Media Convergence in 2018

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Executive Summary

Media convergence can be broken down into six essential categories: technology, content, policy, institutions, funding and consumers. The following report is categorized accordingly.

Technology:

Wearable technology has quickly become one of the hottest spaces for technology development. While up to this point only smaller players have moved into the space, recent projections point to massive opportunities for the big five (Apple, Google, Microsoft, Amazon and Facebook). Without their investment, however, it is unlikely that the market for these devices will grow beyond niche fitness products.

Smartphones, on the other hand, have seen stable and exponential growth in recent years. They are more than just wireless, portable calling devices thanks to their internet capabilities. From the first iPhone in 2007, to the growth of Android, and finally now with the new iPhone 5s, the growth in popularity of these smart devices has undoubtedly changed and will continue to change our everyday lives.

Thanks to the smartphone boom, the way audiences approach photography is changing as well. While some may say these devices will replace higher-end digital cameras, specifically DSLRs, the opposite is likely to happen. An increased interest in photography could lead smartphone users to invest in a more capable camera. Over the next five years, DSLR sales are expected to continue on a steady incline.

Content:

Radio content encompasses many types of media. Today's radio is not the same radio that previous generations listened to. Content is increasingly integrated, utilizing new technology by incorporating web content, social media, and visual media. This trend will continue into the future, especially with the rise of the connected car.

A major player in the realm of content is video. The online video market is a booming industry and is expected to continue seeing progressive growth in the years ahead, both in its ability to supply consumers with existing media but also in the changing market wherein online content providers, such as Netflix, have moved into the creation and distribution of new media.

With bigger handheld devices and high screen resolutions, it is clear that society has determined the importance of mobile video content. Phones were previously made smaller for convenience, but are now made larger for increased screen size. This began with mobile gaming and has grown with the ability to take pictures and watch online videos from sources like Facebook and YouTube.

Policy:

The world of media would be a drastically different place if certain governmental policies had not been established along the way. For instances when another's work is used without permission in film, legal measures can be taken. Any product of intellect that has commercial value, including copyrighted property such as literary or artistic works, and ideas determined as property is referred to as intellectual property. Works that fit this description are protected legally.

Creative Commons, a legal licensing system in which creators can voluntarily give away some rights to their work in order to allow others to use their work in new ways, has quickly become a staple of the independent creator community since its introduction in 2001. While examples of mainstream use are becoming more common, it is not clear that the licensing system will be able to move beyond the niche audience that it currently enjoys.

A joint initiative of the FCC and U.S. Department of Agriculture's Rural Utilities Service (RUS) collectively known as the Rural Broadband Strategy is seeking to make broadband accessible to 19 million Americans living in unserved rural areas over the next decade through the Connect America Fund (CAF). To this point, the initiative has proved unsuccessful as there are still 19 million Americans, 6% of the population, without access to broadband internet.

Institutions:

Adobe Systems Incorporated is the world's leading producer of software for a variety of tasks including print design, photo/video/audio editing, web design, and other media related software. Adobe has recently made a major change in funding models by changing from perpetual licensing to a subscription based model. Although many people are upset and questioning the decision, many others are excited about the change. Time will tell if the change pushes Adobe forward or causes problems in the long run.

Samsung is currently the world's largest electronics company by revenue. In the American smartphone market, Samsung's biggest competitor is Apple. On a global scale, however, the company is able to hold its own. How the company will fare in the long run has yet to be seen.

The company Nvidia can be expected to see continued but slow growth. They continue to seek out ways to supply parts for the manufacturing of computers and mobile devices, while maintaining a solid foothold in the computer enthusiast market.

Funding:

Traditional funding models including advertising sales, listener support, and underwriting have proven effective for the broadcasting industry. However, broadcasters will have to continue adapting to and utilizing new technology to increase revenue and service to consumers to succeed into the future.

With the rapid growth of online video content providers, one can expect the monthly video subscription model to remain in place and continue to bring in increasing revenue in the future.

Consumers:

Television is a widely used medium that shapes our culture and vice versa. In 2012, approx. 93% of American Households had access to cable broadband. Because of the ever-growing online presence of television shows, movies, and other video content, young audiences are favoring these alternative entertainment venues, though not completely abandoning broadcast television.

Consumers have rapidly adopted smartphones in recent years. If the development trends of smartphones and smartphone applications continue along the same lines as they have in recent years, those that focus on delivering entertainment content (music, games, news) will be the most successful.

Although print publications are seeing a significant drop in ad revenues and subscription numbers, the news industry is adapting by implementing news content online and on mobile platforms. Over the next five years, online readership and mobile subscriptions are projected to increase at a steady rate, but print publications will not become obsolete in that time period.

Technology

Wearable Technology

With the shift from desktop to mobile computing in recent years, the appearance of a new category of devices and technologies known as “wearable computers” is only natural. This category of devices has the power to not only improve on the convenience of mobile computing, but they also have the potential to change human interactions. Many manufacturers and analysts see incredible opportunity in this growing market niche (even to the point where a conference has been put together: The Wearable Tech Expo).

The possibilities for such devices are incredible:

> By tapping into sensors around the body, on objects and in other devices, they could offer what Plantronics, a headset maker, calls “contextual intelligence”, harvesting data to create “a highly personalized experience in real-time”, according to Joe Burton, the company’s CTO (Wagstaff, 2013, para. 9).

While significant developments will have to take place before the bullish predictions of many industry analysts can come true, the vision for such wearable devices is truly amazing.

It is impossible to talk about the wearable computing revolution without mentioning Google Glass. Essentially a computer mounted on a pair of glasses, this new technology has the potential to revolutionize not only the convenience

of mobile computing but also the very interactions that humans have every day. While numerous competitors have popped up, none have stirred up the type of buzz that Google's product has. The product is only available for developers currently but will eventually be available for consumer purchase.

On the device, a small screen is mounted directly in front of the eye, but according to Google, "[The] [h]igh resolution display is the equivalent of a 25 inch high definition screen from eight feet away" ("Google," n.d., para. 2). The glasses are directed by interpreted eye movements and vocal commands. The device can connect to the Internet via WiFi and can access GPS and SMS services. Users can direct Glass to send messages, take pictures, record video, give directions and do many other functions typical of a mobile device.

According to the Consumer Electronics Association's Susan Schreiner, Google Glass is a new disruptive technology.

> These high tech glasses have the potential to take interaction to the next level by replacing swiping with voice commands, head gestures and simple tap controls to display and capture information, photos and videos in front of one of your eyes. This futuristic technology holds the promise of creating compelling user experiences that will fundamentally change how people communicate, socialize, entertain and collaborate… (Schreiner, 2013, para. 2).

Google Glass is opening up many opportunities and has the potential to change many current paradigms.

For instance, because Google has decided that display ads will not be displayable through the platform, advertisers will need to work to push their content in new ways. Restaurants and other businesses will have to learn how to adapt to the possibility of patrons entering their establishments with such devices (McDermott, 2013, para. 13). If adopted by mainstream society, Glass has the potential to affect many real-world interactions.

Another wearable technology space seeing significant investments is the "smart" watch. Traditional hardware giants, Sony and Samsung and upstart Pebble are all investing into the vision of producing a watch that can do more than just tell time.

These watches typically have sharp resolution displays and are highly customizable. They can run light applications and usually pair with mobile phones to provide additional capabilities (usually through Bluetooth). Ultimately such smart watches do what a regular watch does best (tell time), yet offer additional capabilities through applications and widgets.

Another segment of the wearable computing revolution is related to tracking fitness activities. Nike's FuelBand, the Fitbit and the Jawbone Up represent a rethinking of the traditional pedometer by measuring data about everything from steps taken to calories burned to food consumption to sleep tracking.

These devices make tracking fitness-related activities much easier and interesting by typically syncing with a website that displays the information in a visually appealing way. Showing data in this way helps the user better evaluate the data, which provides incentive for the user to better modify their choices to accomplish their goals.

According to Dylan Tweney, executive editor at VentureBeat, fitness is the route through which wearables have entered the market most successfully so far. “To the extent that people are ‘wearing’ technology, it’s been through fitness-tracking bracelets like Nike’s Fuelband (which has probably sold 1 to 2 million units, according to estimates), not geek-chic eyewear like Google Glass” (Tweney, 2013, para. 12). While these devices may seem silly or unnecessary to some, their manufacturers have taken advantage of the hype surrounding wearable computers and have established a core base of users critical to achieving mass acceptance.

New technologies are enabling this sudden growth in wearable computing: “This surge is driven by miniaturization, new power sources and materials that are enabling the next-generation of sensors in head-up displays, wristbands, smart watches, smart glasses, jewelry, clothes and even contact lenses” (Schreiner, 2013, para. 7). Because wearable technologies typically need to unobtrusive to be socially acceptable (and thus to be accepted widely), their success relies on this continued miniaturization trend.

Because wearable technologies are so new, it is hard to compare them to anything that has come before. As such, it is likely that some people will be uncomfortable with their use because of privacy concerns (Google Glass has spawned a group called “Stop the Cyborgs” (Schreiner, 2013, para. 4).). While some of these wearable technologies have predecessors that they are easily compared to (smart watches to regular watches, the Fitbit to a traditional pedometer), others such as Google Glass truly have no predecessor and represent a new market (Google Glass and eye glasses aren’t comparable due to different uses/purposes.).

