the first original children's programs created for the web. Situated in Deadwood, Oregon, the series focused on the search for Jessica Fischer, who mysteriously disappeared on her 16th birthday. Jessica's sister Rachel and three friends tried to solve the mystery with the help of the home users. Each Monday a new episode with videos of the characters, clues, evidence, reports, and links to FBI files aired, and children were able to send in their thoughts via e-mail. Every few weeks, an online chat brought together the avid followers of the series. The program aired, despite the crash of the dot-com market, because funds for it had already been committed, and the HBO producers are happy with the results. It took the team 4 months to transform the concept, created by television producer Andre Mika, from the passivity of television broadcasting to the interactivity of the Internet. This included cutting down the original proposal from 13 clips per episode to 3 or 4, and to making full use of multimedia. The intended age group was 10- to 14-year-olds. Even though it is hard tracking user information on children, HBO research shows that, on average, kids stay online for five hours and keep coming back. The site has already created a sense of community and a fan club has been created in Staten Island. It seems that children crave this kind of interactivity.[19]

Information-Based Shows

Information-based programs, such as documentaries, work well with web enhancements because the Internet gives viewers the option to pause a show and look for complementary information. Public television, a natural home for this form of broadcasting, is providing pioneering content. WGBH, the Boston-based PBS station, is working on an interactive documentary named *The Commanding Heights* to be aired in April 2001. The show producers, Howard Cutler, Frontline producer Mike Sullivan, and Pulitzer prize winner Dan Yurgen have decided to create a parallel production from ground level, which is a collaboration between television and web producers. This means shooting on site will be planned in advance for both the TV program and web enhancements, a production method that is both efficient and cost effective. The entire show will be streamed via broadband. There will be a window of about a month to stream a show to allow PBS to sell the video after it airs.[20]

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[19]Personal communication with Lynne Eyberg, Co-executive in Charge of Production; and Noa Morag, Web Producer, HBO Family, Interview, August 9, 2001.

[20]Personal communication with Curtis Wong, Manager, Microsoft Research, Interview, August 20, 2001.

Education and Training

Many educational organizations—including universities, forums, and training programs—offer content on the Internet. More and more sites provide a video component of the lesson itself. Distance learning is becoming a popular option for accessing course information unconstrained by geography and schedules. Education seems to be a natural use of the web, because the interactivity is ideal for guiding users, teachers, and students, through content as well as creating learning communities. The site "e-school online," for example, created by ACTV, a New York–based creator of proprietary and patented software tools, instructs grade school teachers on how to teach reading. Because not all schools have the bandwidth needed for streaming, the same content is distributed both by video stream and by CD-ROM.[21] The NASA Education program (www.education.nasa.gov) is a gateway to a wide variety of NASA Web sites for teachers and students. This content model can work in both an educational and business environment. It is expensive for people to leave their offices to attend classes, so training on the web is often a good solution for companies and corporations. It allows them to both cut costs and enhance the work environment.

Corporate Communications

It is common for corporations to have a video communication department that creates content for the internal use of the company, including business meetings, and may provide educational and instructional videos. Some independent dot-coms, such as the FeedRoom, provide companies with an option to outsource content of this sort. The Feedroom receives tapes from a company and adds metadata links and text to create a streaming asset available to the company's employees, the media, or investors.[22] Companies like Cisco provide services that split streams, allowing them to reach more people. This allows companies to cost effectively send one broadcast stream to thousands.[23]

Many believe that the future of Internet TV content lies in the business sector and the ability to webcast announcements over private corporate intranets, accessible to employees, investors, customers, and the press. According to Blake Hayunga, CEO of Street fusion, webcasts have more than doubled in the past year. Webcasting is cheaper than a dial-in confer-

[21]Personal communication with Craig Ullman, Chief Creative Officer, ACTV, Interview, August 26, 2001.

[22]Personal communication with G. Gooder, Manager Business Development, The FeedRoom, Interview, August 14, 2001.

[23]Personal communication with Frank Scibilia, Product Manager, Cisco Systems, Interview, August 23, 2001.

ence call. Pricing ranges from $1,000 for an audio stream to $8,000 for a video stream. Ten annual webcasts cost roughly the same as one dial-in conference call. At approximately 30 cents a person per minute, conference calls in which large numbers of people participate become expensive (Arora, 2001).

Pornography and Games

Pornography and games are two very substantial topics, too large to discuss in confines of this chapter. In passing, however, it should be mentioned that pornography is the largest revenue generating content on the web today and even "soft" sites such as naked news.com are offered on a paying basis.

Providing video on the Internet for games played on television may contribute to an increase in broadband penetration and Internet TV content,[24] but because this is only speculation it also falls outside the scope of this discussion.

THE FUTURE OF INTERNET TV

Changing people's viewing habits is hard to do. It takes time to understand the characteristics of a new medium and create exciting content for it (Carey, 2001b). Views about the future of Internet TV range from pessimists, arguing both that broadband is not yet here and the web is not suitable for broadcasting video, to optimists that argue that Internet infrastructure is the most suitable for VOD and interactive content. The Internet is growing by at least 85 million users per year. Webcast content reaches more than 50% of these users and should reach about 475 million users by the end of 2001 (MRG Multimedia Research, 2001, and Arbitron and Edison Media Research, 2001). Harris Interactive Research found that the number of U.S. households with broadband connections grew by 41% between April 2000 and January 2001, and cable modem services only increased about 10% in that same time period (Stanfield, 2001). There are 350 million secure Windows media players that have been distributed, and 215 million Realplayer users worldwide.[25] Reports show that video streaming on the net grew 215% in 2000 to over 900 million streams (DFC, 2001a).

