The Modern Television Network War:

Online Streaming

Introduction

As advertising dollars and TV watchers migrate to an online format, the four major TV networks have begun to position themselves for the new medium. We present an overview of the current competitive landscape and present a few strategies that ABC could pursue.

Background

The Changing Network Television Battlefront

The battleground of television network companies has always been a unique one. They fight with TV series, sitcoms, and news programs that attract viewers rather than products that they directly sell to consumers. The source of revenue is advertisement time interspersed within programs, with the cost of an ad segment determined by how popular the show is. Thus, the product is advertising time sold to advertisers, but this is only half the story—as a second product, shows are marketed to viewers for free.

The role of the television networks may be changing now that full episodes can be streamed online. Many households in the United States now own a computer and a fast internet connection, necessary components for online streaming. One advantage of online streaming is that users can stream any episode on demand. Thus, many users currently use online streaming as a complement to conventional TV in order to catch missed episodes. In addition, some viewers have begun to use online streaming as a replacement for conventional TV. Online streaming that replaces conventional TV has the potential of removing the networks' role since start-ups could take the role of streaming TV shows online.

Personalized advertisements

Another advantage of online streaming is the ease of delivering personalized advertisements. Conventional television can only target viewers based on location, time, and the type of show watched.

On the internet, advertisements usually take the form of flashing animated (sometimes even interactive) banners interspersed about websites. However, Google changed everything with a context-sensitive advertisement system that uses the user's input into their search engine to select relevant advertisements for display. This type of advertisement space is considerably more expensive because users are much more likely to click on an advertisement related to something they are actively searching for. Yahoo's advertising service, SmartAds, also selectively displays advertisements, but uses behavioral, demographic, and geographic information from account registration information to match advertiser with potential customer. They report that their testing shows that personalized advertisements generate two to three times more clicks than normal banners.

We envision the video ads displayed during online streaming to use personalization systems to achieve higher ad rates. Thus, the networks could potentially generate equivalent ad revenue from conventional TV with less ad time. The networks currently stream about four 30-second video ad segments interspersed in 40-minutes of show time.

The American Broadcast Company, ABC

Since ABC was created from NBC Blue in 1943, ABC was the little sister to her two big brothers in the three major television network companies in terms of viewership, once in awhile rising to the top even after Fox changed the major three to four. Today, facing the opponent network companies, CBS, NBC, and Fox, its ratings are the second highest thanks to popular primetime shows like *Desperate Housewives*, *Lost*, and *Grey's Anatomy*. ABC currently offers several shows for online streaming from their homepage with some capable of being streamed in high definition as well. Although ABC currently does not have any major partnerships related to online streaming, it is streaming shows through minor sites such as AOL Video.

Six Forces Analysis

ABC's current situation with regard to full online streaming shows may be analyzed according to Porter's Five (Six) Forces:

1. **New Entrants:** Because the scale of television network companies is very large compared to the industry, new entrants tended to be uncommon. Although Fox Broadcasting Company succeeded as an entrant in 1986, the industry was thought to be saturated then and is surely even more saturated now. The emergence of yet another network company is hard to imagine. However, with the advent of online streaming, we can envision a startup website replacing the role of the networks, licensing with producers for the right to stream shows online. This situation is analogous to the development of cable television, which splintered off the audience from network television.
2. **Content Producers' Bargaining Power (Supplier):** The content producers generally have little bargaining power since there are only four big networks and each network is limited in the primetime space available for airing shows. On the other hand, the development of online streaming could greatly aid content producers since the amount of shows that could be aired could be greatly increased (since primetime airtime will no longer be a limiting factor).
3. **Viewers' Bargaining Power:** In the short run, viewers have little bargaining power when a network has a hit show. For example, a viewer in the middle of *Lost* has no choice but to stick it out, even if ABC were to place large amounts of ads. In the long run, however, viewers may choose to start watching a show from a different network if one network becomes too burdensome with its ads. Thus, viewers can substitute the different networks in the long run, although the networks have a degree of lock-in for a few years when they have a hit show.
4. **Advertisers' Bargaining Power:** Bargaining power varies with show popularity. The network has considerable bargaining power when a show is popular. Because there are only a handful of successful shows, supply of high-exposure advertising space is low. In addition, viewers will want to see the particular show, and because it is unique, there is only one supplier.
5. **Substitute Products:**
   A) *Programming:* Because shows are unique, they are not very substitutable in the short term. However, the *source* is substitutable as illegal methods of obtaining shows are available. Therefore, networks can only increase the amount of advertising until people begin to resort to illegal downloads to avoid advertisement.

