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Projecting Media and Technology

NETWORKED AUDIENCE

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EXECUTIVE SUMMARY

Media is constantly changing as the people develop new ideas for improving, using and consuming it. This applies to having various options of media access through different technologies such as computers, tablets, smartphones and television. Many factors contribute to the progression of media over time. These factors include the concepts of technology, institutions, policy, content, consumers, and funding. As people continue to think of how media can be improved, the applications of each of these factors to the media progression is constantly changing.

New media is always coming around the corner. This mainly depends on how humanity perceives how something can be improved and what it can be put in place of that is now considered obsolete. Mobile phones have changed from a technology that merely was able to make phone calls, to intricate devices that have capabilities that include, web-browsing, streaming music and TV, and even editing. Large institutions such as Sony, Netflix, and Facebook have turned into global empires that have changed the way that consumers use social media, spend their money, and use access technology in their daily lives. Content has moved online with products like, internet radio, Netflix, and Hulu Plus. With the increase of technology and media several laws and policies have been put into place in order to regulate their use. Consumers have adopted new technologies like, smartphones, smart TVs, and tablets while having lukewarm reactions to products like HD Radio. The surge in media usage has brought about a sudden increase in the forms of funding being used online in full and in micropayments.

Technologies are constantly changing as are the people using them. There are trends that remain in the adaptation of all new technologies and these trends continue to dictate the acceptance of new technologies.

Technology

Mobile phones serve a variety of roles in society. While they were formerly only devices that allowed one to make a phone call to a landline or another mobile phone, phones have evolved into powerful computers and tools that allow one to take on many different tasks with little to no notice or preparation. Mobile phones have both freed and enslaved their users, having become primary sources of entertainment and even pacification for whining children. As features for mobile phones have expanded, the market has grown as well. "Phones" are now used in many places as registers, cameras, digital recorders, and even personal video editing suites.

To call a smart phone a "phone" is one of today's largest understatements. While phones still make phone calls and send text messages, their roles have grown significantly past their old limitations. According to studies conducted in 2012, phone calls were the fifth most used function on smartphones. Though texting used to be one of the most popular functions of cell phones, it has now dropped below phone calls made on the "average time spent" chart with only ten minutes per day! So with such a small amount of time spent using the smartphone as a phone, what are users spending the rest of their time doing on these devices? To answer this question, a smartphone is a hub for utilities like cameras, calculators, calendars, alarm clocks and to-do lists. It is an entertainment center for all sorts of games, videos, TV, and music. A "phone" acts as a "Newsstand" for all of its user's latest magazines, newspapers, trade journals and comics. And it is a social media tool that lets one connect to all of one's favorite social media websites within a matter of seconds, including Facebook, LinkedIn, Twitter, MySpace, Google+, or MySpace (Waugh). A smartphone has the potential to accomplish amazing things or cause one to be unproductive. Essentially, smartphone owners possess a digital jackknife with unlimited potentiality. The blooming features of today's smartphones make the tasks of living (especially shopping, travelling, and communicating,) increasingly simple.

One of the most used features in smartphones today is the Global Positioning System ("GPS"). Cell phones are equipped with GPS receivers allowing them to communicate with one of twenty-seven GPS satellites that orbit the earth. The information transmitted from the satellites can be interpreted through GPS applications and systems into a map that will give directions from point A to point B or allow one to see what points of interest are nearby, such as entertainment. In order for GPS systems to operate effectively, a clear line of transmission to the satellite is needed, for any obstruction could cause for poor reception, sometimes resulting in lagging directions or a "no signal" response from the device. Many consumers worry about the possibilities of location tracking with cellular devices; however, these capabilities can be very beneficial. They can provide accountability for a travelling salesman during his work day. They can help two friends find each other in a busy city by using an app such as "Find My Friends" from Apple. They can even help one save money when "checking-in" to participating stores with a credit card linked to apps like "Foursquare." These technologies are rapidly growing, and "private" user information is diminishing every month (Wilson).

Other developing technologies that are becoming increasingly more common in cell phones are Near Field Communication ("NFC") and Radio Frequency Identification ("RFID").

These technologies are making information transfer more convenient for consumers. NFC is closely associated with shopping and paying with digital wallets that have been installed or come pre-installed on smartphones today (Bouverot). However, the technology has been implemented into phones such as the Samsung Galaxy series to be able to transfer information such as photos, music, and data files simply by tapping the phones together. While this creates opportunities for a plethora of security issues, increasingly more devices are capable of this progressing technology. Consumers expected to see NFC introduced into the new iPhone 5S, and though Apple chose not to include this feature, rumors indicate that they will implement NFC into its newer iPhone models.

RFID allows devices to recognize other devices in the same vicinity. One of the ways it has been implemented in the business world is in the Microsoft Surface touch screen device. These are not Microsoft's recently released consumer tablets, but Surface tables that allows users to place items such as a cell phone or tablet on top and interact or edit that device's information using the table's interface. Both technologies yield much potential, with much still to be uncovered. However, as mobile devices develop and grow into their role in society, these technologies will become more frequently used in our every-day lives (Hsu). The Samsung Galaxy S4, the iPhone 5, the HTC One, the Google Nexus 4, and the Nokia Lumia are among some of the more recent models from the past couple of years. All of these phones are fully loaded with more features that a user will ever be able to put to use. While only a handful of them have NFC and RFID capabilities, they are all equipped with GPS capabilities and run on some of the nation's fastest networks.

One of the things we should be watching for in cell phone production is the use of graphene. This material is a single atom thick, and is strong, can conduct electricity, and is see through. In the future it could make cell phones lighter, faster, and more flexible for different designs. It hasn't yet been implemented into cell phone technology as of now, but will be a material that could potentially revolutionize the industry (Pease).

A second, more unsettling option that could be rolling out in future years is that of in-body implantation. Much of this could be used for security purposes, as in the smartphone may only be unlocked if held by the owner (using NFC). Or, and hopefully much later, the cellular technology could be implanted into the users hand so that a device might not even have to be held in order to take or receive calls, or even use hands free options (Snyder).

Lastly, we should be looking for data speeds to drastically increase to several megabits per second. This will be because of the IMS (IP Multimedia Subsystem) that will eventually be implemented into mobile devices. This system allows for the device to move seamlessly between all connected networks, including Wi-Fi, CDMA, GMS and WiMax (up to this point) (Arar).

Overall, it's really interesting to see how cell phones have changed the way our communication works. It will be interesting to see how these technological developments continue to increase in speed as well.

Prior to the year 2010, tablet computers, or "tablets" as they are more commonly known, were defined as portable computers with a touchscreen and a running modified desktop operating system ("OS") (Beck, 2009) (Haven, 2006). However, current tablets, according to Library Technology Reports, can be defined at the basic level as "computers that allow input on a screen by means of a finger or stylus rather than an external keyboard with the desktop OS no longer being a necessary factor" (Miller, 2012).

Tablet ownership has inclined since 2010. Currently, 34% of Americans eighteen years and older own tablets such as the iPad 4, Kindle Fire, and Google Nexus compared to the 18% that owned tablets in early 2012. Of the third, 49% of American tablet consumers are within the ages of thirty-five and forty-four. Among households with minor children at home, the ownership of tablets increased from 26% in 2012 to 50% in 2013. Among college students, tablet ownership among college students increased from 28% to 49% by early 2012 (Zickuhr, 2013).

Though various types of tablets are available for purchase, "Tablets: Key features to look out for" lists the typical features they share. They each come with storage ranging from 4GB to 64GB, many of them supplying a memory card slot for storage expansion. Tablets come with built-in Wi-Fi capabilities, and many are available on major mobile networks allowing for 3G, 4G and Wi-Fi access, making internet access available almost anywhere. Today, tablet screen sizes range from 6.3 to 10.1 inches in varying resolutions, and applications, or "apps" drive the mobile market. Many come with widely used apps pre-installed for immediate functionality, while some tablets require that they be downloaded individually from a handful of online stores. Other features for tablets include the processor (the engine), RAM (Random Access Memory needed to run apps), and battery life ranging from just a few hours to ten or more. Current tablets with these features include Apple's iPad Air, Google Nexus 7, Amazon's Kindle Fire, the Samsung Galaxy Note, and Microsoft's Surface RT/Pro (Bell, 2013).

Since the creation of the first generation iPad, tablets have moved beyond the realm of entertainment. In 2011, college professors were debating the usefulness of tablets in the classroom among students. A study was done to determine the practicality and efficiency of using iPads in the college classroom. Results found that having the iPad allowed students to have immediate and facilitated access to class materials such as textbooks and other reading materials as well as providing access to assignments online. In addition to this, tablets also benefited the teachers, allowing them to share PDF (Portable Document Format) files with their students without printing handouts, to share information with their students using apps, and to spend more time facilitating classroom discussions (Geist, 2011).

In mass media, tablets have had a massive influence on radio, television and news delivery. Internet and tablets have provided a new mobility for consumers that keeps their personalized media at their fingertips everywhere they go (Gershon, 2013). They can comment on news articles, watch videos about them, or write their own blog posts. With television, consumers no longer have to sit in front of a physical TV. With internet streaming, they can stream television onto their tablets from almost anywhere. Radio works in a very similar fashion: Consumers no longer have to get into their cars or turn on in-home radios to listen to AM or FM stations. There are many applications that allow a user to stream or personalize radio stations

such as "TuneIn," "Pandora," "Songza," and Apple's own "iTunes Radio" which is built into the new Music app.

Tablet users have increased between the years of 2012 and 2013. In early 2012, around 87% of consumers used traditional devices such as desktop computers and laptops to access and browse websites with 6% of consumers using tablet devices. However, in just one year, the number of tablet users has almost doubled. In the beginning of 2013, tablet users accounted for almost 11% of consumers accessing websites. Between tablets and smartphone devices, the number of consumers using traditional devices has decreased by nearly 20% (Bosomworth, 2013).