Because wearable technologies are so new and promising, many companies are eager to invest early. Juniper Research is predicting “smart watches, wearable fitness devices and head-mounted displays will bring in $1.5 billion in revenue by 2014. And according to a report from IMS Research, wearable technology will represent a revenue opportunity of $6 billion by 2016” (Schreiner, 2013, para. 6). Jeff Orr, a mobile industry analyst, estimates “that there will be 1.2 million smart watch shipments worldwide this year, 7 million in 2014 and 140 million in 2018” (Fiegerman, 2013, para. 5). As new companies such as Apple and Samsung, among others, join this segment, these have the potential to grow significantly.

Without the investment of the big five (Apple, Google, Microsoft, Amazon and Facebook), wearable technologies will likely not achieve mass diffusion: “These platforms — and their developer communities — hold the key to the consumer connection and have the power to elevate wearables from geeky hardware to more mainstream uses” (Epps, 2012, para. 4). As these platforms (and others) invest in these technologies, wearable technologies have the potential to find mainstream acceptance. Key to finding this acceptance is the continued trend of investment from the big players in the technology industry.

We are still on the bleeding edge of the development of many of these technologies. As companies invest in them, individuals will find these technologies easier to access and evaluate. As they stand now, many are prohibitively

expensive and only slightly more helpful in a few areas than their predecessors. Currently, many are simply expensive toys, not "must haves." Until these devices find funding and development from major industry players, they will likely struggle to achieve mass acceptance.

Smartphones

"Today, almost three-quarters of the world's people carry a wireless phone." (Hotz, 2011) We can see all around us every single day the effect smartphones have on the world and our generation specifically. In 1947, the concept for cellular phones came about after examining the car phones that were in existence. Unfortunately it wasn't until 1977 that a prototype was built by AT&T and Bell labs (Bellis, n.d., para. 6). Cell phones changed the way people lived and with the development of the smartphone, life for people all over the world got a little bit easier. Smartphones are handheld devices that go far beyond the simplicity of cell phones. They are a handset that can be used for the same purpose a cell phone was developed for, making phones calls wirelessly and on the go, but they include characteristics like a camera built in as well as web capabilities, and a wide range multi-media options. Powerful micro-processors work behind the scenes within a smartphone to keep them running smoothly and to have the capabilities of running multiple functions or apps at the same time ("What Are Smartphones?," n.d.). Smartphones have progressed greatly in their capabilities as well as what they come equipped with.

Since the first smartphone was announced in 1993 by BellSouth, they have advanced to a more modern state and their evolution is no less than amazing (The Evolution Of Smartphones, 2009, para. 1). In 2007, Apple Inc released the first iPhone. It was the first mobile phone to use a multi-touch interface.

In addition to making phone calls, sending text messages, and using voicemail, smartphones come with immense internet capabilities. They also feature the ability to access digital media and a never-ending choice of digital applications. Smartphone users can easily add their photos or videos to their devices to view them on the go. Applications, or small computer programs provide the user the capabilities to perform several different functions. You name it, there's probably an app for that! Apps allow users to have practically anything at their fingertips and in their pockets. Everything from checking sports scores, to finding a great restaurant, and the directions to that restaurant, to downloading a simple game to pass the time have made smartphones one of the most core pieces of technology in today's world ("Basic Features of a Smartphone," n.d.). Along with many of these emerging capabilities unfortunately comes some issues. Even though smartphones capabilities are through the roof, it is becoming harder and harder to develop batteries fast enough to hold a charge long enough to keep up with the emerging technology. In an article titled, "All power to the smart phone" in *Engineering & Technology,* Christian Edwards writes, "The good news is that smartphones are geared up to crunch through

a lot of data in delivering audience-grabbing apps and internet services; the bad news is all this new funky stuff is more juice-hungry, placing new drains on battery staying-power" (Edwards, 2013, pg. 66).

The first iPhone was introduced in 2007 and featured the first mobile phone to use a multi touch interface. Since that release, Apple is now on its 6th version of the iPhone. The most recent development in iPhones in the iPhone 5 released in September of 2012. It features 4G network capabilities, a 16:9 display and the ability to capture panorama images with the built in camera (Bergmann, n.d.). iPhones feature iOS technology using a computer operating system developed by Apple Inc. "...[T]he iPhone OS has seen a rapid rise in popularity and garnered a large and dedicated user base. The iPhone OS has risen so far and so fast primarily due to the innovations on user interface and availability of 3rd party applications" (Wei, Chandran, Chang, Chang & Nichols, n.d.).

In competition with Apple's OS system, HTC created the first Android system phone in 2008 (The Evolution Of Smartphones, 2009). Android was obtained by Google in 2005 and thrust Google into the smartphone game. It was designed to further the development of smartphones for business (Chowdhury, n.d.). There are a number of devices that support this adaptable interface. For example more devices and brands, which use an Android interface, include, HTC, LG, and Google phones (Segan, 2013).

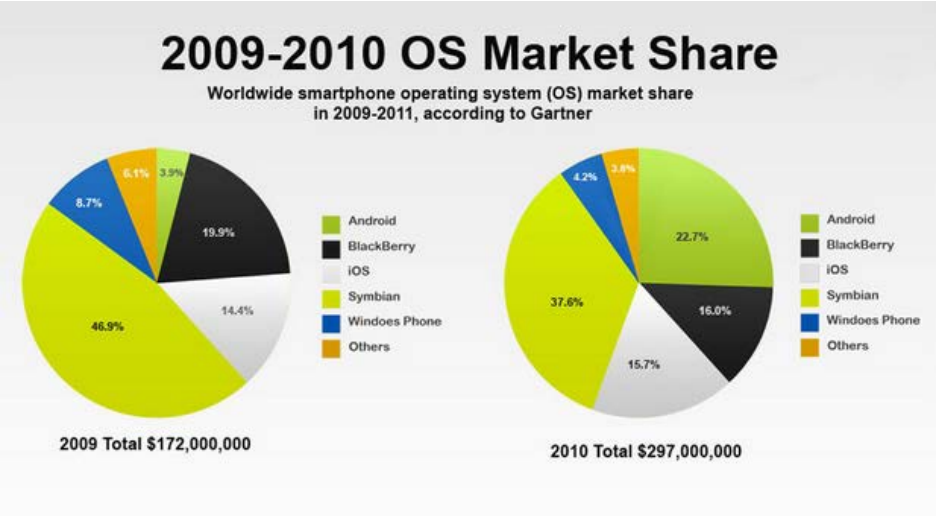
The speed of internet on smartphone devices has grown immensely since the development of web capabilities. Many devices today have a speed of around 1.3-1.7 GHz comparable to a 620 MHz CPU in 2007 for early touchscreen devices (Segan, 2013; Willans, 2012).

Applications have come a very long way since their development in the early 2000s. There are currently a total of 6 major app stores including the App Store for Apple iPhone, the Android Market for Google Android, the Software Store for Palm, App World for Blackberry, the App Catalog for Palm and HP, and the Windows Marketplace for Windows Mobile. In 2009, Apple brought in $2.4 billion dollars in app revenue compared to the Android Marketplace which brings in approximately $60 million every year (Rosales, 2011). As the app stores continue to grow so will the emerging technologies of smartphones.

Smartphones allow the user to do everything a normal phone is able to do plus browse the internet and enabling the user to be more productive. Only one device is needed to do things that would normally need multiple devices to perform functions. They allow users to be with the times of staying connected, being productive and to be entertained. The functions of smartphones are now familiar to most users. Most now know how to communicate, use the internet, take photos and video, download apps and music, and to integrate social media. People can easily try phones in stores, as well as watch videos online of others' reviews of different devices. Product demonstrations are a crucial part of people being able to try the product before signing off on a long-term commitment with a phone operating company (Canhoto,

2012). 56 percent of mobile subscribers use smartphones (Rogowsky, 2013). We see them all around us everyday.

Smartphones are changing the way people live. "...[A]ccording to Gartner, Inc. Worldwide smartphone sales to end users reached 225 million units, up 46.5 percent from the second quarter of 2012." Samsung is currently the no. 1 position in the market globally. Samsung's sales increased 29.7 percent since last year while Apple's increased only 10.2 percent. "'Smartphones accounted for 51.8 percent of mobile phone sales in the second quarter of 2013, resulting in smartphone sales surpassing feature phone sales for the first time," said Anshul Gupta, principal research analyst at Gartner" (Gartner, 2013, para. 2).



The next five years and beyond will bring amazing advancements in smartphone technology. Apple plans to announce the new iPhone 5S this week. Apple and other smartphone companies alike will continue to grow and perfect smartphones for the future.