B) *Advertisement space:* This comes in a continuum of prices and corresponding amounts of exposure. It is also characterized by the particular demographics associated with the show it appears in. Advertisement time is substitutable with time in similar programs with similar prices and demographics.

6. **Rivalry:** The networks are rivals with each other, trying to carry the next best show. Although companies other than the CBS, Fox, and NBC might be considered rivals, we do not treat them as such here. Youtube is not considered a rival in our report because it is not currently legal for Youtube to stream full-length episodes or movies. We also do not consider channels such as HBO as rivals, since they do not cater to a general audience.
7. **Complements:** The growing availability of powerful personal computers at low prices and high-speed broadband access will encourage the adoption of online streaming. Another complement would be a good user interface for viewers to find their favorite shows. For example, a website with all of ABC's shows in one place may be considered a synergy that introduces viewers to network shows other than their favorites. Another complement is broadcasting of shows that are also streamed.

The Future of Television

In order to form business strategies, we require not only knowledge of the present, but also predictions of the future. In order to envision the future of television, we look to the consumer for guidance.

In the three-player game that the networks, advertisers, and viewers play, the viewers form the foundation. The networks rely on viewers to create the worth of their advertising space. The advertisers rely on viewers to buy their products and on the networks to disseminate information. The viewers depend on the networks for entertainment, but their survival does not hang in the balance. As technology caters to the convenience of such consumers, we should ask ourselves, "What would be convenient for the consumer?" because we can expect industry trends to move towards increasing convenience to the consumer in the long-term. Although the present can move towards consumer convenience in an infinite number of possible directions, we seek a likely direction based on how much work on a grand scale it would take to move from the present state to a predicted state.

One scenario that seems to be quite likely is one in which many households will adopt a true central media center (small form-factor specialized computer that is specifically marketed for this use) that plays optical media, streams online video, connects to all types of TV sets, and is backward-compatible with existing TV (equipped with HD and TV tuner). Current "media centers" are not very specialized and would be unable to replace equipment in the living room—this is key to the definition of the envisioned media center. An integrated machine is more convenient for the user because it requires less space than individual players and no interconnections. Such a machine would eliminate the need for separate optical media players and HD tuners. It would be controlled with a remote just as existing systems are (albeit current setups are often controlled by multiple remotes) and corresponding software would be very easy to implement. Streamlined software can be implemented to maximize both convenience and ease of use in comparison to current standards. Most importantly, it would bring on-demand video from the internet to the living room with a click of a button. Connecting digital broadcasting with the internet is an easy conclusion to arrive at. Traditional analog broadcast will soon be phased out, and this alone is an indicator that times are changing. Moreover, full resolution HD content is still too high-bandwidth to stream. Online streaming is blossoming as an on-demand source of television news and episode reruns. The media center would eliminate the need to go to the computer for on-demand reruns, increase the quality of non-HD programming (online streams are of much higher resolution than that of analog broadcasts), and allow for HD content. The internet is an extremely versatile pipeline into the household that already exists and only needs to be tapped.

Furthermore, no one would be left out in a world of media center computers. Before analog broadcast is phased out, machines can easily be equipped with TV tuners. Those with analog TV sets can use analog outputs from the video card. The idea of a true media center has no barrier against full market penetration except at the very lowest cost end where users are willing to forego many of the main functions and advantages. It would achieve maximum penetration with people who seek multiple functions.

Of course, we must consider the cost of such convenience from the perspectives of both consumer and producer. The most demanding function one can ask of a media center in the foreseeable future is to play full resolution HD video. Currently, even the economy desktop video cards on the economy CPUs are capable of playing 1080p full resolution HD video. In fact, there are already video cards specifically designed to handle high-bandwidth media, which takes considerable load off the CPU. Because relatively inexpensive existing hardware can handle even the most demanding function, such a media center is easily realizable. We can gain a feeling for what a media center would cost by analyzing the cost of necessary components. (See appendix for estimates) Judging from the cost of building a custom PC from retail parts, the price a consumer would face might be a little more than $500 after taking labor, economies of scale, etc into account. (However, if the most current processors are used, as the trend seems to be, then the cost will be of course much higher. However, it is clear that such processing power is unnecessary.) From the producer's perspective, the design can be expected to be even more profitable because it combines many groups of potential buyers into one: DVD player buyers, Blu-ray player buyers, HD tuner buyers, computer buyers, as well as new breeds of buyers seeking the design's new functionality and convenience. From the networks' point of view, the value of their online advertising space would increase along with exposure.