In the beginning of 2012, the Apple iPad accounted for 92% of users using tablets to browse various websites. Within a year, the rankings have changed slightly. Though Apple still leads with 89% of tablet users using the iPad to surf websites, more users are starting to use other devices. Android devices now account for 8.2% of tablet users (versus 4.75% in early 2012) with Kindle Fire users accounting for 2.51% (decreasing from 3.57% in early 2012) (Bosomworth, 2013).

Tablets have had a major impact on society today. Compared to desktop computers and laptops, tablets provide more mobility for users due to their size and relatively light weight. Despite previous hesitancies in implementing tablets, people are becoming more receptive of them because they are more user-friendly and allow even more convenient interaction between users compared to previous platforms. Unfortunately, some tablets are expensive for an average consumer to purchase. For instance, the iPad Air costs anywhere from $499.00 to $929.00, while the Google Nexus 7 and Kindle Fire HD each cost anywhere from $229.00 to $269.99 respectively (Franklin, 2013). Although tablets are sold at a higher price-point, they have proven themselves to be excellent investments due to their many advantages and high range of functionality.

TELEVISION

After discovering a method of sending photographs over telegraph wire, German inventor Arthur Korn invented the television. The press were quick to question whether sending moving photographs over wire was next (New York Times, 1907). The next big innovator in the history of the television was a man named Philo Farnsworth, who at the age of fourteen diagrammed his design for an electronic television on the blackboard in his schoolhouse. The invention was not very impressive in its humble beginnings. "The straight line was not a surprising first image for electronic television. It was, in fact, indigenous to the screen, whose images are produced by an electron beam racing back and forth across an invisible raster grid. A year later, Farnsworth's investors were no longer satisfied simply with his conquering of space and time; they demanded profits from the "gadget." Farnsworth then produced another image on the screen for his backers: a dollar sign."

What does the television look like right now? Smart technology is very popular but size and resolution is huge as always. Microsoft currently holds the title for having the largest television screen to date at 120 inches with a screen resolution of 4K. Stuart Miles from

Pocketlint.com has this to say about the television, "Microsoft doesn't make televisions, but that hasn't stopped the company making one for itself to demo its vision of the home of the future at its brand new Envisioning Centre at the company's headquarters in Seattle. The new 120-inch, 4K, widescreen television - presumably taking the title of the world's largest 4K TV away from Samsung - is being used to demo a full Kinect-enabled storytelling experience that Microsoft believes will be the norm within five to 10 years" (Miles, 2013).

Perhaps the most dominant of the new technologies of the television is the smart TV. It seems like everyone who wants the latest technology in their home has a smart TV. Lee (et al. 2012) say this about the smart TV, Smart TVs are television sets with integrated Internet connections and offer more advanced computing abilities than do conventional TVs. These devices allow users to run various applications and to search for and find videos, movies, photos, and other content on the Web. The smart TV is an evolving concept that is still expanding its boundaries. However, what matters in the context of interaction is that smart TVs are obviously far more complex to navigate than are conventional TVs." What about compatibility? Smart TVs are compatible with a lot of modern devices like cellphones or laptops. How about ease to use? Smart TVs are much harder to use than conventional TVs and it is hard to imagine someone's grandmother using a smart TV and not recording the wrong show. It is also hard to imagine the aforementioned grandmother using the somewhat sci-fi-like remote-hand controlled technology. Lee (et al. 2012) explained the technology further, saying, "One obvious alternative to the remote control is hand gesture recognition. Many researchers have proposed the use of hand tracking and gesture recognition as a powerful and natural interface for interaction with computers, game machines, and/or television sets [1]-[6]. In particular, bare hand tracking allows the user to control devices without attaching additional devices. Furthermore, the use of the interface should be intuitive enough so that little training is required for the users."

Another realm of popularity in the world of television right now is the 3D TV. In the last three years the TV giants of Samsung, Sony, LG, Panasonic and Toshiba have been pushing 3D TV as the way of the future however Sebastian Anthony, a writer for PC magazine, has these chilling words for anyone who bought a lot of shares in 3D TV, "At CES 2012, you couldn't avoid 3D TVs, ugly polarizing goggles, and—because the viewer at home can't take part in the awesomeness that is 3D—those awful, so-real it's-bursting-from-the-screen posters. At IFA, the big midyear consumer electronics event in Berlin, it was clear that 3D TV was on its way out. Today, in the wake of CES 2013, 3D TV is dead." It is clear now that the market is has moved toward the production of Ultra high definition 4K television.

Some of the most interesting innovations are taking place in the class room. Interactive TVs are replacing blackboards and whiteboards in the classroom. Chao (2010) says, "The term, interactive TV (ITV), has multiple definitions. First, interactive TV is the technology that allows students at remote teaching sites to join a class broadcast from the main campus. Through the TV screen, students can see, hear and interact with the instructor in real time. The ITV technology allows the instructor to display teaching materials on the TV screen and allows students at remote locations to ask questions in real time."

Where is the future headed? The future of television will be almost exactly like the past has been: bigger and better resolution. Sebastian Anthony has this to say, "[t]he emphasis has now shifted to high-resolution 4K displays, OLED, image quality, and "smart" functionality. In

short, Sony, Samsung, LG, Toshiba, and Panasonic have now decided to focus on actually improving their television technology. After three years of those companies pushing and peddling 3D TVs that are virtually devoid of any actual technological innovation, this is rather refreshing." It is clear the future is not 3D and that companies will continue to develop larger and much higher resolution televisions.

Content

Internet has completely changed the way that we view all streams of mass media. A company site exists for all of our multi-media interest, especially those including music and radio (audio). With so many avenues for music listeners to either purchase music (ITunes) or to listen to it for free (Pandora, Spotify, etc.), internet listening has become an even bigger market than ever before. It has changed the way that we use all mediums to consume all types of audio.

ITunes, originally SoundJam MP, was created in 1999 and was bought by Apple in 2000 ("Apple Introduces ITunes", 2001). The early creator Bill Kincaid and his team moved to Apple where they still work today as part of the ITunes software team. Since the creation of the original ITunes, the software itself has been expanded to give even more opportunities for its users to interact with the music they love in ways other than just listening. ITunes gave people the ability to download music, store it in their computer, and sync it with their own listening device (Small, 2012, p. 42). The most recent development is the ITunes radio, which is a free streaming radio just like other stations such as Pandora or Spotify ("Apple - iTunes Radio - Hear Where Your Music Takes You", 2001). The internet has allowed people to have complete and total freedom in the ways that they come by downloading their music. While ITunes does allow people to purchase any piece of music available, there has also been a surge in the amount of people downloading MP3's for free off of the internet, as described by Uğur Gündüz accounting for the sudden spread and accessibility the MP3 has had on music downloading.

"The common use of internet and feasibility on any kind of video, sound or image files on the net, is an undeniable fact which leads one to think about the effects of this freedom on the music industry. The most common type of digital audio file is the mp3 format. There has been enormous debate over the economic and cultural implications of this new technology" (Gunduz, 2012, pg. 1).

With a creation like this, technology is clearly beginning to replace some of its more traditional forms of listening, even internet listening. The internet has also made it easier for content providers, such as musicians, to get their audio onto the internet for people to purchase and hear. Musicians can upload all of their music onto sites like Bandcamp and Soundcloud for listeners to hear and purchase. These sites, which can be used for marketing purposes, are great ways to show musicians' work audibly and visually, as they can post lyrics, artwork, and tour dates. With musicians being able to upload their music then they can link their Bandcamp/Soundcloud account to other social media sites.

While music used to be available solely through radio, television and portable listening devices, accessing all types of audio content has made possible by the internet. Internet radio is now a huge part of online listening. Don Descy talks about the phenomenon that is "podcasting" at how it changes the way people listen to the radio, and any other medium source that someone wants to upload. These uploaded sources could be anything from church sermons, speeches, game highlights, etc. All of this is available to listeners for the lowest price: free (Descy, 2005, pg. 4-5). With podcasting the possibilities are endless: consumers have the ability to not only access anything online, but can also upload their own content at any time.

Podcasting has allowed other traditional forms to be done away with, and since podcasting is so huge and has started to cover such a large range of topics, it is pushing for newspapers and even some forms of cable to be phase out. Since podcasts cover so much of the usual topics covered on those mediums (political speeches, news, announcements, etc.) it's no wonder that people are becoming more inclined to trade these other mediums for a single means of accessing desired audio.

H. Atasoy talks about the implications that broadband internet is beginning to have on all of the mediums available: "Broadband is an advanced telecommunication technology that allows data to be transmitted at increasingly faster speeds and is crucial for the Internet to realize its true potential in terms of equal access and benefits to users" (Atasoy, 2013, p. 1). With the internet's intense growth, it has developed an endless list of possibilities for audio consumption. Consumers have a larger wealth of audio to purchase, download, and to consume and from more mediums than ever before.

INTERNET VIDEO

Internet video is a very broad topic that involves various types of viewing options. It's a general field that deals with the transmission of video over the internet. There are many sub-topics associated with this topic, such as IPTV (Internet Protocol Television), P2PTV (Peer-to-Peer Television), peercasting, video clips, webcasting, streaming video, internet television, and many more. In order to be more specific, the main focus will be on internet television and its content.

The overview of the content of internet television is quite broad. Internet TV is the digital distribution, if television content via the internet, also referred to as "catch-up TV." The content provided from this medium is video on demand, mainly TV shows that are available for a period of days after the original broadcast on television. One of the major changes in the content from the device is having the option of either obtaining the video from streaming from a direct media player or downloading the media to the user's computer (Felder, 2012). Any long-term proposal for online content must be submitted online through e-Commissioning for BBC network content ("Streaming Guide, 2011). Whenever a provider submits new video content, providers often offer several different formats of the content so that the service can be accessed on different devices (BBC iPlayer- Stats and Facts, 2009).