According to Hongkiat.com, "Augmented Reality" will be a new feature in the next few years. This term "refers to what we perceive through our senses (usually sight) enhanced through the use of computer-generated sensory input such as sound, video, graphics and GPS data." It will use computer data combined with what we see in real life to display more information. Kongkiat.com uses the example of pointing your smartphone camera at somewhere to get an information overlay of where you can find something nearby. Another technological advancement over the next few years could also be flexible screens. Michael Poh (n.d.) describes this new technology as Organic Light Emitting Diode technology that will allow a smartphone to be folded and unfolded to maintain a small size but allow for better viewing like that of a tablet. A third advancement could be a built-in projector. An example of this technology would be the already released Samsung Galaxy Beam which features a built in DLP or Digital Light Projection which projects smart phones up to 50 inches in size on a flat surface. Finally another important revolution with smartphones will be 3D capabilities and holograms. "Smartphones may have already reached the peak for their screen resolution with Apple's 'Retina Display', which actually provides a resolution that is sharper than what the human eye can perceive." But why stop there? There are already 3D smartphones on the market but taking it to the next level could mean holographic projections (Poh, n.d.).

With all of this comes amazing technologies as well as advancements that we cannot even comprehend. It is truly amaz-

ing how far smartphones have come over the short time they have been in existence.

Digital Cameras

In 1987, James McGarvey designed the first digital single-lens reflex (DSLR) camera. He had been working with Kodak under contract with a government agency which took the finished product, never to be seen by McGarvey again (Gustavson, 2012).

"After that we took that basic design, repackaged it a little bit, and made two of what we named Tactical Cameras," McGarvey said in an interview with *Image*. "They are the second and third DSLR's ever created" (Gustavson, 2012, p.29).

Over the next several years, many changes and modifications were made to the DSLR camera. It wasn't until the 2000s that a viable consumer DSLR came into play, this time with more affordable, lower-end models by Nikon and Canon (Gustavson, 2012).

A DSLR camera has a viewing system is which light passes through the lens, is bounced off a 45 degree mirror and into the prism, then turned the proper way so the viewer is seeing what the lens sees ("Choosing a Digital SLR," 2011). One of the most distinguishable features of DSLRs is interchangeable lenses. Whereas a regular digital point-and-shoot camera has a fixed lens, the DSLR has the ability to switch out different lenses in accordance with the desired task.

Most people are familiar with the capabilities of digital cameras, whether a basic point-and-shoot or a more advanced DSLR. Different settings such as "landscape," "portrait," "macro" and others featured on a basic point-and-shoot allow the user to get the desired picture without much hassle. DSLRs also have auto settings, but there is more creative range for users to manually capture the desired photograph, by changing lenses, shutter speed, aperture and various other settings. There are pros and cons to both kinds of digital cameras.

With the increasing popularity of smart phones over the past several years, many people have gradually put their digital cameras to the wayside, instead using their more portable and interactive smart phones to do the job. In fact, as of last year, the most popularly used camera on the photo-sharing site Flickr is the Apple iPhone 4S (Gottesman, 2012).

Tim Moynihan (2012) speculates in an article for *PC World*: "Smartphones, not cameras, are leading today's digital-photo revolution, thanks to a combination of convenience, connectivity, photo-sharing apps, and ever-improving imaging capabilities."

However, even Moynihan admitted that he doesn't think smart phones will replace digital cameras. Instead, he thinks that the increased interest in photography by smartphone users may eventually lead them to invest in more capable cameras (Moynihan, 2012). DSLR cameras offer advantages that smart phones cannot yet match, advantages such as speed, image quality, storage and low-light performance (Gottesman, 2012). Though smart phones can act as a substi-

tute for an everyday point-and-shoot digital camera, they can't produce the high-quality photographs that a DSLR camera can.

One of the biggest advantages of smart phone cameras is the ability to instantly upload pictures to various social media sites. In light of this, developers have been working to perfect a wifi-enable digital camera. The first wifi-enabled digital camera debuted in 2005 with the Kodak EasyShare One (Moynihan, 2013). In September 2012, Canon released the first DSLR to have in-camera wifi and geo-tagging capabilities, sporting a price tag of $2100 for the body only ("Tech Spotlight," 2013).

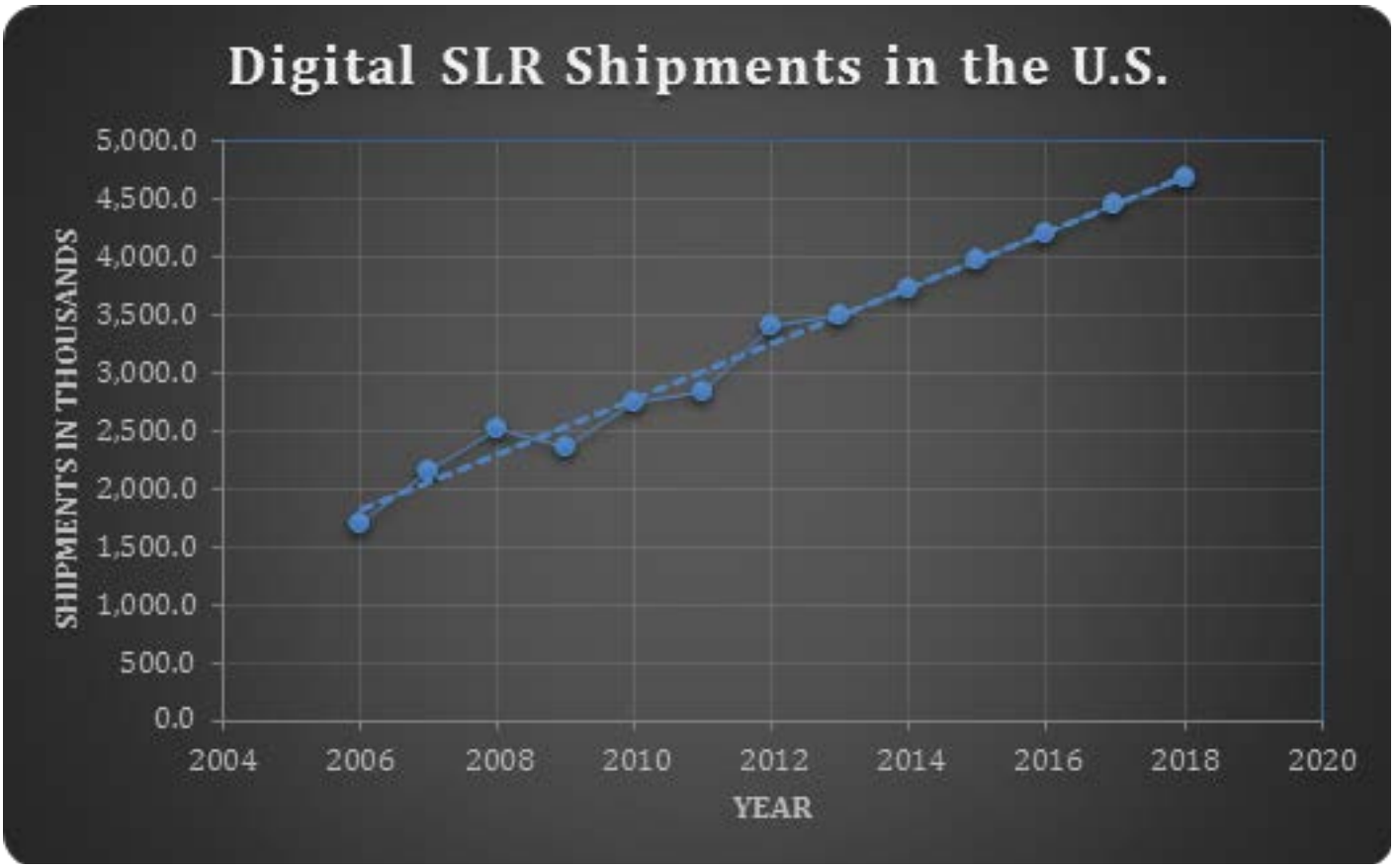
Since wifi-enabled DSLRs are relatively new, the question that surfaces is: How will this innovation in the realm of digital cameras be accepted by the photographers, both the amateurs and the more experienced? In answering this question, it is essential to begin by evaluating the perceived advantages of such a device. Obviously, the ability to post photos online from a high-quality camera is a big advantage in this day and age. Image-quality will be much higher than smartphone pictures and photo-sharing will be much easier than with typical DSLRs.

Next comes the question of compatibility. How consistent is the device with the needs of potential adopters? In the case of a wifi-enabled DSLR, the device is very compatible. It meets both the needs of high image quality and instantaneous photo-sharing. One downfall might be the issue of price. Two thousand dollars could be a deterrent for the less-dedicated and invested photographers. In this case, there are wifi-adapters available - professional adapters, consumer adapters or mobile wireless cards - for those unwilling or unable to purchase a new wifi-enabled camera body (Iverson, 2012).

Although this device seems to have solid benefits, some remain skeptical that wifi-enabled DSLRs will return a great profit.

"It will take cellular connectivity, not Wi-Fi connectivity, for cameras to match the share-anywhere features found in smartphones," writes Moynihan (2012). "And as anyone with a smartphone knows, the convenience of being able to share photos from anywhere is bound inextricably to the complexity of data plans and two-year contracts."

Over the next five years, wifi-enabled digital cameras may become more popular, but the convenience of the smartphone will be a difficult factor to overrule. Canon and Nikon will continue to be the leaders in the digital camera industry, but their wifi-enabled products will not likely rival the smartphone buzz. Even so, digital cameras as a whole and DSLRs in particular will continue on a steady course into the future.