Strategy

Teaming up with Hulu.com and strengthening all networks

NBC and Fox have teamed up together to launch a startup called Hulu, which streams both TV shows and movies provided by the supporting studios. So far, ABC and CBS have held out from the Hulu venture and do not provide their content to Hulu. Thus, ABC has the option of providing its shows to Hulu in exchange for a cut of the advertising revenue and other provisions.

Hulu aims to become the source for all studio-produced online video. Kevin McGurn, Vice President of national sales at Hulu, notes that "the design of Hulu—stark and minimalist—is more akin to Google's interface"[1]. Hulu is currently in the process of indexing non-homemade video content on the

Internet, even providing direct links to videos not currently provided on Hulu. Hulu also allows users to embed Hulu content on their own sites. The embedded videos still show ads and are clearly marked as coming from Hulu.

Last May, Hulu also received $100 million from Providence Equity Partners for a 10% stake[2]. Hulu's viewership has recently surpassed even ABC's. In April of this year, 63.2 million videos were streamed from Hulu or partners, with users averaging 129.3 minutes of Hulu-provided videos that month. At ABC.com, users watched 60.8 million videos with users only averaging 57.3 minutes.

It would be in the interest of all the networks to form one common front-end such as a video portal for viewers because viewers generally differentiate between shows far more than they differentiate between networks. This is not only because the four networks appear to be similar, but also because they all perform the same functions and do not differentiate themselves from each other except with shows. If ABC were to provide its content to Hulu, Hulu's position as a portal for video would be strengthened. In particular, CBS would be compelled to also provide its content to Hulu. Quincy Smith, president of CBS Interactive, stated, "CBS's strategy is to pursue open, multi-partner, nonexclusive relationships with established video destinations, widgets, and application vendor companies, as well as regular syndicators"[3]. Smith summarized that CBS will "take it to where the eyeballs are." With ABC's content added to Hulu's offerings, Hulu will become a dominant video portal, further satisfying CBS' criteria of being an established destination.

ABC supporting Hulu's position as a video portal could be beneficial for ABC since Hulu would become the online equivalent of channel surfing. Viewers not set on a particular show would browse Hulu's archive and then choose whatever they were in the mood for. Thus, users not familiar with some of ABC's shows could be exposed to some shows they might actually find interesting. In addition, viewers who do not own a TV and normally download video files via BitTorrent or similar means may find Hulu's portal-like interface more convenient than downloading. Thus, ABC and Hulu would now have the opportunity to sell ad time on videos that would normally have been downloaded without compensation to the owner.

In addition, Hulu could do a better job of targeting personalized ads than ABC since currently ABC has no mechanism for users to log-in. Thus, ABC can only target ads based on the current video being played (or during the current session), while Hulu can track all videos that a user has played. And since Hulu would become a portal where users would stick around to watch all manners of videos, Hulu could build an extensive database to describe users in detail. Perhaps more valuable is that Hulu could track which ads a user clicked on and interacted with. Even if ABC must split some of the ad revenue with Hulu, the increased value of more personalized ads may mean that ABC could make more money from ads shown on Hulu than on ABC's own site.

The clear downside to supporting Hulu is that many of the benefits to ABC are symmetric and could help the other networks. For example, a user going to Hulu to watch the latest episode of *Lost* may learn of a new show on Fox and decide to start watching that. The most serious concern is that the relationship would appear to benefit News Corp. and NBC disproportionately since they own equity stakes in the company. Thus, if Hulu were to have a large market capitalization, News Corp. and NBC would gain monetarily while ABC would not. Also disconcerting is that Fox and NBC's ownership may give them more access to influence Hulu. For example, they may demand more prominent placement for their shows compared to shows from ABC and CBS. If ABC and CBS were to provide content to Hulu, they should demand ownership equivalent to Fox and NBC. More importantly, they should establish a protocol so that one network could not unfairly influence Hulu.

By making Hulu the established video portal for premium (i.e., not homemade) content and ensuring that Hulu remains neutral territory, ABC's support of Hulu would make it difficult for other premium video startups to thrive. Analogous to Google's current domination in online search, users would recognize that Hulu is the first location to go to when searching for a show that is streamed online, so a startup would need to overcome Hulu's first-mover advantage.