The concept of accessing the content can be difficult, especially when a user is confronted with the option of controlling content on the internet. There are many challenges to controlling for providers, such as trying to be sure that a user is allowed to view the content, especially content with age certificates. A method used for this is parental controls, which would mean that the content is restricted unless accessing it with a password. Another system is an honor system, where users are asked for their birthdays or age to verify if they can watch certain content. Content can be tied together across media through various techniques, but the most likely way would be through social media. An example would be when a user is on a catch-up website, and the page includes the opportunity to "like" the show on Facebook, the ability to "tweet" about it on Twitter, and many other social network sites (Konijn, Utz, Tanis, Barnes, 2008).

The more the content is spread throughout the media, the more exposure it receives from the public.

The traditional broadcasting model is being highly challenged by the new digital channels and devices. The digital channels and devices allow for available content at any time, whereas the traditional broadcasting model does content delivery on a set schedule to be watched as it is delivered (Nayer, 2010). Also, the new devices use archives to make the content available for viewing, which can vary from a few weeks to months to years, depending on the curator and type of content. The concept of linear, synchronous point-to-multipoint "broadcasting" has received notable effect from the progress of online television. Since traditional broadcasting is on a specific schedule, a user can't adjust the timing of a program, whereas with online video, one can just make adjustments as to when they want to finish a program since it is available online (BBC iPlayer Help, 2013). It seems as though in the next 5 years, internet television will be the largest method of accessing videos of any form of entertainment.

Many websites online offer this service, but the most notable ones are most likely YouTube, Hulu, and Netflix. Each of these sites contains similar features, but they also have their own share of differences. One of the most notable differences being that Netflix costs money each month for access each month for their services, whereas Hulu and YouTube offer free services. The only exceptions for Hulu and YouTube are if a user opens a Hulu Plus account and if a user purchases to stream a brand new movie on YouTube.

Media Consumption Curve
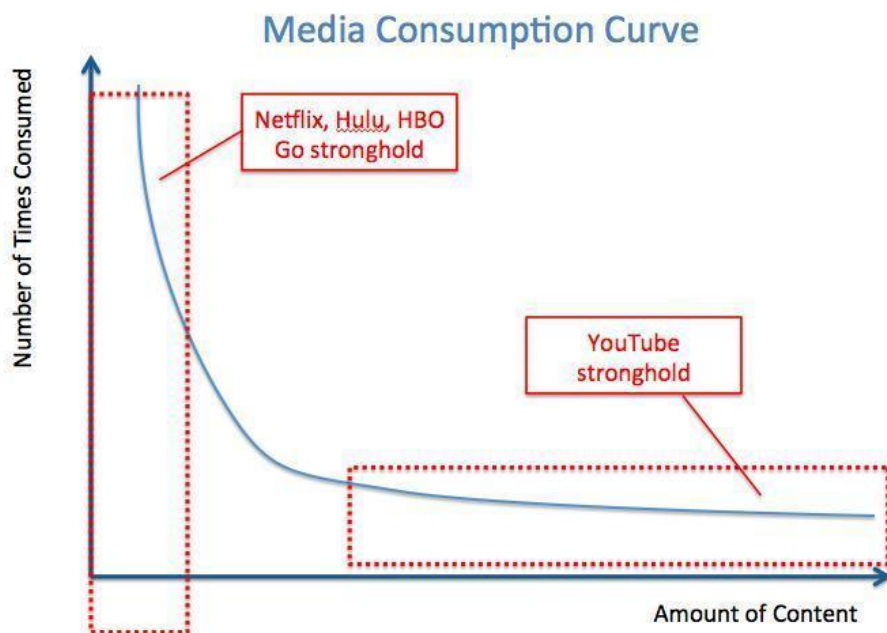
Source: Suter, 2012

Movie services are available for downloading at video sharing sites, such as the ones mentioned previously. It's different from obtaining DVDs, broadcast, and MVPD channels because there's a shorter time frame. The internet can serve as an alternate delivery vehicle for VOD (Video on Demand) content.

BROADCAST TELEVISION

Three distinct eras of visual broadcasting have existed in television history: the Broadcast Era, the Cable Era, and the Digital Era. Todreas claims that while the nature of distribution demarcates each era, "the content of television has remained relatively constant – substitute Paul Reiser for Dick Van Dyke to update the situation comedy" (1999, p 11). During the Broadcast Era, access to visual content was no longer restricted to cinemas, which required leaving the home, for broadcast television brought content distribution to the comfort of one's home via over-the-air signals. However, networks like NBC, CBS, and ABC controlled viewership during this era, for networks produced and distributed programming to local stations. Content did not dominate nor did it secure profit to its creators, not as it did for network producers and distributors.

The Cable Era beginning in the mid-1970s challenged this network-and-station industry of the Broadcast Era with a supply-chain industry, consisting of content apart from conduit, in which cable networks separated packaging and distributing functions. Programming was no longer supplied downstream, for cable networks packaged and produced programming, feeding content directly to cable distributors. Unlike broadcast content, cable content appeals to a diverse range of audiences in providing niche programming pertaining to a narrow area of interest, such as the MGM film library exclusive to TNT. Other packagers include CNN, HBO, Nickelodeon, Discovery Channel, and the largest in terms of revenue, ESPN. By 1984, 43% of homes replaced antennas with cable (Brinklay, 1997, p 7). Today, 90% of the country watches cable.

The Digital Era consequently has shaped today the nature of televised content as well as how the audience accesses it, yielding such technologies as digital television, or DTV, described by the FCC's official website as "an advanced broadcasting technology that has transformed the television viewing experience." Since June 13, 2009, broadcast models have been required to exclusively broadcast in digital format, freeing up the broadcast spectrum for public safety communications. DTVs receive digitally compressed signals that can also be received by Direct Broadcast Satellites, or DBS. These signals produce better picture and sound quality than traditional analog signals, with the capability of pausing and recording programs right onto the TV, giving viewers the capability of altering time and space in the televised world. DTV also provides supplementary information about the content being watched at the moment as well as programs that will be "aired" hours ahead of time.

Audience participation has also revolutionized content during the digital era. Derek Johnson (2007) argues that the "development of television inviting the audience in to participate can be traced back to the 1980s in the United States, as cable began to reach out to fan groups with channels devoted to extremely specific content." The specific, unique content fundamental to cable moderated the transition towards digitally-oriented media in which "tele-participation" has risen as a common phenomenon. Ross (2008) defines tele-participation as "invitations to interact with TV shows beyond the moment of viewing and outside of the TV show itself." American Idol, which airs on the Fox broadcast network, is a classic example of this. Audiences are invited to participate in the voting of who will be the next

American Idol during commercial breaks either via text message or online. Tele-participation is one example of how content is being tied together across media today, connecting television experience with cellular devices and other online platforms.

Not only has the nature of content in terms of "tele-participatory" capabilities changed as a result of the digital age, but the access to this evolving content has changed as well with the rise of internet protocol ("IP") networks. IP networks are the means by which digital video content, along with many other kinds of data packets including email, web pages, and instant messaging, is streamed from a large variety of sources on a common channel, transferred by breaking up data into multiple IP packets. Simpson and Greenfield best explain internet protocol as "a standard method for formatting and addressing data packets in a large, multifunction network such as the internet," providing "a mechanism for directing packet flows between devices connected on a network" (2009, p.2). Since these broadband IP networks reach so many households in developed countries and can be found anywhere with high-speed internet connections, content accessibility is more instant than ever, especially with such interactive programming like video on demand, or VOD. Furthermore, IP can be used on a variety of network technologies, including Ethernet LANs, long-haul fiber optic and telephony networks, and wireless Wi-Fi links (Simpson, 2009, p.1-2).

So, what does IP mean for broadcast media? It has given rise to IPTV. IPTV primarily delivers multiple streams of continuous content over private networks to viewers who watch the content on normal television sets. Through the IPTV platform, video on demand (VOD) is made available especially as it has become more and more attractive to service providers, DVR services being one of the most popular forms of VOD. DVRs have the ability to take incoming video programing, compress it, and record it to a hard disk, allowing viewers to then control the DVR playback content, including pause, rewind, and fast-forward features (Simpson, 2009, p.37). The digital channels of IPTV and VOD devices such as DVRs have given viewers this capability to have complete control over when and how they watch content, no longer bound to the set delivery schedule of traditional broadcasting models. While VOD is faring well right now, its precursor technology, pay-per-view, is not as much, limited in paying for only exclusive live programming, such as concerts or sport events. It does not have playback features like VOD.

While IPTV and DVR services are advantageous for the viewer, such platforms have adversely affected the broadcasting industry, particularly with signal piracy. Although broadcasting can coexist with digital television, entities like IPTV have the capability of retransmitting broadcast signals, resulting in compensation cost losses on behalf of the broadcaster. This is particularly unfortunate considering that broadcasters have taken legal measures to adapt to the changing technologically-savvy culture, accommodating to the time-and-place convenience for consumer access using linear and nonlinear means, including on-demand services. Broadcasters have spent billions in converting their content from analog transmission to digital systems and in producing and distributing content of the highest technical quality. Without appropriate return of their investments from inadequate piracy protection, broadcast content quality goes down along with public interest (Protecting, 2013). Furthermore, on digital platforms, viewers can fast-forward and skip ads, which has for so long been the dominant funding model for broadcast television. While broadcast television still thrives, it has significantly changed to compensate for a digital environment, without much investment return.