Will Internet TV Be Profitable?

There is a general consensus that unless some fundamental shift occurs and people begin to pay for the content, Internet TV will never be profitable. As the

[24]Personal communication with Rob Davis, Executive Producer *SpiderDance,* Interview, August 16, 2001.

[25]Based on information given by both company's sales and marketing department.

number of broadband users and streams continue to grow, with an average of 1.2 video advertising opportunities per stream (DFC, 2001b), advertisers are beginning to take notice. This may lead to a change from the old advertising model of buttons and banners to a new targeted advertising model that can provide a solution for advertisers that are losing their broadcast audience. Inserting "in show" commercials before webisodes, instant online purchases of products, and the promotion of companies through entertainment, such as BMW Films, may prove suitable for Internet TV. The return to the 1950s model sponsored shows and segments may also work. Using Hollywood content available for syndication and international distribution may prove an important source of revenue as well (Waterman, 2000). Small niche markets, such as travelers, independent filmmakers, and other special interest groups might pay for content that is not otherwise available.

Although it is hard to pinpoint the number of users needed to justify the investment, some number of people may be willing to pay small amounts for compelling content. There are already examples of paying models that work. The WWF (World Wide Film) site directs viewers from their cable pay per view events to the Internet, where viewers can continue to watch and pay. House of Blues (www.hob.com) charges $4.99 for high quality live festivals and iLive.com offers pay-per-view shows for $1.00 to $3.00 per show. In order to create an incentive for users to tell family and friends about the shows and to build a wider base of paying users, iLive.com offers users 25% of the revenue made from the shows their friends decide to watch. Real Goldpass offers a $9.95 monthly membership that allows access to premium content such as 24/7 live coverage of CBS's *Big Brother* house, ABC's Connie Chung's interview with Gary Condit, and adult content such as *Bikini Fever*. Real Goldpass reports more than 300,000 paying subscribers. This might not be a large number, but it may mean that cracks are beginning to appear in the general perception that all content on the Internet should be free. Still there are those in the industry that believe that until the technology provides better quality streaming, many customers will refuse to pay. Only time will tell which direction the pay model might take. If the cost of broadband and streaming goes down, the current billing model of pay per stream changes, and the number of broadband users goes up, then Internet TV content providers may succeed.

According to Professor V. Michael Bove[26], "People tend to confuse a delivery mechanism with an audience and in the long run there will be no distinction." In the future, the distinction between Internet TV and interactive television may blur. As a result, content and revenue models may do so as well. Whereas some of the less popular channels on cable might move to the Internet, streamed content can find its way to the television screen with no recognizable visual difference.

[26]Personal communication with Professor V. Michael Bove, Object Based Media Lab, MIT, July 7, 2001.

The Radon video card by ATI technologies and Sony's Vail Digital studio are two new products in the works that will enable viewers to watch TV via their PCs. Companies like INTV are building on the ability to view IPTV, TV, cable, and video on a PC, which is their preferred future content and delivery platform. In general, most content providers are interested in migrating their content to a one screen experience. This means viewing and interacting with content on a television screen. Interesting steps are being taken in this direction with the deployment of the Cablevision set-top box and the joint Comcast and Scientific Atlanta VOD service. Currently, the technology and deployment of set-top boxes tends to be more costly and less robust than the Internet, but Internet TV programs are providing a learning ground for future one screen interactivity.

CONCLUSIONS

The question of how Internet TV will fit into the overall television landscape in the future is both intriguing and of importance to the media industry. Lessons learned include the importance of broadband, recognizing and targeting potential audiences, and the necessity of suitable content and business models. Innovative Internet TV content that employs creativity and versatility will benefit from increased broadband penetration. Entertainment dot-coms have cut staff and production costs and are waiting for the technology to catch up. In order to ease the need to rely on advertisers and investors, new revenue models for on-demand content, premium services, and subscriptions are being implemented. Advertising, meanwhile, is moving toward a branding and sponsorship model.

The number of broadband users is growing slowly but steadily and potential audiences are showing interest in both existing and new streaming content. Internet TV may prove an alternative mode of broadcasting for independent content creators that have too small an audience for broadcast. Independents may capture the lost TV audience that has turned to the web.

Internet TV differs from traditional TV, so content and business models should be adjusted accordingly. Two main challenges for Internet TV are to change traditional television viewing habits and to convince viewers to pay for Internet TV content as they do now for cable and satellite programs. Understanding the intended audience and creating compelling, interactive, exclusive content can drive these changes. Creating content deployable on multiple platforms can diversify production costs and increase revenue channels until the costs for broadband and streaming come down. It is anticipated that interactive programming will migrate to a one-screen television experience, combining the interactive capabilities of the Internet with the viewing experience of television.

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