Given Hulu's aim to become a portal for video content, News Corp. would probably benefit the most in the short term from a strong Hulu since it also owns MySpace. News Corp. could keep track of the same user as it browses through Hulu and MySpace to better learn about the user's interests and which ads are most successful. News Corp. could then use this knowledge to sell personalized ads not only at Hulu, but also at MySpace. On the other hand, this advantage for News Corp. exists even if ABC were not to join Hulu.

Teaming up with Facebook as a boost

As one of the most popular social networking sites, Facebook appears to have the potential to be a powerful distribution channel for any network that partners with it. Moreover, Facebook offers what many seek: a great abundance of pure information on people, the lifeblood of personalized ads.

There are at least three ways by which ABC can take advantage of Facebook's facilities. First, ABC can use users' "favorite TV shows" list to insert relevant items into their newsfeeds. These would perhaps notify the user of a new episode or special event regarding the show. This would certainly help casual watchers of a particular show watch more regularly. Casual viewers often forget that a show is on and neglect to watch it on broadcast. If they use Facebook regularly and see a notice for online streaming of the show in the newsfeed section, they quite possibly will start watching missed episodes online. Second, ABC can make the text that appears under "my favorite TV shows" link to online streaming for corresponding shows on ABC's website. People often have heard of a show but never watch it. It is also often the case that upon adding someone to their friends list or viewing another user's profile, Facebook users often take note of the "my favorite TV shows" section as well as the "my favorite movies" section. From the users' perspective, a direct link to that TV show they've heard so much about takes all of the work out of trying it. Normally, one would have to remember to catch the show at the right time on the right channel with TV and at the least would have to search for the show on the internet for more information. Merely offering the opportunity to watch a show at the instant the user seeks it eliminates that barrier for many potential viewers. Third, ABC can subtly use user data to personalize ads in streaming videos on their site when any Facebook user clicks on a link to a streaming show. Clearly, there are many ways ABC can benefit from Facebook.

Conversely, Facebook would benefit from partnering with ABC by increasing its functionality as well as with monetary compensation for the ads and links. Of course, ABC has more to gain from Facebook than vice-versa, and thus has less bargaining power – we can expect Facebook to realize this. But it is also vital to note that Facebook is currently in a desperate position: it has a lot of net worth but currently gains little in revenue*. Perhaps due to its nature, Facebook gets few users to click on its ads, and so would be looking for a chance to improve this statistic. Even if ABC compensates Facebook moderately for the ads and links, Facebook's relative gain would be substantial indeed if the ads are successful. Facebook will likely take on an opportunity to increase its profitability by this much.

As a side note, one interesting aspect of Facebook that one must take into account is its demographics. As Facebook began as a social networking site dedicated to college students, one cannot expect it to be representative of internet users, much less people in general. This is potentially an advantageous situation, however, because the more users that can be identified, the more efficiently programming and advertisement can be targeted.

If the venture proves profitable, the three other networks would probably jump in on the Facebook bandwagon in response. ABC's partnership with Facebook would probably not limit Facebook's ability to partner with the other networks, as this would be entirely in Facebook's interest—not only would Facebook profit directly from the networks, but also any direct benefit to the Facebook user is a benefit to Facebook itself. Indeed this strategy may be viewed as a response to News Corp. (Fox), which in 2005 acquired MySpace.com, the other major social networking site. Unfortunately, ABC would not be able to jump on Fox's MySpace bandwagon without being deprived of bargaining power because Fox acquired all of MySpace.

Partnerships with hardware companies and gaining an advantage

Forming a united front-end such as Hulu for users will definitely benefit all the networks, but the four networks cannot merge or interact closely behind the screen because of antitrust laws, and they will remain quite separate. The same thing that makes the concept of Hulu attractive keeps any one of them from gaining a distinct advantage: lack of differentiation.