High definition channels will likely standardize over time, and television viewers may even have the capability to purchase product placement in certain television shows directly from their television sets digit, even further connecting the digital world and the real world.
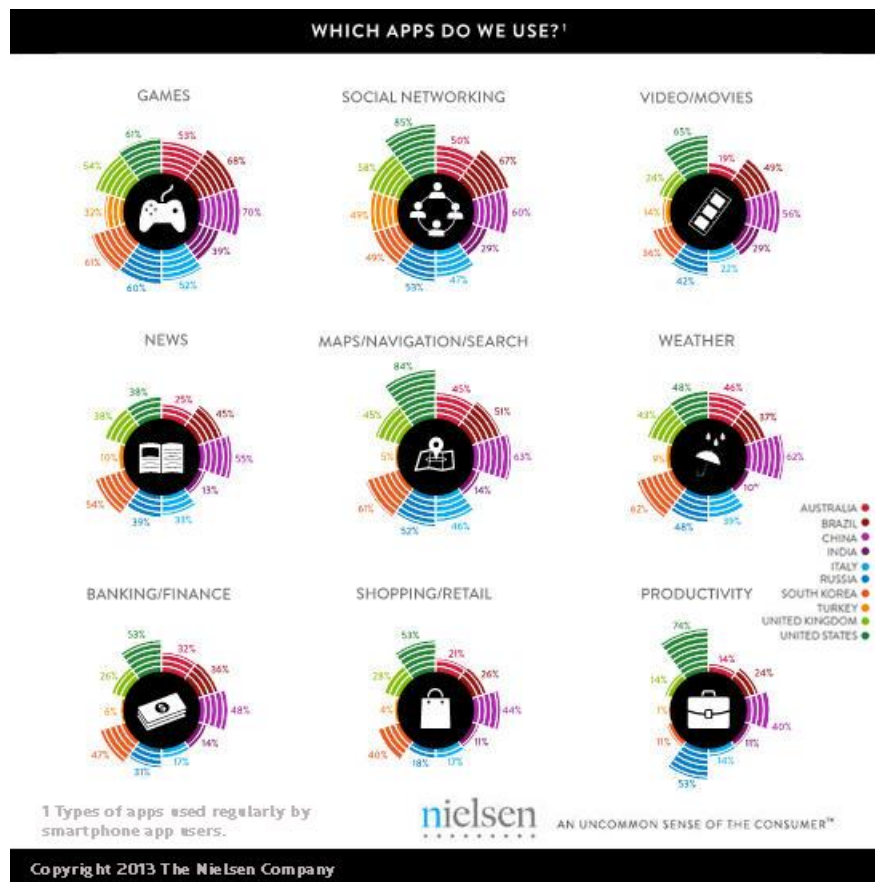
Consumer

In recent years, mobile devices have re-defined what kind of technology we see as a "need" vs. a "luxury." As smartphones have become more and more capable and more regularly used in everyday life, they have become an essential part of consumers' lives. We are going to discuss their attitudes towards smartphones in general, what the consumers are using their smartphones for each day, and elaborate on a few of those niches that mobile devices are filling. Ideally, this will give us a feel for the overall role of mobile technology in our society today, as well as for the direction that it is moving in a few more specific areas.

Smartphones. They are devices with nearly endless capabilities and potentiality. However, something we may not fully realize is the broad rate of acceptance this technology has across the board. A majority of people in the US ages 18-34 have adapted smartphones into their everyday lives (Report, 2011). Currently, in the United States, about 53% of cell phone owners own smartphones, 9% own phones with multimedia capabilities, and 38% own what retailers have dubbed "feature phones," or as the common man calls them, "dumb phones" (Connectivity). Not only that, but the vast majority of them are active shoppers in the online marketplace, purchasing applications, games, music, etc (Report, 2011).

What are mobile devices being used for most? In 2013, Nielsen did a study that distributed app usage into 9 main categories. This study demonstrated that about 85% of mobile device users were into social networking on their phones, 84% use maps, navigation and search engine features; 74% use a variety of productivity apps. Coming in at fourth were video games and movie consumption at 65%, then video games at 61%, and banking and finance at 53%. The three categories that are the "least" used are shopping and retain with 53%, weather with 48, and news at 38% (Mobile).

WHICH APPS DO WE USE?[1]

GAMES · SOCIAL NETWORKING · VIDEO/MOVIES · NEWS · MAPS/NAVIGATION/SEARCH · WEATHER · BANKING/FINANCE · SHOPPING/RETAIL · PRODUCTIVITY

AUSTRALIA · BRAZIL · CHINA · INDIA · ITALY · RUSSIA · SOUTH KOREA · TURKEY · UNITED KINGDOM · UNITED STATES

1 Types of apps used regularly by smartphone app users.

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One of the surprising truths is that "watching video content on computers (84%) has become just as common as watching video content on television (83%) among online consumers" (Global, 2012, para. 1). Not only that, but as viewing options continue to grow it is becoming more normal to use mobile devices for everything. It has also become more common for consumers to watch TV shows or movies on their phones as well. "[O]ver half of global online consumers (56%) say they watch video on a mobile phone at least once a month and 28 percent at least once a day" (Global, 2012, para. 2). Looking beyond the borders of the United States, mobile video is much more common in Asia-Pacific and Middle East/African regions where over 70% of online consumers use mobile video once a month, and over 30% use it once a day. In the United States, the monthly numbers are only up to 38% (Global).

Even while technology like social networking, navigation, games and movies are growing in popularity amongst mobile users, there is probably nothing that is growing as quickly in the mobile world as retail and finance hardware and software. Mobile devices are completely changing the way that we shop for our goods. They allow us to perform on-the-go research about the items that we are looking to purchase, find alternative vendors that may be selling the same product at a better price, and even find coupons while walking around the store simply by opening a number of different applications or unlocking them by "checking in" to apps like Foursquare. "According to a survey conducted by Nielsen in Q1 2012, the vast majority (79%) of US smartphone and tablet owners have used their mobile devices for shopping-related activities" (U.S., 2012, para. 1). This includes both in-store and online shopping, since "[m]obile commerce represents 2.7% of web revenue and $2.4 billion annually" (Panel, 2011, para. 18). Some of the most used in-store functions while shopping with mobile devices are locating stores and using shopping lists. In 2012, only about 28% of mobile consumers were making payments using their mobile devices, but we have already begun to see that become more and more common into this year as apps like Apple's "Passbook" mature with new iOS updates, and as companies like Google and Samsung roll out new NFC functions for apps such as "Google Wallet" (U.S.). These numbers are only expected to grow in the future.

In a survey of selected experts and their informed friends (1,021 of them), 65% of them believed that "[b]y 2020 most people will have embraced and fully adopted the use of smart-device swiping for purchases they make, nearly eliminating the need for cash or credit cards" (Smith, p. 3). They believe that people will trust their devices so much that cash and credit cards will mostly disappear from the common marketplace when making purchases. During the survey, 35% did not believe this to be true, claiming that "security implications raise too many concerns among consumers" about financial security, and that cash and credit cards will still be the dominant form of payment by 2020. There is a lot of debate over just how quickly this transition will occur, but very little debate over whether or not it will occur to some extent. Many do believe that it will be more of a generational transition, with the next generation largely saying goodbye to carrying cash or plastic and welcoming the idea of using mobile devices as their primary form of payment. The only reason experts believe cash will still be around is the concern for anonymity—many consumers find a lot of security in paying with cash as they go about their day. There are many who believe that digital wallets will largely be co-existing with cash in the year 2020 (Smith).

One of the problems with digital wallets is that at this point in time, not everyone will use a smartphone. Many are skeptical of putting their personal information in "the cloud." However, adding to this ideal of mobile commerce are companies like Square, PayPal and Intuit, who have all rolled out their mobile card readers in which cards can be swiped or card information can be manually typed in, in order to take payments for retail goods and services (Smith). Companies like this are challenging their users to be innovative and offer a different brand of customer service (Kent). Think of Square and Square Wallet, where the retailer has to find the consumer's picture in order to verify his check-in payment at their store. And for those who are worried about security: "All industry players will benefit from clear and widely acceptable security standards. Early and/or frequent security breaches will substantially inhibit market development. Consumers will not tolerate security holes, especially in developed markets where viable and advanced payment alternatives are available" (Kent, p. 323).

The author believes the development of using mobile phones in the marketplace stands out in the grand scheme of mobile utility. It is interesting to see how functions such as video consumption and social networking are growing, but the world runs on money, and that is something that mobile devices are transforming on a monthly basis. I think even of Square with its new "Cash" app that it just rolled out, where you can literally email your friend a dollar amount with no transaction fee. There are lots of exciting new methods of making payments that will soon be available to consumers. The questions are, how quickly will they be accepted by the general public, and, after combing through all of the options for payments, which ones will ultimately stand out and last as the industry standards?

HD RADIO

HD Radio has been around for almost a decade. Despite the fact that consumers have had access to HD Radio for over ten years, there has not been much interest shown. Part of the reason could be because consumers are not entirely sure what HD radio is and whether it is a necessity. HD Radio Technology, developed and provided by iBiquity Digital, is a technology that upgrades broadcast radio from analog to digital. The technology allows broadcasters to improve listening quality for their listeners by allowing broadcasters to play music with a CD-like digital audio quality. HD Radio also allows broadcasters to provide their listeners with real-time traffic updates, iTunes Tagging, and Artist experience (About HD Radio, 2013).

Currently, HD Radio is the only system approved by the Federal Communications Commission to transmit digital radio. iBiquity Digital Corporation is the only company with the authority to develop the system and give out licenses for it (About HD Radio, 2013). Because it is the only company providing the service, iBiquity can give the system any price and that price is steep. At the moment, the corporation's fee for "main channel audio" is $10,000, with a minimum annual fee of $1,000 for transmitting channels other than the main channel (HD Radio broadcaster, 2013). Though it is not impossible, this is an expensive investment for stations.