Projection data gathered from: DIGITAL IMAGING. (2013). *TWICE: This Week in Consumer Electronics*, 28(1), 126.

Content

Broadcast Audio and Radio

Broadcast audio content has changed significantly over the years. One can see that broadcast audio has not only changed the types or categories of content, but also the delivery method has been through several significant changes over the years. Advances in technology have played a significant role in these developments, but there have also been developments in professional approaches to broadcast communication that have changed the way that broadcasters develop on air content and scheduling. One must understand the history of broadcast radio before one can understand how the medium and content has changed over the years.

Radio was a concept that no one ever thought of before certain technological advancements happened. The first major step on the road to radio happened with the development of the telegraph by Guglielmo Marconi. Marconi's invention allowed people to transmit information much faster and over longer distances than they had ever been able to before (Balk, 2006, p. 20). The rise started speeding up when Hugo Gernsback co-founded the Electro Importing Co. and

started a mail-order parts company selling various items including a Morse code transmitter (Balk, 2006, p. 24). Later, he invented and started selling a highly successful crystal radio set and America launched into a new phase of amateur radio operators (Balk, 2006, pp. 24-25). Radio as we know it did not start until KDKA came into being in October of 1920, broadcasting the results of the election (Balk, 2006, p. 36). The industry kept growing and survived several changes, all the while constantly adapting. As the industry grew, the need for talented people to entertain listeners grew as well. Stations were looking for people to sign on and off as well as do general announcing (Balk, 2006, p. 55). Other talent included local music talent and the announcing talent grew into popular show hosts. Comedy and radio theater also became widely popular programming among many other things. Radio continued prospering, and the U.S. government created the Federal Radio Commission to regulate the industry, with the Federal Communications Commission following shortly thereafter (Balk, 2006, p. 132). The FCC continued creating laws to ensure that things like frequency battles did not happen and to make sure that the content aired was appropriate for the public.

Radio has survived the rise of television and the internet. People predicted its death both times, but the medium has managed to adapt to the changes and continue to reach people. One might find it interesting to hear the thoughts of someone before television became popular regarding pros and cons of the two media. The author says, “We must bear in mind also that television requires a darkened room (decidedly inconvenient at home in the daytime) and calls for all one’s attention” (Codel, 1971, p. 314). This statement may seem rather humorous today, considering the raging popularity of television and television shows delivered over various platforms. Radio managed to adapt to the rise of the internet as well. Rather than remaining stagnant, radio stations started using the internet as an asset to serve listeners in new and exciting ways.

Today, many radio stations employ the internet to stream their signal to anyone who wants to tune in. Loyal listeners can even tune in to their favorite hometown radio station when they are out of range for the terrestrial broadcast. Satellite radio has also become widely popular, with many people paying subscriptions to receive the service. Thanks to the development of targeted broadcasting, listeners have a wide array of radio station formats to choose from. Listeners can choose a radio station focused on any number of genres of music, talk, or news radio and listen from anywhere with internet access or within range of the station. Another important consideration to remember is radio is no longer exclusively a broadcast audio medium. One must realize that media is increasingly integrated, so there is no longer the idea of strictly broadcast audio or video media. Now, a radio station may have multiple social media accounts, a website, regular podcasts, an app, and video features, all to better connect with listeners. A listener can interact with their favorite DJ by tweeting at them or commenting on a status while listening to them on air. The listener can also see photos posted by the station of events, staff, and other graphics, making the traditionally aural media increasingly visual. However, radio has encountered the new challenge of personalized online streaming services such as iHeartRadio, Pandora, and others. The development of the connected car also presents some challenges as well as opportunity. An article stated, “Every

car manufacturer is now equipping their cars, from the most basic to the most luxurious, with connected 'infotainment' dashboards. Ford has sync, Holden has mylink and Toyota has entune" (Radio Info, 2013, p. 5). This change will not necessarily happen overnight, though. Arbitron argues, "These new systems will take some time before they reach critical mass. Polk estimates that the average light vehicle in the U.S. is now 11.4 years old. Thanks to a combination of higher quality vehicles, less driving, and the economic downturn, individuals are keeping their cars longer" (Arbitron, 2013, p. 5). This allows some time for radio broadcasters to figure out how to take advantage of yet another technological development in the world of digital communication. Buzz Knight puts it well when he says, "When I think about the significance of our current and future battleground, I think of Charles and how all of us today must maintain our very high level of curiosity about the future of technology, and the present and future for the connected car" (Knight, 2013, p. 5). Some possibilities have opened up in the field of targeted advertising. The technology already exists for television and video streaming services. The Journal of Business and Economics says, "The concept of addressable advertising is the ability for advertisers to 'create a profile of the type of person they would like to have view their ad, and then a digital delivery system delivers the ad each time an opportunity arises to reach people who match the profile" (DeBray & Kamal, 2011, p. 72). This would allow radio to sell advertising at higher rates due to the increased effectiveness of the advertising. This would also help keep the medium profitable so that it can continue to improve and not only survive, but thrive.

Technology tends to be unpredictable, so it is difficult to make any sure predictions about the future. I can see that things are changing quickly enough that in five years, the media market could look completely different than it does today. I see the connected car playing a huge role in the future of broadcast audio, and I can also see personalized music services such as iHeartRadio and Pandora competing with broadcast radio. At the same time, I see a huge opportunity for radio to jump into the new realm and take advantage of many new technologies, including the targeted advertising mentioned earlier. Satellite radio will continue, but I do not think that it will be as popular as the free listening apps, even if Rick Munarriz says, "Sirius XM topped 25 million subscribers this year, and that number is likely moving higher still in the current quarter that ends in a few days. Technology has been more of an asset than a liability to Sirius XM, and that's why Ford's deal with Livio -- just as introducing SYNC and SYNC AppLink before that -- won't hurt Sirius XM" (Munarriz, 2013, p. 8). I still think that many people will still rather listen to a free service than a paid subscription service. I think that radio broadcasters will figure out new ways of distributing their content using the connected cars and we will see many more examples of integrated media as time goes on. I can picture the radio app linking to the website, consumer-specific advertising, special content accessible within the app such as podcasts and artist info, and other amazing developments. The future is bright for radio broadcasting thanks to all of these new avenues for communication.

Online Video

There are a number of movie sources available online for downloading and viewing movies. These include Netflix, Amazon Instant Video, iTunes, Hulu, Vudu. Some sites (Netflix, Amazon, Hulu and Vudu) allow you to view with a subscription. Hulu allows free viewing with ads, more options with a paid subscription. Amazon, iTunes and Vudu allow purchasing of videos (Associated Press, 2011).

The internet is extremely capable of serving as an alternative delivery vehicle for VOD (video on demand) content, though with some limitations. It is fully capable in that we've seen a substantial change in delivery options through this. Where once you had to purchase or rent DVD's (Blockbuster, Netflix, Redbox) now you can watch anywhere with streaming. The option is available through nearly any device, including laptops, computers, phones, tablets, anything with an internet connection. There are also numerous set top boxes now to support this, such as Roku and Google Chromecast as well as most modern game consoles possessing this capability.

"'The VoD model initially held many of the studios back but it seems customers do want this and studios are now responding, having learnt the lesson of the music industry which failed to react in time," says Casey. "There's no real evidence to suggest that VoD is in fact cannibalizing the EST market," (Pennington, 2011).

There are limitations though, in that there is squabbling between companies and cable executives. Netflix lost a contract with the network Starz after refusing to pay out $300 million for their contract, where it existed before at $30 million. Hulu encounters similar issues, which is not hopeful knowing it is owned by some cable companies (Laitinen, 2012). The problem, though, is a lack of a proven replacement business model. While consumers are opting to sign up for OTT services, like Netflix, they prefer to use them for VoD rather than digital electronic sell through (Pennington, 2011).

Content provided online is largely redistribution of content that was made available for television. Some services, such as Netflix and Hulu, allow the user to view this content on demand so long as it is available. Other services like Amazon Instant Video and iTunes allow the purchasing of videos and movies. There has been a recent push over the last couple years for the creation of original series solely for online distribution. Netflix has begun releasing its own original series, including "Lilyhammer," "Orange is the New Black," and "House of Cards," (Prince, 2013). "Netflix dominates US broadband downloads, accounting for 28.7% of peak downstream traffic in the country, according to research from Sandvine. The survey found that real-time entertainment applications will represent 55-60% of peak aggregate traffic by the end of 2011 and that the engine for that growth is Netflix. Just two years ago, Netflix was a US-only, DVD mail order service with ten million subscribers. It has since more than doubled its subscriber base and increased revenue from $493.7m to $718.6m 2010-11 by moving into online streaming with its sights on Europe," (Laitinen, 2012).

As for differences between video on demand online and theatrical releases of movies, it is noted that the window between the two "has compressed even further into a window that opens right into the theatrical run." Premium VoD is available up to 60 days following theatrical release for a fee of around $25-30. Adriana Whiteley, managing partner at Farncombe Consulting, suggests that compressing windows is imperative to combat piracy. The number of illegally downloaded films in the UK has risen 30% in five years, according to internet consultancy Envisional. It reports that the top five box office movies were illegally downloaded in the UK 1.4 million times in 2010 and that the top five TV shows like US imports Glee and House were pirated 1.24 million times - up 33% from 2006.'The release windows format is a valuable business model for studios, so they will not abandon it so soon - however, the internet is a catalyst for and cannibalizes viewership from impatient viewers that would otherwise happily pay for content,' says Whiteley. "The studios had to react,"(Pennington, 2011).