The current situation is a turning point from analog to digital. The internet is gaining in power and functionality every day. In order to take advantage of this, ABC must act quickly to gain a position that the other networks cannot easily mimic. Although the future media center is ready to be built today, it still requires groundwork to be laid with regard to infrastructure. That is, it needs some way to access the internet, specifically ABC's online streams, in a streamlined manner that appeals to the average consumer.ABC can collaborate with the hardware companies to be the first to develop a standard for communication between online streams and living room media centers. ABC could even initiate a merger to acquire the ability to develop hardware and/or software in-house. A strong relationship with the hardware companies and a standard for receiving online streams can be strong assets on the bargaining table with the other networks. At the very least, ABC could use these to acquire a fair share of Hulu. The standard could also serve to block out start-up companies from the living room altogether if ABC were to decide to not market it as a development kit.

In reaction to ABC gaining such an advantage, the other three have a few choices:

1. Maintain current strategy
2. Try to mimic ABC
3. Use their leverage with Hulu to remove ABC's advantage

The second choice is not realistic because ABC will have had significant lead time in terms of both development and forming relations. First-mover advantage in forming relations with the hardware companies is essential because they will realize the lack of need for a second standard if the first is designed with enough insight. The third choice would not be wise because what ABC will have done would be beneficial to all networks. However, this is contingent on whether ABC can gain enough ground behind the scenes. In other words, time and stealth are of the essence. We can expect that a distinct identifiable advantage for ABC would spark innovation on the part of the other networks.

Interacting with hardware companies would not merely mean preparing for the future of TV—it means helping to incite it. This course of action is thus self-reinforcing and not simply gambling on the future. As a network, ABC's business is distribution. It now must take this a step farther and move into new areas of hardware and software development by at least educating itself so that it can make informed decisions in businesses to which it has remained heretofore foreign.

Conclusion

We recommend that ABC commence preparations for the coming major changes in television by doing the following:

- Begin to develop a standard proprietary protocol for streamlined communication between online streams and computers.
- Create relations with the hardware companies and/or merge with one.
- At the same time, propose to Fox, NBC, and CBS that Hulu become the singular source of online streamed network television.
- Once ABC gains more bargaining power, use that as leverage in getting a fair share of Hulu if necessary.
- Work with Facebook to boost exposure of network programs.

The effect of such a course of action will be to strengthen all networks as a whole, to discourage any potential start-ups from challenging the major four in an arena that currently encourages start-ups, and to give ABC advantages over its peers that it can use to generate further advantages in the future.

Appendix: Calculation of current cost to build media center from retail parts

List of computer parts from newegg.com		
Part	Name	Price
Small form chassis	Foxconn DH839-MT300K Black Steel MicroATX Desktop Computer Case 300W Power Supply - Retail	$49.99
Motherboard	PC CHIPS A15G (V1.0) AM2+/AM2 NVIDIA GeForce 6100 Micro ATX AMD Motherboard - Retail	$39.99
CPU	AMD Athlon 64 X2 4600+ Windsor 2.4GHz Socket AM2 65W Dual-Core Processor Model ADO4600CZBOX - Retail	$66
RAM	CORSAIR XMS2 2GB (2 x 1GB) 240-Pin DDR2 SDRAM Desktop - Retail	$31
Graphics card	BIOSTAR V8402GL26 GeForce 8400 GS 256MB 64-bit GDDR2 PCI Express x16 HDCP Ready Video Card - Retail	$24.99
HD tuner card	Pinnacle PCTV HD Card NTSC/ATSC/ClearQAM/FM TV Tuner PCI w/ Mini Remote - Retail	$69.99
TV tuner card	Leadtek TV2000XP RM Tuner Card with Remote Control PCI Interface - Retail	$14.99
Ethernet card		negligible for producter
Hard drive	Seagate Barracuda 7200.10 250GB 3.5" SATA 3.0Gb/s Hard Drive - OEM	$57.99
Optical drive	LITE-ON Black SATA Blu-ray DVD-ROM Drive Model DH-4O1S-11 - OEM	$129.99
Infrared receiver		negligible for producter
Remote control		negligible for producter
Total		$484.93

[1] “Must Widget TV: Nets move from web to distributed content”. Joe Mandese. Feb 14, 2008. *Online Media Daily* http://publications.mediapost.com/index.cfm?fuseaction=Articles.showArticle&art_aid=76518

[2] “A new way to watch TV”. David Kirkpatrick and Adam Lashinsky. Mar 10, 2008. *Fortune*. http://money.cnn.com/magazines/fortune/fortune_archive/2008/03/17/104326604/index.htm

[3] “The hubbub over Hulu”. Catherine Holahan. Aug 30, 2007. *Businessweek*.http://www.businessweek.com/technology/content/aug2007/tc20070829_979664.htm