Broadcasting funds are not the only issue that has prevented HD Radio from being fully adopted. As stated earlier, consumers have heard of HD Radio, however, they have little knowledge of it and are not certain of whether it is a necessity. In January of 2012, a research

project done by Mark Kassof & Co. reported that fifty-four of its respondents had heard of HD Radio but did not know much about it. In the same year, it was reported that, of radio listeners with HD Radio in their vehicles, only about two percent were tuned in to it at a given time (Mook, 2012). Although adoption rates are not that high overall, they are slightly higher among public radio listeners.

In 2012, HD Radio was not considered a necessary technology by consumers. The Public Radio Technology Survey of that year produced a media pyramid to rank the usage of various media. Mobile phones ranked first at 96%, internet ranked second at 91%, and traditional AM/FM Radio ranked third with 87% beating out Facebook and general social networking. Although it ranked closer to the bottom with 46%, internet Radio also beat out HD Radio. Compared to other forms of radio and other media, HD Radio is still not seen as a necessity for consumers (Mook, 2012).

Not only do consumers not see the necessity of HD Radio, but they are still unsure of what HD Radio actually is. In 2012 Kassof & Co. did a comparison of progress between the years 2008 and 2012. In the survey, it was noted that HD radio had made no real progress. In 2008, 7% of consumers thought HD and satellite radio were the same thing; in 2012, 6% did. In 2008 14% of consumers said they had heard of HD radio, but didn't know anything about it, while in 2012, 16% said the same thing (Kassof survey exposes, 2012). The majority of consumers did not feel that HD Radio was necessary and so did not go out of their way to research and understand it.

In comparison to more traditional radio broadcasting, HD Radio does not have that much of an advantage. It does come with unique features such as iTunes Tagging, however, these features are not absolutely necessary to the consumer. Consumers can still listen to their favorite station whether they have the newer technology or not. In fact, according to a music report done by Nielsen, traditional radio still exists as the predominate way consumers listen to music. As of November 2013, 63% of listeners said radio is their main source of music discovery. Along with traditional radio is the option of online radio. In the last year, the number of consumers using an audio streaming service increased by 40%; streamers now account for than two-thirds of the U.S. population. Compared to these forms of radio, HD Radio does not have as much appeal (Extra terrestrial, 2013). Instead of overtaking them, HD Radio will most likely exist along side of traditional and online radio. Consumers will have the choice between continuing with what they already have and paying extra money for clearer sound and added features (Grabianowski, 2006).

The adoption of HD Radio Technology has been slow since it was conceived. iBiquity has not convinced consumers that it is a necessity to have in their cars and homes, hindering said adoption. It has done a poor job of explaining the benefits the technology could have for them. Not only that, but HD Radio is an expensive investment for broadcasters. Despite the slowness of HD Radio's adoption, Steve Salhany, operations manager of CBS Radio/Hartford, believes it will not disappear. He contends that HD Radio "provides a great platform for us to create new programming, specialty formats, and AM station distribution" (Miller, para. 19, 2013). There is still hope for this upgraded radio technology. If marketing is improved, HD Radio could become more widely accepted as a technology for consumers.

MEDIA AND ENTERTAINMENT

As time progresses, new methods of doing things that have always been done one way emerge and shake things up. The methods change but people generally stay the same. Whenever a new innovation emerges and tries to rock the world off of its foundation people, generally, ask the same questions they always have. Will the innovation improve their lives? Is it easier to use? Is it less expensive to use? Is it more pleasing to use or more entertaining? Without an understanding of the benefits of this innovation, people will not adopt it.

Television has been a top contender of the entertainment business for decades, but will that continue to hold true? Or will new technologies dethrone television and the moneybags that support it?

Although television has been the predominant medium in reaching mass audiences for the past several decades, some noteworthy trends have emerged in recent years concerning the competitiveness of television as a distribution channel. Young generations—namely Generations Y and X—spend more time online than they do watching television. A slightly older profile—younger "baby boomers"—spend almost equal amounts of time on television and online (Anderson, 2010). According to a recent survey conducted by Arbitron and Edison Research, American adults chose the internet as "the most essential" medium over television (Cha, 2013, p. 71).

With adults in America choosing the internet over television as the most essential medium in their lives and with the new technologies emerging on the internet that allow consumers to watch television online, is it safe to assume that all television will be watched online in the future? Perhaps, but television still holds the power of purse strings over internet companies for now, as television fights online companies over illegal transmission of content.

According to research it appears like television is losing its power over the populace. An explanation of what these online services are and their potential effect on television broadcasting is necessary.

"Online video platforms are systems that utilize Internet streaming via computers that enable users to watch and distribute video content. The role of the Internet has expanded and grown as a platform to distribute and view video content… [T]he television industry is questioning whether online video threatens the viability of the television industry. According to a 2010 survey, approximately 40 percent of American households with broadband Internet access use the Internet to watch television programs and movies" (Cha, 2013, p. 71).

This trend of the new surpassing the old has been seen before. In 1979, a study was conducted on consumers' attitudes toward advertising and the results sound familiar. "When asked which of the four media they turned to for entertainment television was again the first choice of 85 percent of the consumers questioned. Radio was a distant second with 11 percent and magazines third with 3 percent. None of the consumers in this survey indicated newspapers as their first choice" (Larkin, 1979, p. 6). This pattern can be traced back for each of the mediums mentioned with the exception perhaps of magazines. Each was at one time top of the list on most essential medium an American had to have. And each was dethroned by the newcomer.

"Online streaming video (OTV) appeals to a young audience that is difficult to reach on traditional television owing to their light television viewership and heavy usage of technology to avoid advertising" (Logan, 2011, p. 276). This is another aspect of consumers and online television; younger consumers especially dislike advertisements. They dislike them so much that they are often will to pay for services such as Netflix or Hulu Plus to avoid them. The advertisers in television and elsewhere are taking notice. "Today approximately 85 percent of U.S. internet users view online video. The duration of the average online video is 4.3 minutes, reflecting the dominance of the YouTube site. YouTube accounts for about 40 percent of all videos viewed online. Hulu.com ranks second as a video destination with less than a 4-percent share (comscore.com 2010). Approximately 30 percent of 18- to 34-year-old U.S. internet users view complete television show episodes online" (Logan, 2011, p. 277). The writing appears to be on the wall for television.

It is the author's prediction that online television will be the final nail in the coffin for over the air broadcasting. But the author does not believe that this take over will happen in the next five years. Television will limp on as radio has for a time before it suffers the same fate as all the previous mediums that enjoyed their time in the limelight.

Institutions

Social media has exploded as the newest form of communication over the last ten years. But the one social network that has really taken the world by storm is Facebook. Facebook is the largest social network in the world (Shih, 2011, p. 18). Facebook has become the biggest venue of online communication. Facebook attracts millions of new users every year as its popularity increases (Facebook Statistics, 2011).

Facebook - popularity
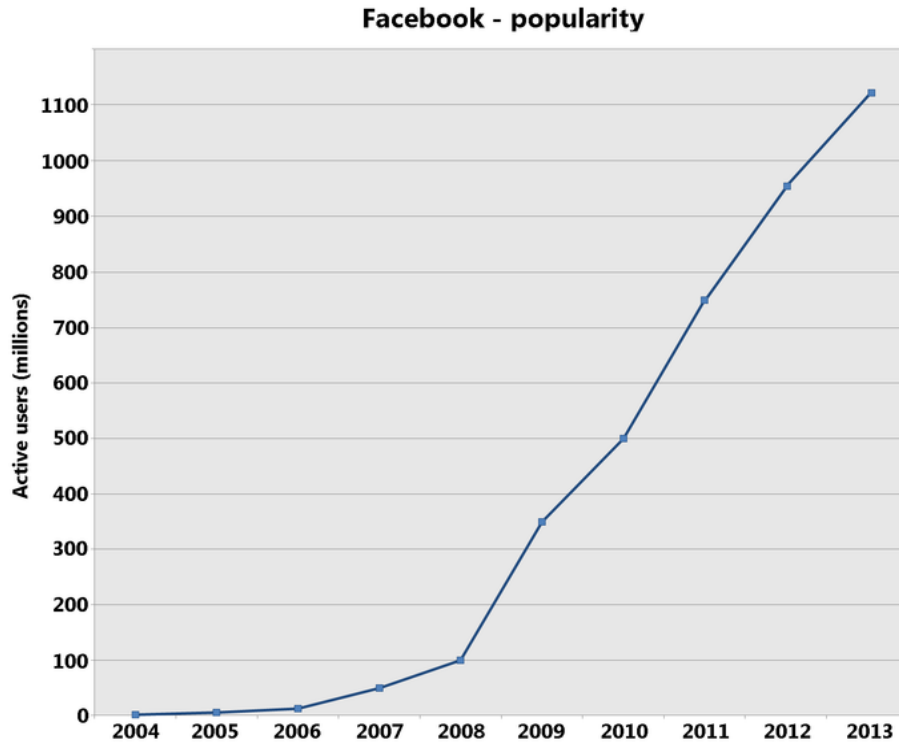
Facebook has a rather fascinating history. It was started back in 2003 as Facemash (its predecessor) by Mark Zuckerberg, a sophomore at Harvard University, and his roommates Dustin Moskovitz and Eduardo Saverin. A year later, it was launched online to the entire Harvard student body. Then Facebook became available to the Ivy League schools in Palo Alto, California. A few years later, it became available to anyone 13 years old and older. Eventually, Facebook became accessible through various technologies from Apple products to Android phones (Lee, 2013, p. 211-217).