The internet has a great likelihood of being an alternative delivery route for HDTV interactive programming. This largely plays out through social media. Kate Bulkley writing for The Guardian notes that shows such as The X Factor, IT crowd and The Apprentice each have social media editors whose specific jobs are to create conversations and methods through social media for fan interaction (Bulkley, 2011). It is noted that, "The influence of the twittersphere can disproportionately impact on a show, so if there is a torrent of abuse, or the other way around, a torrent of love, that shines a spotlight that is definitely a factor in commissioning meetings." According to Simon Nelson, a former controller of BBC Vision (Bulkley, 2011). Fans are further able to interact through Facebook and other social media platforms. Another example of this is the X Factor hosting live auditions through Youtube (Bulkley, 2011).

The main limitations that currently exist for providing TV and movie content online are broadband internet speeds. Matt Warman, consumer technology editor for the Telegraph, tested online video connections across several areas of the UK. He said that despite progress being made on raising average broadband speeds across the UK, many households are still unable to take advantage of web-based TV viewing. "Rural areas in particular struggle to offer services that are able to cope with streaming video online, accentuating the so-called 'digital divide'," Mr. Warman stated, "While urban areas offer typical broadband speeds of 6.9Mb, which is sufficient to stream the BBC iPlayer, rural areas on equivalent tariffs receive an average of just 3.6Mb" (Folkard, 2012). It should be noted that 720p HD stream will take approximately 4Mb of bandwidth (Folkard, 2012).

Dan Rayburn writing for streamingmediablog.com notes from a report they conducted that, "A majority of executives, 59%, say bandwidth limitations are currently the leading technical obstacle to OTT adoption. Quality of service and quality of experience—which may also be related to bandwidth issues—is also seen as an obstacle by 55%" (Rayburn, 2013). OTT in this case stands for "Over the top," or the distribution of content without the use of an intermediary cable

company. Online video would be OTT content.

There is great opportunity and room for continued growth in the production and distribution of online video content. Where once video content was distributed over television by cable companies, we now see a continued push for programs to either become available online, or in the case of some companies, be produced solely for distribution online.

Mobile Video

Mobile video is a growing aspect of our culture not only in America, but in the world. As we become more integrated with our handheld devices, such as our phones and tablets, we rely on mobile video that much more. Our phones used to get smaller because they were easy to carry and they were light weight. Now phones are becoming bigger because people want bigger screens on their phones. Tablets would most likely have not even come out if people didn't want a handheld device with a larger screen.

One reason mobile video has become so popular is the internet. With online video providers like YouTube, Hulu, and Netflix, people want to get, send, and receive videos over the internet from their handheld devices. The Bell Labs Technical Journal puts it like this, "With the explosion of video traffic on the Internet and end users' intrinsic desire to have freedom of movement, the delivery of video over mobile access networks to mobile end user devices will become increasingly essential in the coming years. In fact, mobile video traffic is already over 50 percent of mobile data traffic and will account for 66 percent of global network demand by 2015" (Miller, 2012, p. 49).

Another aspect of mobile video that is really big is mobile gaming. Ever heard of this little game called Angry Birds? With the quality of screens on mobile devices going up, the gaming market on these devices is growing as well. "Demand for mobile games is fueled by three main factors: many users of mobile devices are potential consumers of mobile games; the ability of mobile devices to deliver quality video and audio continues to improve significantly; the improving ability of wireless networks to handle broadband transmission, allowing users of mobile devices to download larger and more compelling games," says Jason Soh (Soh, 2008). With the concept of mobile gaming comes different ways to attract a new audience. Mainly the female audience will be targeted more with mobile gaming. Most females don't own a game console or play games on the computer, but almost all females own a cell phone or tablet or both. "The ability of mobile devices to deliver quality video and audio continues to improve significantly," (Soh, 2008, p. 36).

Mobile video has changed the landscape forever. People are watching videos on their devices, sharing videos on their devices, and they are taking videos on their devices. The video aspect of a smartphone has one of the most inter-

esting features about the phone. People are now seeing things better than ever with new resolutions on their phones or tablets. Watching T.V. shows on a handheld device is more common now since people are watching seasons of shows on Netflix and Hulu to catch up with the series. Mobile video is the main reason for the cell phone getting larger in the past five years.

Mobile video will only continue to grow as we get better phones and tablets. The fact that people are willing to have bigger phones in order to have a better viewing experience on their devices shows that mobile video is going nowhere but up. In five years, cameras on phones will be very precise with high resolutions.

Policy

Intellectual Property Rights: De Minimis on Television/Movie Sets

There are many instances when copyrighted work is used without permission in film or television on sets or on location. “A product of the intellect that has commercial value, including copyrighted property such as literary or artistic works, and ideational property…” is referred to as intellectual property (Intellectual property rights, n.d., para. 1). Artistic works and other copyright enabled works have a certain amount of protection on them from when they were created. When a copyrighted work is used in a film or other type of production or medium, there must be a certain permission given by the copyright holder to use that work. When a work is used without permission, there is potential for a copyright holder to take the user in violation of that copyright to court.

This is where “fair use” comes into play. The court must determine whether or not the use of the work constitutes “fair use.” “The most important limitation on the protection against reproduction of a work is ‘fair use.’” In determining the use of a work is in fact “fair use,” there are four factors that must be considered. The first factor is, that “…the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit education[al] purposes…” (Baker, 2013, p. 10-22). The second factor is to determine what is “the nature of the copyrighted work.” This refers to whether the work can be constituted as “informational” work (e.g., news, scholarly writings, and/or research) or as “creative work” (Baker, 2013, p. 10-22). The third is “the amount and substantiality of the portion used in relation to the copyrighted work as a whole…” (Baker, 2013, p. 10-22).

A case dealing with the substantiality of a work is Harper & Row, Publishers, Inc. v. Nation Enterprises. Under this case was an unauthorized use of quotations from a public figure’s unpublished manuscript. The quotes were admittedly used verbatim. The use also infringed on confidentiality and creative control. The use was also found to have an effect on the market for first rights to publish quotes from the book. The court ruled that the use of the quotes was not permissi-

ble. Finally, the last factor to be considered is, "the effect of the use upon the potential market for or value of the copyrighted work."…[T]he U.S. Supreme Court has recognized that '[t]his last factor is undoubtedly the single most important element of fair use'" (Harper & Row, 1985, at 566). An effective example case of the idea of "fair use" is the case of Bill Graham Archives, v. Dorling Kindersley Limited. In this case, there was an alleged infringement of copyrights to artistic images originally depicted on concert posters and tickets for a musical group. In a biography created for a musical group, publishers used those images with the defense that they were using the images to document history. The court moved in favor that the publisher's use was to document history, which was different from the initial and original expressive purpose of the images (Bill Graham Archives, 2006).

In "fair use," a work must be used for a "transformative" purpose. This "…means that the copyrighted work is not simply being copied in a way that could take the place of the original, but that something is added to it that "transforms" the work into something that has new, original elements…" (Baker, 2013, p. 10-18) The key court case that was the first to implement the fair use changes to the Copyright Act in 1976 was Campbell v. Acuff-Rose Music, Inc. This case included the creation of a parody of a song without permission from the original works' copyright holder. Basis for the ruling of the parody being determined unfair under the first factor under 107 of the Copyright Act of 1976 by the Court of Appeals was that the parody took the heart of the original and made it the heart of a new work because they had taken too much of the original. Another basis of this decision was that there was shown to be harm to the market of the original work. The District Court ruled that the song was not a fair use. Future courts applying the Supreme Court's fair-use analysis must ensure that not just any commercial take-off is determined as a parody (Campbell, 1994). The courts in a lawsuit dealing with the use of a copyrighted work in television or film, in regards to set dressing, must establish the use of the work as "fair use" and even before that determination, they must conclude whether or not the use of the work follows the concept of "de minimis."

Before determining anything, including whether or not the use of a work constitutes a "fair use" according to these four factors, the courts must first address the concept of "de minimis." "De minimis," is "a legal term that basically means that there are some things too trivial to be considered by the law" (Baker, 2013, p. 10-23). "De minimis" is a separate concept from "fair use." When declaring "de minimis" as a defense in law, it has to be for the claim of using a very little amount of a copyrighted work. For example, this can include, for set dressings and locations, the length of time on screen, the prominence of an image or other copyrighted work, how much of the actual work is shown or covered up, and many other factors. "De minimis" is the first threshold that must be passed in order to continue on with a lawsuit claiming a copyright infringement in a film production.

De minimis as the threshold of what every lawsuit involving use of copyrighted material in set dressings includes many factors and guidelines to uphold it as a defense. According to Dr. Baker's law reading 10.2, "Fair Use", "Prior to this case, no court had dealt with the question of whether or not a brief appearance of a copyrighted work in a TV program

or film provided enough of a "use" of the work to become an infringement" (Baker, 2013, 10-24). When the courts begin considering a de minimis defense, they must address three different factors, which should be considered as separate entities but are all still related. The first factor is, "…a technical violation of a right so trivial that the law will not impose legal consequences." The second, is the requirement that, "copying has occurred to such a trivial extent as to fall below the quantitative threshold of substantial similarity, which is always a required element of actionable copying." Finally, the third is, whether or not the use was so fleeting as to qualify for "fair use" protection" (Ringgold, 1997, at 74). De minimis also refers to "the amount and substantiality of the portion used in relation to the copyrighted work as a whole" (Ringgold, 1997,at 75). There are many factors that come into play when determining a use as de minimis.

Ringgold v. Black Entertainment Television, Inc. was the case that established the use of the de minimis defense. The plaintiff appealed a grant of summary judgment from the United States District Court for the Southern District of New York in which it was ruled that a poster of an artistic work was used as a set decoration on a television program was of "fair use." The television stations based their defense of the use of the poster on two grounds. First, on the grounds that the use of the poster was minimal, or de minimis, and second that their use was a permissible fair use by section 107 of the Copyright Act. The poster when seen was only visible for seconds at a time in multiple segments in duration of 26.75 seconds. The factor of taking into account the purpose and character of the use fails in this particular case to assess the decorative purpose for which the artist's work is used. The factor of the effect of the use on the market was legally flawed because the artist was not required to show a decline in the number of licensing requests for the poster since the show had aired. The court reversed the summary judgment granted in favor of the television stations and sent back the case to the lower court for further consideration of the artist's claim (Ringgold, 1997).

Another particularly important case, which references other key cases, is that of Gottlieb Development, LLC v. Paramount Pictures Corporation. In this particular case, the plaintiff was a pinball machine distributor. They claimed that the defendant, Paramount Pictures Corporation had been in violation of the Lanham Act for trademark infringement. Allegedly, Paramount became involved in copyright and trademark infringement, unfair competition, and deceptive trade practices. They were accused of this on the basis that they had used a pinball machine, which characterized copyrighted designs and trademarks owned by the plaintiff, without Gottlieb Development's permission. The court determined that the use was de minimis, or very minimal. This decision was on the basis that the scene in which the pinball machine was shown for simply seconds at a time was only three-and-a-half minutes in length. The pinball machine was always in the background, was never mentioned, and played no role in the plotline. This case never made it to a determination of fair use because it did not pass the threshold of de minimis (Gottlieb Development, 2008).

De minimis is determined by quite a few factors. Based on the case of Gottlieb Development, LLC v. Paramount Pictures Corporation, a few boundaries under which de minimis would hold when designing a set includes the length of time the pinball machine was shown. It was shown sporadically for a few seconds at a time in a time span of only three-

and-a-half minutes. The pinball machine was also always in the background, was not mentioned in the dialogue, and had nothing to do with the plotline. Another key factor about this case, which can be addressed when considering a de minimis defense, is that there was no likelihood of confusion for no viewer would conclude that the defendant sponsored the pinball machine or that the plaintiff sponsored the movie (Gottlieb Development, 2008). The case of Ringgold v. Black Entertainment Television, Inc. also brings in a few factors considered in a de minimis defense. In this case, "…[t]he photographs are displayed in poor lighting and at great distance. Moreover, they are out of focus…" (Ringgold, 1997). In these cases, we can see that factors that are considered when arguing a de minimis defense include the length of time the work is showed, whether it was prominent in a shot, whether it is mentioned in the dialogue, whether it has anything to do with the plotline, if there is a possibility of confusion that the copyright holder's work sponsored the production and vice versa, the amount of lighting and whether or not the work is in focus.

In Ringgold, the court looked at the fact that the poster was only visible for seconds at a time. They came to the same conclusion of de minimis. All of the factors of these different cases compile a standard for a de minimis ruling. They also determine what evidence that must be passed in order to continue on with a trial to the application of a fair use analysis.

In conclusion, the courts in a lawsuit dealing with the use of a copyrighted work in television or film, in regards specifically to set dressing, must first establish the use of the copyrighted work as a "de minimis" use. If the courts determine it surpasses the standards set for de minimis, then the lawsuit will continue on in exploring other factors to perform a "fair use" analysis. In the law of intellectual property rights, copyrighted work has the protection of the First Amendment and can be explored much further than in this paper. There are multiple cases that have referenced each other in regards to de minimis and fair use that can be looked at to learn more about both concepts.

Creative Commons Licensing

Today's Internet culture prioritizes sharing and the reciprocal relationships based on content creation and consumption. In 2001 the Creative Commons Foundation was formed to make licensed sharing on the Internet safer for content creators and consumers. Simply, Creative Commons is a legal licensing system in which creators can voluntarily give away some rights to their work in order to allow others to use their work in new ways the original creator might not have envisioned.

Creative Commons was formed through a coalition led by lawyer Lawrence Lessig, who in 1999 was representing Eric Eldred, a man who ran a business that relied on reprinting public domain texts. In the 60s, 70s and 80s, Congress repeatedly extended the term of copyright lengths in what became known as the "Mickey Mouse Protection Acts" for their "mysterious" connection to the years in which Disney's Mickey Mouse copyright would have become public domain

(Geere, 2011).

When Eldred realized his business would be ruined by these acts, he went to court with Lessig as his legal representative. They eventually brought their case before the Supreme Court, arguing that extending copyright lengths was unconstitutional. During the litigation process, a name was suggested for a counter-movement: “Creative Commons” (Geere, 2011).

While the Supreme Court eventually ruled against Eldred, the case had brought together a common focus on creating a legal standard that would allow creators to give away some of their unneeded rights. Before the Supreme Court judgment was even handed down in 2002, the foundation launched a licensing system that would do just that (Geere, 2011). For instance, if a photographer wanted to make his images available for others to use freely, he could do so with the stipulation that he receive credit for his original work. This new system would allow creators to see their work used in new, unimagined ways, without losing all rights to that original work.

From the start these licenses would be simple and easy to understand, both by humans and machines:

> The licenses comprised of a commons deed -- a plain-language summary of the license, the legal code necessary to fine-tune the permissions being offered, and a machine-readable translation that let search engines differentiate CC-licensed content from those marked “all rights reserved” (Geere, 2011, para. 14).

By launching these initial licenses, Creative Commons renewed a cultural focus on sharing and remixing.

Lessig reflected back on his work in establishing Creative Commons in 2008: “It was intended as a grass-roots movement of creators, otherwise known as copyright owners, who would look at this default of ‘all rights reserved’ and say they don’t need all rights, the most they need is some rights” (Lessig, 2008). Those who agreed with this idea saw the benefit of allowing others to use their work in new ways.

It was clear that these licenses were popular from the beginning. Just one year after launching, one million works had been licensed through Creative Commons. By 2004, that number was five million; by 2005, 20 million; by 2006, 50 million; and by 2007, 90 million works had been licensed (Geere, 2011, paras. 17, 19). “Today, Creative Commons has more than 350 million CC-licensed pieces of content out in the wild, including albums by Nine Inch Nails and the website of the White House” (Geere, 2011, para. 22). Clearly the sharing culture was (and is) alive and well on the Internet. Looking at these numbers, it is a safe assumption to think that the growth of this trend will continue in the coming years.

Throughout that time the foundation progressively launched more licenses, which allowed for more nuanced control of a creator’s rights. Today there are six licenses that vary in how they allow re-creators to use a creator’s content. The licenses are:

- **Attribution (CC BY)** - Allows others to build upon an original work and use it commercially and non-commercially, with the stipulation that the original creator is credited.
- **Attribution-NoDerivs (CC BY-ND)** - Allows others to pass along and use an original work commercially and

non-commercially, as long as 1) it is used wholly and unchanged, and 2) the original creator is credited.

- **Attribution-NonCommercial-ShareAlike (CC BY-NC-SA)** - Allows others to build upon an original work non-commercially, as long as 1) their new creation is licensed under the same terms, and 2) the original creator is credited.
- **Attribution-ShareAlike (CC BY-SA)** - Allows others to build upon an original work commercially or non-commercially, as long as 1) their new creation is licensed under the same terms, and 2) the original creator is credited.
- **Attribution-NonCommercial (CC BY-NC)** - Allows others to build upon an original work non-commercially, as long as the original creator is attributed.
- **Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)** - Allows others to download an original work and share it with others as long as 1) the original creator is attributed, 2) the work is not used commercially, and 3) the work is not changed in any way ("About the Licenses," n.d.).

These licenses allow for any creator to choose exactly which of their rights they retain and which of those rights they allow to be released to the community.

Whether the original content is a picture, a video or text, the original work is protected by the full weight of copyright law. The idea of Creative Commons is not simply a legal system. It is about promoting a culture of sharing, openness and creation. The ideology motivating this movement is easy to understand:

> Lessig and others were concerned that the default copyright laws that applied in most countries were restricting creativity in the digital environment by preventing people from accessing, remixing and distributing copyright material online. They were particularly worried about the fact that if someone wanted to make their content freely available, they couldn't do so without hiring a lawyer (Solon, 2011, para. 2).