Facebook has many features that have benefited many people and services throughout the years. The most notable feature of the site is offering the ability to send and receive friend requests to other users of the site (O'Connor, 2012, p. 64). This feature gives users the ability to communicate with their friends. Recently, Facebook has become more aware of their users' acceptance of requests by asking, "Do you know him/her outside of Facebook?" Another feature is the "like button", which gives users the ability to "express their appreciation of content such as status, updates, comments, photos, and advertisements" (Siegler, 2010). Facebook also

offers the opportunity for users to create and edit profiles for people, businesses, music groups, etc. These profiles express how people or businesses are displayed.

Facebook - Users by Age

■ 13-17 ■ 18-25 ■ 26-34 ■ 35-44 ■ 45-54 ■ 55-64
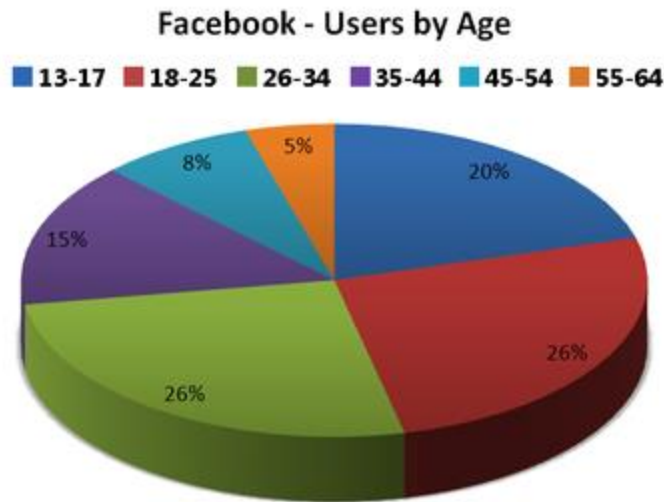
Facebook's market shares consist of various areas from where they get their income. Most of their revenue mainly comes from advertising. Since 2006, the revenue and growth has increased by millions each year. In 2012, the revenue amount was approximately $5.1 billion. The company's operating income was $538 million and the net income was $53 million in 2012. Also, the total assets were $15.10 billion and the total equity was $11.75 billion (Facebook, Inc. Financial Statements, 2013).

Facebook also has many strategic partnerships. One of the most notable partnerships of Facebook is with Skype. Skype is in technological partnership with Facebook so that they offer video calling services. In addition to this, Facebook is connected to T-Mobile's Bobsled service, which allows Facebook users to make voice calls through Facebook chat (Swartz, 2011). One of their most notable subsidiaries is with Instagram, which is used for photo sharing.

This social network site may be the biggest site in the world, but it does have its share of competition as does every other major corporation. There are many other social networks that go up against Facebook, such as Twitter, LinkedIn, Pinterest, Instagram, and Tumblr. Facebook basically has many of the functions that each of these other networks have, with the exception of Pinterest and Tumblr. Unless other networks receive more applicable features, socially and financially Facebook will continue to be the top social networking website in the world at least for the next decade, if not longer.

Netflix started as a company that just provided an online movie selection and a DVD delivery system by mail. The initial features were as follows: $4 rental fee ($3 for each additional rental) plus $2 shipping, movie/concert ticket advertisements offered by no other retailer, maximum 7-day rental until mail-in return, and the option to purchase the rental at 30% below the retail price (Keating, 2012). This first version of Netflix even charged late fees. Later, Netflix dropped the non-video product offers, changed to a one-charge subscription model regardless of number of rented movies, and dropped late fee charges.

Today, Netflix is "the world's leading internet television network with more than 33 million members in over 40 countries enjoying more than one billion hours of TV shows and movies per month, including original series" (Netflix Form 10K, pg. 1). At the same time, Netflix is not a traditional programming network from the perspective of Wall Street, making stocks for this company hard to classify (LaPorte, 2013). Unlike cable, subscribers can watch anytime and anywhere for only one low monthly price. It is a still growing company, continually expanding their internet movie and show base and increasing the collection of DVDs by mail. In July 2011, the combined plans of DVD-by-mail and online streaming (both shows and movies) became separated, requiring two separate subscription plans for Netflix and Qwikster. Consumers challenged the decision, followed by the departure of 800,000 subscribers and the plummet of its stock on Wall Street from $298 to $53 in September 2012 (LaPorte, 2013). Netflix quickly dismissed the separation because of the adversity. Currently, two separate subscription plans are still necessary to utilize the DVD-by-mail and instant streaming services, but both are under the name "Netflix" now. Netflix online streaming is accessible through devices such as PCs and MACs, gaming consoles, smart TVs, and mobile devices. Netflix's partnership with corporations such as Nintendo and Sony has made its instant availability possible on gaming consoles such as the Wii and PS3 respectively. Starting with Canada in September 2010, international streaming was launched. As of December 31, 2012, it had grown to be available in more than 40 countries. Netflix is one of the fastest growing companies of the 21st century.

Despite currently being the world's largest subscription service, like any other company, Netflix has its strengths and weaknesses. According to the SWOT analysis conducted in January 2013, this institution's strengths include a strong business model providing a superior value proposition, revenue sharing relationships with distributors reducing investments for content acquisition, and effective marketing increasing the number of subscriptions. Its biggest weakness is its subjection to litigation troubles over the years, particularly in terms of business practices and patent infringement with content providers. For example, in April 2009, antitrust class action suits were filed because of a partnership between Netflix and Wal-Mart agreeing to divide online DVD rental shares, yielding higher subscription prices for Netflix.

Netflix also suffers certain risk factors. First, it must strive in its efforts to attract and retain subscribers by maintaining content availability and updating new content, especially to compensate for its loss of subscribers over the years due to dissatisfaction, impracticality, and competition. Redbox and HBO are two of its biggest competitors. By the end of 2009, growing numbers of previous Netflix subscribers transferred their services over to Redbox, challenging Netflix to compete more effectively (Keating, 2012, p. 228-229). Hastings has also said of HBO: "It

wouldn't be surprising to us if HBO does their best work and achieves their highest growth over the next decade, spurred on by the Netflix competition and the Internet TV opportunity" (Roettgers, 2013). Other risks that could adversely affect the future flourishing of this industry include possible future computer advancements inhibiting online streaming content, the denial of network licenses to stream their programs' content online, and the gradually increasing costs of U.S. postal rates (Netflix Form 10K, pg. 5-9). If cost of DVD delivery is on the rise, then subsequent price increases to compensate could deteriorate subscriber base.

Overall, the company is doing well for now. According to analyst Neil Begley, "Netflix needs to sustain 40 million U.S. streaming subscribers to become 'a very solid, sound business'" (Laporte, 2013, pg. 32). At only 36 million to date and with the $90 a month in cable costs, it will not take long for it to reach this goal. Consumer experience and satisfaction with Netflix is comparable to cable networks at only a fraction of the cost, especially with some of the original series it has been generating in recent years. Netflix is also currently the lead in the DVD-by-mail industry, effectively killing Blockbuster. With its online streaming content, rivalries have ensued with Hulu and Amazon instant streaming. Netflix has licenses to stream programs from Fox, ABC, NBC, CBS, and as of more recently DreamWorks and Disney as well. One cable company with which they lost a streaming license is Viacom, which hosts many programs on Nickelodeon. Now Amazon Prime is the only major streaming site that has a partnership with Viacom. Hulu Plus has a partnership with MTV that neither of the other two have. Hulu Plus also features nearly instant availability of new episodes of popular TV shows. One would have to wait for an entire season to become available on Netflix to view it in contrast to Hulu Plus. In terms of library extensiveness, Netflix has a selection of 25,000 titles; Hulu Plus has a selection of 10,000 titles; Amazon Prime has a selection of 5,000 titles (Curtis). With differences in availability and network partnerships, consumer demand is the ultimate factor that will determine the success of each competing institution.

SONY

Sony is one of the leading competitors in electronic products. The Japanese founded company began in 1946 by businessman Masaru Ibuka and since then has risen to become one of the top companies in the world, even ranking 87th on the Fortune Global 500 list (Sony Global, 2011). Sony is also ranked first in consumer electronic brands, making it the second leading brand in some of the world's biggest countries, like India (Sathish, Venkatesakumar, 2011, p 68).

Sony is a multi-industry company, meaning that they have a presence in many different fields. Sony's website lists their company as being involved the fields of: televisions, digital imaging (video cameras, still cameras), audio/video (Blu-ray players, DVD players, etc.), PC's, semiconductors (image sensing), electronic components (batteries, audio/video recording media), professional solutions (broadcast and professional use), and medical (medical related equipment) (Sony Global, 2011).

The key product of Sony is the Sony Vaio. The Vaio brand is Sony's highest selling brand of laptops. This product put Sony back on the market with laptops in the 1990's after a decade break from the world of laptop marketing and production. Since the Vaio is the company's largest consumed product it is only natural that it is one of the company's most controversial products. Sony had a rough patch when the Vaio was experiencing battery problems that were

leading to fires due to exploding batteries. A recall was ordered and after work the Vaio was released to the market again.

Sony's newest product is their tablet series, which so far has gained good credit, while Sony continues to work on their tablets to keep up with the ever-competing market. Most of the future markets at Sony are related to eco-friendly products and product usage. Some of these are greener solar cells, energy storage using rechargeable lithium batteries, and solar batteries (Future Eco Innovation, Sony, 2013).

Sony's capitalization has maxed to around 100 billion since 2001, and has gone through several ups and downs since then (EDGAR, U.S. Securities and Exchange Commission, 2013). Their net worth has been the most interesting and has seen the biggest increase, going from $17 billion to $35 billion between the years of 2002 to 2011 (EDGAR, U.S. Securities and Exchange Commission, 2013).

Sony has a very interesting partnership with FIFA (Fédération Internationale de Football Association) with particular emphasis on the FIFA world cup. They give FIFA and other sports fans the opportunity to make their valuable gaming experience something even more. The Sony advertising and marketing will increase and become more valuable for the impact of electronic entertainment. This partnership also allows Sony some extra rights, including being able to use the FIFA logo to brand other Sony products and advertising images. On the Sony website they explain that one of the basic exciting factors of this is Sony's involvement with one of the largest global sports, football (FIFA Partnership Agreement, Sony, 2013). What could be more exciting that this for a company?