Artists and other content creators could now use this system to not only protect their rights, but to also encourage others to use their work and build on it. In such a scenario, all involved have reason to enjoy the rights promoted by the system. Creators who remix or build onto existing work don't have to ask for permission to use someone else's work if it has been licensed through Creative Commons.

Many creators have seen the benefits of allowing their work to be remixed and reused, possibly most famously so by Trent Reznor and Nine Inch Nails, who released their Grammy nominated album *Ghosts I-IV* under a Creative Commons Attribution-NonCommercial-ShareAlike license ("Who Uses CC?", n.d.). Other uses of Creative Commons licensing include all Wikipedia content, the official website for the White House, millions of user-uploaded Flickr images, user-uploaded YouTube videos and MIT's OpenCourseWare classes. While mainstream uses of the licensing architecture have not taken off, many individuals and smaller organizations have found the licenses to be incredibly useful for allowing their content to reach new audiences.

The grassroots efforts of Lawrence Lessig and other visionaries launched Creative Commons in response to what

they saw as an increasingly hostile culture of content ownership and protection. Their work provided the opportunity for artists to create freely and allow others to share and build upon their work. Boing Boing co-editor Cory Doctorow summed up a common view of the movement well:

> It's important to pay creators when it's fair, but copyright law has often stood in the way of creation. The runaway global success of Creative Commons is the leading edge of a new movement—one that balances the needs of tomorrow's creators with the needs of yesterday's (Broussard, 2007, para. 68).

This new movement that Doctorow speaks of is one of creation, consumption and sharing. As tools like Creative Commons licensing become commonplace, we can expect to see more of each in new and innovative ways.

Rurual Broadband Strategy

In February of 2009, Congress passed the American Recovery and Reinvestment Act of 2009, commonly referred to as the "stimulus package." The Recovery Act originally provided $787 billion to various programs, contracts, benefits and grants in order to spur economic activity and invest in long-term growth ("Recovery Act," n.d.).

The Department of Commerce's National Telecommunications and Information Administration (NTIA) and the U.S. Department of Agriculture's Rural Utilities Service (RUS) received $7.2 billion from the stimulus package, $4.7 billion of which went directly to the NTIA. The NTIA was given those funds to "support the deployment of broadband infrastructure, enhance and expand public computer centers, encourage sustainable adoption of broadband service, and develop and maintain a nationwide public map of broadband service capability and availability," ("About," n.d., para.1).

NTIA administers the Broadband Technology Opportunities Program (BTOP). This program seeks to deploy new or improve upon existing broadband internet facilities by laying new fiber-optic cables or upgrading wireless towers and to make sure schools, libraries, hospitals, public safety facilities and other "community anchor institutions" are connected. In doing so, these networks ensure sustainable community growth and provide the groundwork for improved household and business broadband internet services ("About," n.d., para.2).

A big initiative of BTOP is sustainable broadband adoption. These programs focus on increasing broadband internet usage and adoption, specifically among populations where broadband technology has been underutilized. A lot of these projects include digital literacy training and outreach campaigns to increase broadband's relevance in everyday life ("About," n.d., para.4).

A joint initiative of the FCC and United States Department of Agriculture's Rural Utilities Service (RUS) collectively known as the Rural Broadband Strategy is seeking to strengthen sustainable broadband adoption in rural areas. One way this is being accomplished is through the Connect America Fund (CAF). The CAF aims to make broadband accessible to 18 million Americans living in unserved rural areas over the next decade ("Connect America," n.d.).

Things certainly started off well with the Rural Broadband Strategy, but what is the current state of the initiative? The Eighth Broadband Progress Report from the FCC, released in August 2012, informed readers that the nation has made significant progress in the effort to expand high-speed internet access. However, according to the report, "further implementation of major reforms newly adopted by the Federal Communications Commission is required before broadband will be available to the approximately 19 million Americans who still lack access," ("Eighth Broadband," n.d., para.1).

In Section 706 of the Telecommunications Act of 1996, Congress requires the FCC to report each year on whether broadband is being distributed to all Americans in a reasonable and timely manner ("Eighth Broadband," n.d.). The Eighth Report states that major strides have been taken in order to meet that requirement. One of the efforts listed in the report is the Connect America Fund, among other efforts like the expansion of networks and reduction of time and cost required for deployment ("Eighth Broadband," n.d., para.4).

Despite these successes, the Report found that approximately 19 million Americans - six percent of the population - still lack access to reasonable broadband service. In rural areas one-fourth of the population lacks access, and in tribal areas one-third of the population lacks access. Until the Connect America reforms are fully implemented, the Report concluded that the gaps are unlikely to close. In light of the fact that millions of Americans still lack access, the Report concluded that broadband is not being deployed in a reasonable and timely manner ("Eight Broadband," n.d., para.5).

Where exactly the state of rural broadband availability is headed has yet to been seen. The FCC released a Notice of Inquiry in 2012, seeking input for the 2013 annual report. For the foreseeable future, the FCC will further examine the role of mobile services and next-generation high-speed services as the effort to bring broadband access to every American continues.

Institutions

Adobe Systems Incorporated

Adobe Systems Incorporated is one of the biggest software companies in the world that offers software for a variety of tasks. Originally incorporated in 1983 in California, Adobe was later reincorporated in Delaware in 1997 (Adobe Systems Incorporated, 2012). Adobe software targets creative professionals, marketers, application developers, and both enterprises and consumers. According to Adobe's SEC 10K filing, its goal is to help these people create, man-

age, deliver, measure, optimize, and engage compelling content across multiple operating systems, devices, and media (Adobe Systems Incorporated, 2012). Adobe tries to constantly improve its products and services, because the market for those specific products is very competitive and rapidly evolving. Adobe produces software for the two main fields of digital media and digital marketing. Some of the most relevant products for the reader include Adobe's flagship, Adobe Creative Cloud, and, more specifically, the Creative Suite (Adobe Systems Incorporated, 2012). Some of the programs included in the Suite include Adobe Photoshop, Audition, Premiere Pro, DreamWeaver, InDesign, and Illustrator. Adobe recently made a significant change in the way it distributes its products and services. Adobe started offering a subscription for its products in place of the traditional model of perpetual licensing. The service allows the user to download the latest version of Adobe's products without dealing with expensive upgrade fees. It also allows the subscriber to download and use any of Adobe's software applications with one subscription instead of paying for each software package individually. This change has presented some new challenges, and it affects some of the risk factors associated with Adobe. Some of the risk factors outlined in Adobe's SEC 10K form relate to the changes and the unstable nature of the software market and the recent changes in its distribution methods. Adobe stated, "If we fail to successfully manage transitions to new business models and markets, our results of operations could be negatively impacted" (Adobe Systems Incorporated, 2012). Adobe has reason to consider this as a risk, especially since its stock dropped by 15% after a legal battle with Apple regarding Flash, which it lost (Kelleher, 2012). Adobe also has some concern in light of what some people have been saying in reaction to the recent subscription addition. A person responding to an article on Mashable about the switch said, "By necessity—the latency—I stay away from cloud-based as much as possible. Not going to make Adobe especially popular among their rural customer base" (Fee, 2013). This is only one of many strong reactions to the move. Neil Bennett said, "A petition on Change.org demanding the company return to offering Creative Suite alongside Creative Cloud currently has almost 13,000 signatures – while even some users who've been won over have found moving to the Cloud difficult" (Bennett, 2013, p. 2). Another recent problem with Adobe came in June of this year when someone uploaded a torrent link to its Creative Cloud, allowing anyone using it to download the Creative Suite for free with no issues (Reisinger, 2013). Adobe will need to continue fighting piracy issues like these to remain profitable in the future. Even with the negative events, one must remember that Adobe is unique in its position in the global market. Adobe does not actually have an equal competitor in the global market. Adobe produces software for print media production, graphic design, web design, audio production, video production, photo editing, as well as other software that caters to both consumers and professional clients. This will help Adobe stay ahead in the market, even with the major change.

During its rise to the top, Adobe acquired several smaller companies within its market scope. The SEC 10K reported,

> On January 13, 2012, we completed our acquisition of privately held Efficient Frontier, a multi-channel digital ad buying and optimization company. During the first quarter of fiscal 2012, we began integrating Efficient Frontier

into our Digital Marketing segment. The Efficient Frontier business adds cross-channel digital ad campaign forecasting, execution and optimization capabilities to our Adobe Marketing Cloud, along with a social marketing engagement platform and social ad buying capabilities. We have included the financial results of Efficient Frontier in our consolidated financial statements beginning on the acquisition date (Adobe Systems Incorporated, 2012, p. 89).

Adobe bought companies in the past to utilize the company's assets to improve its own products and services. One also sees this in Adobe's purchase of Day software. Adobe said,

On October 28, 2010, we completed our acquisition of Day Software Holding AG ("Day"), a provider of web content management solutions that many leading global enterprises rely on for Web 2.0 content application and content infrastructure. Day was based in Basel, Switzerland and Boston, Massachusetts. Following the closing, we integrated Day as a product line within our Digital Marketing segment for financial reporting purposes (Adobe Systems Incorporated, 2012).