Sony and Olympus merged in April of this year (Sony, Olympus business merger, 2013). Up until the merger both companies had been titled as struggling Japanese business ventures. Both had lost extreme amount of revenue and both had been under scrutiny for "scandals and fails" in the last decade. One of the biggest reasons for this venture is Sony's work to become more involved in the medical field, which is something that Olympus has managed to start becoming a part of recently. On the flip side Olympus wanted to explore the world of "advanced imaging technology" for the sake of their digital camera market, which is something that Sony is most definitely known for being a major competitor in. This merger can obviously be seen as a huge positive business move for both Sony and Olympus.

Since 2012 Sony has continued to bring in large revenue and have huge shares. It could be said that their most valued business time was the 1990'sand 2000's due to the rise in demand of the Playstation. But more recently (2011) their value has dropped immensely. Sathish writes about this saying that customer experience at Sony has always been high, but with a lack of exciting products, especially when a rise of more interesting electronic devices seem to be flooding the world from other companies, customers are left being intrigued instead of being purchase satisfied (Sathish, 2011, p. 69). This will be a struggle not only for Sony but other companies as well due to market competition is so high. Some conflicts with this will be the fact that many of these companies will be trying to capitalize on products from other companies. Take the new invested world of tablets. While many would say that Apple dominates this field, many are not interested in buying IPads for multiple reasons. This will be giving Sony a way to capitalizing on this market for the better of their own company usage.

The issue with competition is going to be a continued problem facing Sony (as well as all other major competing electronic companies) in the future. A huge venture for Sony is "going green." I can only see this being huge factor of competition from other companies that will try to capitalize on this. Since Sony seems to be struggling with this factor recently it will have to pull out all the stops in order to keep them on top. Since going green, especially when it comes to battery life and green energy, is their big working push they will have to find creative ways to make that the newest twist on their already popular products and products that they have capitalized off of others to keep the market high (Sebok, 2009, p. 35).

Sony has the ability to be one of the biggest markets out there. When it comes to electronics they may struggle due to the wide range of companies out there in the same market as them. But Sony also is one of the only electronic device based companies moving into other fields such as music (Sony Music Entertainment) as well as the world of television and film (Sony Pictures Entertainment). If worked properly they could dominate in other fields to, making them the top dogs in almost every major field.

RURAL BROADBAND

Policy

The 2008 Farm Bill required the FCC "to submit to Congress a report describing a 'comprehensive rural broadband strategy' in 2009" (FCC, 2013, para. 1). The Commission was also to update and evaluate it in 2011. What this bill requires them to do is to "meet the demand for affordable, high quality broadband services in rural communities, including historic investments made under the [...] Recovery Act" (FCC, 2013, para. 1). There have been some great leaps and bounds taken to be able to provide quality broadband to the rural areas in the United States. However, there is still policy reform that must be done in order for all of rural America to be able to partake in this new online economy (FCC).

The Farm Bill was created on the belief that "All Americans, whether they live in rural or urban areas, should have access to robust and affordable broadband services—as well as the ability to use those services—in order to take advantage of the many opportunities the digital revolution has created" (FCC, 2013, para. 2). Broadband comes with all kinds of advantages - healthcare, to worker training, to job creation and economic growth - that most of us in highly populated areas take for granted as a part of our everyday life and culture. One tool created to measure the broadband coverage in areas all over the United States is NTIA's National Broadband Map. This map is "a searchable and interactive website that allows users to view broadband availability across every neighborhood in the United States" (FCC, 2013, para. 3). According to "Bringing Broadband to Rural America," there are approximately 14.6 million Americans who reside in rural areas that do not have access to broadband, and thus have no access to the many resources that others take for granted. There is, however, some connectivity in rural areas. Using 3G and 4G wireless networks, the FCC has been able to track the rural areas that do not have any kind of wireless connectivity—only 8% of them—which comes out to about 2% of the entire population.

Recent developments have found the US Department of Agriculture (USDA) working in joint effort with the FCC, CenturyLink, Comcast and Frontier in order to "expand their broadband footprints." In addition to this, "[o]ther smaller companies are rolling out state-of-the-art services in rural communities where broadband was previously unavailable" (FCC, 2013, para. 13). This is beneficial that they are placing a co-op effort into fixing this problem. So far Congress has allocated 7.2 billion dollars to the project in order that it may reach both rural and recognized tribal areas of the United States. Supposedly, this "program will bring new or improved broadband service to 2.8 million households, reaching nearly 7 million people, 364,000 businesses, and 32,000 critical community institutions such as schools, healthcare facilities, and public safety agencies" (FCC, 2013, para. 14).

The FCC took a step to obtain information and get the public involved with the reform process by holding open workshops on the issues (FCC, 2013). While these workshops only lasted for a little while, it greatly benefits the cause of the FCC in its education of what people wanted and for what purposes they wanted it. Without feedback, it is difficult to satisfy people with the product or service that they are provided. An additional interesting point is that having a secure mobile broadband is crucial for public safety. Something people with broadband take for granted is that they'll be able to call for help when they need it. However, where that

connectivity isn't available, people are left to fend for themselves. Because of the gun laws and regulations happening at this point in time, connectivity and sense of broadband community is going to be extremely important in the very near future.

Because of this call for more wireless broadband connectivity, the FCC has been seeking to free up broadband for mobile devices. This includes cutting satellite services and TV bands (FCC, 2013). One way this happened was through the digital evolution of TV. Recently, people had to switch either to cable, dish, or a digital converter box in order to pick up any kind of signal on their television. Without one of these, a TV and analog antenna was rendered useless. Overall, the movement towards total national broadband connectivity has proven itself a tedious and difficult path for the FCC to follow, both in planning but also economically. It's hard to encourage providers to provide a service in a place that is economically unbeneficial for them to do so. However, it seems as if they have handled it very well in getting both large and small providers on board with the project.

PIRACY

With the innovation of new technologies comes the ability to do things in faster, more convenient ways. These new technologies have enabled mankind to progress. However, with new innovations come more responsibilities and more opportunities for these technologies to be used improperly. Misuse of these technologies can infringe on the rights of others, including copyrights. One of the specific misuses of technology is piracy. According to Merriam-Webster.com, piracy can be described as "the act of illegally copying someone's product or invention without permission" or "the act of illegally making television or radio broadcasts" (2013). Piracy laws not only apply to television and radio, but also apply to sound recordings: "Federal law provides severe civil and criminal penalties for the unauthorized reproduction, distribution, rental or digital transmission of copyrighted sound recordings" ("The law," 2013).

The problem with piracy is that it steals from the originator of the work. When a person or group of people makes copies of another's work without that person's permission, they are stealing, which is against the law. They are then capable of being subjected to a civil lawsuit. After a series of court rulings, it has been determined that it is against the law to upload and download copyrighted music without permission ("The law", 2013). These laws can be applied to television and radio broadcast, as well as film distribution.

Various groups are affected by piracy of content and one group is the music industry. The Recording Industry Association of America (RIAA) focuses on those involved in music piracy. The groups of people involved include "songwriters, the recording artists, audio engineers, computer technicians, talent scouts and marketing specialists, producers, publishers, and countless others" ("Who music theft", para. 1, 2013). Music piracy takes away from the pay that these people would otherwise receive from their work. A study done by the Institute for Policy Innovation calculated annual harm to the U.S. economy to be around $12.5 billion. It also calculated more than 70,000 jobs lost and $2 billion in wages lost to Americans ("The law," 2013). These losses represent the music industry alone.

In the past, the United States federal government attempted to enact legislation to try and prevent the losses caused by piracy. One of those legislations was SOPA, the Stop Online Piracy Act. Introduced in 2011, SOPA was the government's attempt to give the FBI power "to seek injunction against Websites that steal music, films, software, and other intellectual property created by U.S. firms" (Kang, para. 2, 2011). The bill would allow also the FBI to hold third parties responsible for piracy. The bill's main aim was to protect the intellectual property rights – creations of the mind such as inventions, literary and artistic works, and designs used in commerce ("What is Intellectual Property?", 2013) – of Americans. While SOPA is supported by some entertainment companies, there were quite a few companies that opposed the bill. Some of those companies include Wikipedia (Musil, 2012), Google, Mozilla, and Reddit (Olivarez-Giles, 2012).

The arguments against policies such as SOPA stemmed from the idea that these bills could have hindered the way the internet is supposed to work. Some companies argued that SOPA would put people and companies under suspicion simply because they had written about or linked to a site that the government suspected of copyright infringement. They also argued that the bill would have put a heavy burden on search engines and internet service providers. It would have required them to be on the constant lookout for suspicious sites and they would have been held responsible for blocking those sites (Kang, 2011).

Outside of music and film, a newer technology that would have been directly affected by SOPA is social media. It would have been affected at the most basic level because it was created as a way for people to share with one another. If one person discovers a website that allows them to download a movie or song illegally, he or she is likely to share the website with friends. The most logical way to share that website would be through social media because it is one of the fastest ways to connect with friends. If piracy links were to start floating around social media, SOPA would have given the government a roundabout way to censor social media, also known as ancillary jurisdiction ("Ancillary jurisdiction," 2013).

Though SOPA was never passed, the U.S. government has managed to establish more than ten piracy laws (Masnick, 2012). The most recent legislation is the Prioritizing Resources and Organization for Intellectual Property Act (PRO-IP).This law, passed by President George W. Bush, increased the "protection of intellectual property (IP) such as software, films, and music by raising penalties for infringement and creating a national "IP czar"" (Schwankert, para. 1, 2008) in charge of annually reporting piracy findings to the president. This law is an extension of anti-piracy legislation in the past and put into effect harsher penalties for those guilty of piracy. Under this and other copyright laws, people can be fined or jailed for "actual damages, the actual calculable losses incurred by the plaintiff, and a separate component called statutory damages that is used to estimate possible and potential damages," (F, para. 2, 2013). Currently, statutory damages can range from $200 to $250,000 per work (F, 2013).

Though piracy laws work to protect the rights of creators, there has been opposition to the amount of money charged for copyright infringement. When PRO-IP was passed, some advocacy groups stated the penalties the law laid out were too harsh. They argued that it did not balance the users' rights with the rights of the creators of content (Schwankert, 2008). Recently, there have also been judges who have been skeptical of the amount of money calculated in statutory damages. In 2011, the music industry tried to sue LimeWire for damages

that would have amounted to $75 trillion. The judge presiding over the case declared the industry's claims to be "absurd" (F, para. 1, 2011). Because of speculations such as this, the Department of Commerce's Internet Policy Task Force published a Green Paper earlier this year that called for feedback and insisted on a rechecking of damage amounts (F, 2013).

Both sides of the argument against piracy need to be taken into account. The people who have created the content have the right to bring a civil lawsuit against anyone who steals their content and puts it on the internet to be shared. Anti-piracy legislation is the government's way of protecting the rights of those people. However, the rights that the First Amendment protects need to be taken into account as well. The government sets up agencies to regulate not to dictate. With speculation of the amounts in damages, the government will most likely complete its inspection into damage calculations and lower the penalties for piracy in upcoming years.

FCC MEDIA REGULATION

"In 1928, the Federal Radio Commission, the FCC's predecessor, set aside national 'clear channels' to allow for the creation of national radio networks" (Waldman, 2011 , p. 276). With the establishment of the FCC came the future of radio, television, and even internet regulation. The FCC was established to make sure that the electromagnetic spectrum was usable for radio. The FCC began regulating the broadcast of radio in several different ways: licensing locally, ownership rules, and must-carry rules. Licensing locally allowed the Commission to create a nationwide network of stations that were set up with more local interests. The ownership rules were established to set up boundaries on ownership of multiple stations so that one network could not gain a monopoly over the others. The must-carry rules ensured that certain content such as news, weather, education, and religious broadcasting was available to the public (Waldman, 2011).

Waldman (2011) explains the government's role and obligation in regulating broadcasting: "The government has played a greater role in shaping content in the broadcast industry than it has in the print industry for a simple reason: While the printing press belongs to private owners, the airwaves belong to the public. Because there is a finite amount of spectrum, and a much greater demand for licenses than can be accommodated, policymakers beginning in the 1920s had to decide who would get the spectrum and for what use" (p. 276). The government argued that the scarcity of the electromagnetic spectrum gave them a right and an obligation to regulate broadcasting.

Waldman (2011) also explains how FCC policy helped shape cable television. "FCC policies contributed in significant ways to the cable industry's evolution from a limited service that served rural areas to its current status as a major competitor to broadcasters. Initially supportive of cable as a new communication medium, the FCC shifted its position in 1966 and began to regulate the cable industry due to its competition with over-the-air television broadcasters" (p. 298). The FCC decided that the must-carry rules applied to cable television just like they did to broadcast television, in a way to protect the broadcasters. "Congress required major cable providers to set aside up to one-third of their channel capacity for local

broadcast stations. Broadcasters argued successfully that such a significant governmental intervention was required to protect them, insure more coverage of local issues, and promote broadcasters' ability to compete effectively against cable operators in their local markets" (Waldman, 2011, p. 298).

The government has consistently held that in order to ensure a free and open marketplace, they must step in with a heavy regulatory hand. This has been debating concerning the internet. The FCC is interested in everyone having broadband internet access. In 2010, the government unveiled a plan to get 100 million Americans on broadband internet. The FCC believes that by getting more Americans access to high-speed broadband, people will have access to information they never had and local news will be accessible like never before. "In early 2011, President Obama announced an initiative to make available fourth-generation high-speed wireless services to at least 98 percent of Americans" (Waldman, 2011, p. 304).

We continue to see the marketplace of ideas at work in society today. The government believes there is a need for a free and open internet not bogged down by service providers purposely slowing down the content of non-affiliated websites; the marketplace must stay open. The FCC has laid down rules to protect the net neutrality of the internet as Waldman (2011) explains. "These rules have great significance for the development of news, information, and journalism. The rules forbid an ISP from blocking one news provider in favor of another with whom it might have a business relationship" (p. 306). Through many years of FCC regulation, the principles of a marketplace of ideas, operated in the public interest, has remained and will continue to do so in the future.

Funding

When it comes to producing broadcast video, proper funding is essential in order to perform a smooth operation. Funding is defined as "the act of providing resources, usually in form of money, or other values such as effort or time, for a project, a person, a business, or any other private or public institutions" (Mishkin, 2012). There are many different funding models that are actively used by different companies today. Some examples include advertising, subscription,micropayments, whereas some companies are non-profit whom might receive funds from donations or other sources, such as Pay-Per-View (Kate Coyer, 2007).

Each of the video providers has their source of funding to maintain operation. For example, satellite receives their funding through subscriptions from their users. It's also been known that satellite companies receive extra funding through Pay-Per-View when their users pay to watch movies that haven't been released on DVD or Blu-ray (Bauer, 2007). Often times, satellite companies receive extra funding from additional purchases by their users. Lastly, the companies receive different amounts of funding depending on what satellite package the consumers decide to pay for.

Another form of broadcast video is through cable, as well as satellite, which is commonly funded by subscription to either basic or premium channels in packages. They also receive funds by advertising through airing commercials. Many cable companies have become successful by either the number of subscribers they have received (Industry Data, 2012), or number of viewers through advertisement support (Cable Time Period Rank- 1Q'11 (Live+SD), 2013) in the last couple of years.

Rank	Provider	Number of Subscribers
1	Comcast	22,002,000
2	Time Warner Cable	12,344,000
3	Cox Communications	4,595,000
4	Verizon FiOS	4,592,000
5	AT&T U-Verse	4,344,000
6	Charter Communications	4,197,000

7	Cablevision	3,247,000
8	Bright House Networks	2,038,000
9	Suddenlink Communications	1,230,000
10	Mediacom	1,019,000

Rank	Channel	Average Number of Viewers
1	Nickelodeon	2,339,000
2	Nick at Nite	1,525,000
3	USA Network	1,383,000
4	TNT	1,297,000
5	Adult Swim	1,245,000
6	Fox News Channel	1,123,000
7	ESPN	1,077,000
8	Cartoon Network	977,000
9	History	927,000
10	A&E	889,000

Lastly, funding for the broadcasting of video over the internet mainly comes from advertising of subscriptions, depending on the website that is being used by the consumer. The advertising comes into use through short commercials and banner advertisements that are played before the video. For example, when a viewer goes to the abc.com website, there are short 30-seccond advertisements that are played in place of the advertisement breaks on normal television. It seems as though funding coming through advertising seems to rise above other models of funding. Whenever companies need funding, they often make their services known by advertising their companies on well-known sites. For example, Netflix makes itself known by displaying their services on social network sites, such as Facebook.

HANDHELD MULTIMEDIA

Much has been discussed regarding the new wave in funding music and other multimedia outlets. With the economy at one of its lowest points it is clear that funding is changing and coming from many different angles. Most of the funding aspects come from Itunes, Amazon, and other online media store sources (music, apps, eBooks, etc.), along with other non-traditional website sources. Even though there are more funding options than ever, before sales prices are becoming higher, making funding goals harder to reach.

Online multimedia markets are seeing a huge growth in sale trends because of the handheld market. People are going beyond what they once thought they wanted to buy and are considering more choices, thanks to apps. Chris Anderson talks about this in his book The Long Tail. He describes this by saying, "People are going deep into the catalog, down the long, long list of available titles, far past what's available at Blockbuster Video, Tower Records, and Barnes & Noble. And the more they find, the more they like. As they wander further from the beaten path, they discover their taste is not as mainstream as they thought" (Anderson, 2006, pg. 5).

One of the biggest funding models that seen in the handheld market is micropayments. PayPal (an online payment website that uses the micropayments model) describes on their website how businesses can take part in using their website for merchant funding. They break down basically how the model works, by each customer gives a small financial transaction online which then builds up to the merchant overall profit.

Another example of micropayments comes from the online sale of apps and individual songs on Itunes. When Itunes started it was a huge wave of innovation in the music industry. For the first time musicians and record companies could sell their music online without making customers buy albums in a physical copy from a store. What was unique about this was that Itunes gave customers the chance to not purchase a whole album (which would still be considered a micropayment) but would allow them to just purchase individual songs (an even small form of micropayments). What has changed however is the pricing. Individual song prices have gone up in the last year or two from ninety-nine cents to $1.29. Even though this price change came abruptly and appeared annoying to customers, they are still interacting with Itunes the same and still purchasing individual songs and albums the same, making the funding model still the same.

One of the newest funding forms are online donation sites for personal projects, called crowd funding. Kickstarter is a website that allows creators of individual projects the chance to independently create a funding system where people can back and support them financially and allow them to keep all of their profits that they make (Kickstarter, http://www.kickstarter.com/hello). Examples of people using Kickstarter accounts would be bands that need funding to pay for a recording studio to create a new album. All they have to do is make an account on Kickstarter, give them a time limit on when donations need to start coming in and when the project is finished and the donations are no longer accepted. From there they can begin sharing their project story and timeline for donations through sources of social media. Sites like Kickstarter are beginning a relationship between the micropayments and non-profit models of funding.

The handheld market is an incredible media outlet for companies to use. With newer funding models being created so frequently every outlet is being given the ability to fund anything they hope to create.

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