Purchasing any business carries risk, and Adobe explicitly states a risk relating to acquisitions in its 10K filing. Adobe said, "We may not realize the anticipated benefits of past or future acquisitions, and integration of these acquisitions may disrupt our business and management" (Adobe Systems Incorporated, 2012, p. 41). This approach also helps Adobe counteract the risk that it will not be able to keep producing products that accurately assess the needs of its customers.

As previously mentioned, Adobe does not have an equal competitor in the global market; however there are several smaller companies that compete against Adobe in specific software areas. A prime example is Avid, the creator of programs like ProTools. Consumers may purchase ProTools as a perpetual license agreement and upgrade at their own convenience instead of paying a subscription and having no rights to the software. Another popular Adobe software application is Adobe Premiere Pro, and it managed to jump to the top as the leading video editing package, trumping extremely popular programs like Final Cut Pro from Apple (Kenworthy, 2012). Adobe has also pushed ahead in other areas of media and technology. In November of 2012, Adobe announced Adobe MediaWeaver. The service puts ads into content in a way that mimics broadcast television (Adobe Systems Incorporated, 2012). Another revolution from Adobe comes in the form of the Primetime Media Player. Adobe said,

The new Primetime Media Player is at the core of Primetime and allows TV content owners and distributors to rely on a single workflow for content preparation, rights management and streaming to eliminate platform fragmentation challenges and maximize reach. In addition, the player reduces costs by tightly integrating with all Primetime components including Adobe SiteCatalyst®, Adobe AudienceManager and Adobe Auditude®, which

ensures for the first time that content, ads and analytics are optimized and inserted within the player to maximize the value of the content and provide a more meaningful audience experience (Adobe Systems Incorporated, 2012, p. 4).

With the introduction of the Creative Cloud, it is important to acknowledge the importance of the rise of mobile devices. Adobe has an entire division of mobile marketing software to address this issue. Brad Rencher, the senior vice president and general manager of Digital Marketing Business, Adobe said, "Mobile now accounts for 25 percent of the analytics we capture each quarter. Marketers must think 'mobile first' when developing strategies, campaigns and content" (Adobe Systems Incorporated, 2013, p. 2). Adobe has designed these apps to be user friendly and intuitive, as well as useful for a variety of challenges presented by the complex medium of mobile computing. Adobe makes it easy to take data from several different applications and utilize it.

Considering all of the information I have gathered about this company, I find it very difficult to pinpoint exactly what will happen with Adobe in the next five years. As a media student, I have used Adobe software rather extensively, and I have a great personal appreciation for the intuitive nature of the design. I also have a great appreciation for the ability for the different applications to work seamlessly together to complete a project. I have used other software, and it is not the same experience. I think Adobe definitely has an edge in that aspect of the software. I learned quite a bit about the vastness of the company as well. I had no idea that Adobe reaches into digital marketing in addition to the Creative Cloud programs I am already familiar with. I think Adobe's mobile marketing software will give them an edge in the future. Right now, the situation is rather unpredictable due to the recent introduction of the subscription system. Many people have reacted strongly against the change, but I can also see many people liking this approach. It allows the subscriber to have access to the latest features instantly, without needing to save up hundreds of dollars for an upgrade. As with any change, I think more people will come to appreciate this new system for that reason. Also, I think that Adobe's software speaks for itself in a sense due to its quality and usability. People will not easily give up the convenience that comes with this kind of high quality software. It will take a while, but I think Adobe will maintain its position at the top of its market over the course of the next five years, even if there is a drop in investors or customers over that time period.

Samsung

What do you think of when you think of Samsung? Maybe you think of televisions. Or maybe you think of smartphones. Or maybe you think of electronics in general. I bet that you never thought of construction, or medical service, or life insurance. On top of being the world's largest electronics maker, Samsung also makes and does many other things. The tallest building in the world: built by Samsung. Samsung has a lot to offer in the world. Here in the United States of America though, Samsung is known for their electronics, specifically their smartphones. Samsung, meaning 3 stars in Korean, was started in 1938 (Conti, 2006). Samsung Electronics, a subsidiary to Samsung, was founded in 1969 (Yu, 1999).

Samsung has many smartphones in the market from the Galaxy note II to the Galaxy SIII. They did just announce their newest device called the Galaxy Gear smart watch (Schroeder, 2013). The device has a 1.63 inch, 320 by 320 pixel Super AMOLED screen with a 1.9-megapixel camera located on the wristband. It has an 800MHz processor, 512MB of RAM and 4GB of storage (Schroeder, 2013). This device will be one of the first of its kind. Samsung is calling the Galaxy Gear the "Perfect companion for the Galaxy Note 3" which is no surprise considering that they are both coming out together and the Gear is completely compatible with the Galaxy Note 3 (Schroeder, 2013).

Samsung's biggest competitor in the smartphone business is Apple. One of the big things that Apple has over Samsung is that their iOS runs so much smoother with their phones than the Android system does on Samsung's phones. Apple is currently suing Samsung for copyright against their patents on the iPhone in more than 10 countries (Cusumano, 2013). Apple is stating that Samsung has copied the look of the iPhone and the way it runs the Android system. No telling yet if the lawsuit will involve Apple suing Google as well for the Android operating system. When it comes to smartphones, Apple has declined worldwide, only accounting for 19% of the total global market. Android based phones however, account for 64% of the total global market (Cusumano, 2013). If Apple win these lawsuits and prevents others from making similar devices to the iPad and iPhone, then the consumer might lose, at least in America. We as Americans have so many smartphones that if Apple wins these lawsuits, it will drive their prices even higher knowing people won't want to change to something so radically different (Cusumano, 2013). His suggested outcome would be that, If Apple wins against Samsung, then companies like Google and Samsung could "reach agreements with Apple to make royalty payments and then cross-license some of their own patents" (Cusumano, 2013, p. 30).

One thing that I really like about Samsung is that they portray themselves to be for people and not profits. Inside the Samsung Human Resource Development Center, which is located in Yongin, South Korea, there is an engraving which reads in Korean and in English, "We will devote our human resources and technology to create superior products and services, thereby contributing to a better global society" (Grobart, 2013, p. 1).

Samsung made around $179 billion last year, making it the world's largest electronics company by revenue (Grobart, 2013). Samsung as a whole accounts for 17% of South Korea's gross domestic product (Grobart, 2013). In South Korea itself, Samsung is everywhere. Sam Grobart tells a story like this, "A Seoul resident may have been born at the Samsung Medical Center and brought home to an apartment complex built by Samsung's construction division (which also built the Petronas Twin Towers and the Burj Khalifa). Her crib may have come from overseas, which means it could have been aboard a cargo ship built by Samsung Heavy Industries. When she gets older, she'll probably see an ad for Samsung Life Insurance that was created by Cheil Worldwide, a Samsung-owned ad agency, while wearing clothes made by Bean Pole, a brand of Samsung's textile division. When relatives come to visit, they can stay at The Shilla hotel or shop at The Shilla Duty Free, which are also owned by Samsung" (Grobart, 2013, p. 2).

Lee Kun Hee is the president and owner of Samsung as his father started the company in 1938 (Grobart, 2013).

Lee wanted Samsung to be a world-wide player so he would often travel around the world. One time he went into an electronics store and saw Sony and Panasonic TV's in the window display while his Samsung TV's were in the back collecting dust. He was mad to say the least (Grobart, 2013). Lee then called a meeting in Germany and delivered a speech that lasted three days in which the most famous quote from the speech was "Change everything but your wife and children," which has "Ask not what your country can do for you" levels of recognition at Samsung (Grobart, 2013). Lee is always acting like his company needs major improvements. He is always saying "This is perpetual crisis, we are in danger. We are in jeopardy" (Grobart, 2013, p. 6).

With the passion that Lee has for his company and the innovations that Samsung has going forward, I feel like Samsung will be on top of the handheld device market for some time. The competition between Samsung and Apple is healthy as long as it can stay away from the court rooms.

NIVIDIA

According to Yahoo Finance, NVIDIA is "a visual computing company[that] develops graphics chips for use in personal computers, mobile devices, and super computers." (Nvidia Corporation, 2013). Founded in 1993 by Jen-Hsun Huang, Chris Malachowsky and Curtis Priem, they established partnerships with SGS-Thompson and Diamond Multimedia Systems to fabricate their new graphics processors (Burris, 2013). Their first microprocessor was released onto the market in 1995, and in 1999 they released the first GPU, or graphics processing unit, for the PC industry, which was labeled the GeForce 256 (Geforce 256, 2013).

NVIDIA's key market remains in the realm of graphics processing, where they provide models aimed at the consumer gaming market (GeForce series) (Geforce graphics cards, 2013), professional workstation graphics (Quadro series) (Quadro, 2013), mobile platforms such as phones and tablets (Tegra platform) (Tegra, 2013) and GPU super-computing (Tesla series) (Tesla, 2013). NVIDIA is recently branching into the mobile gaming console platform with the release of its "Shield" console, a device intended to stream PC games from a computer. It also boasts some basic internet functionality such as Gmail and Twitter, and was released for $300 on July 31st of this year. Critical reviews thus far have been mixed, and the device's future as a viable market is therefore uncertain (Gilbert, 2013) (Lowe, 2013).

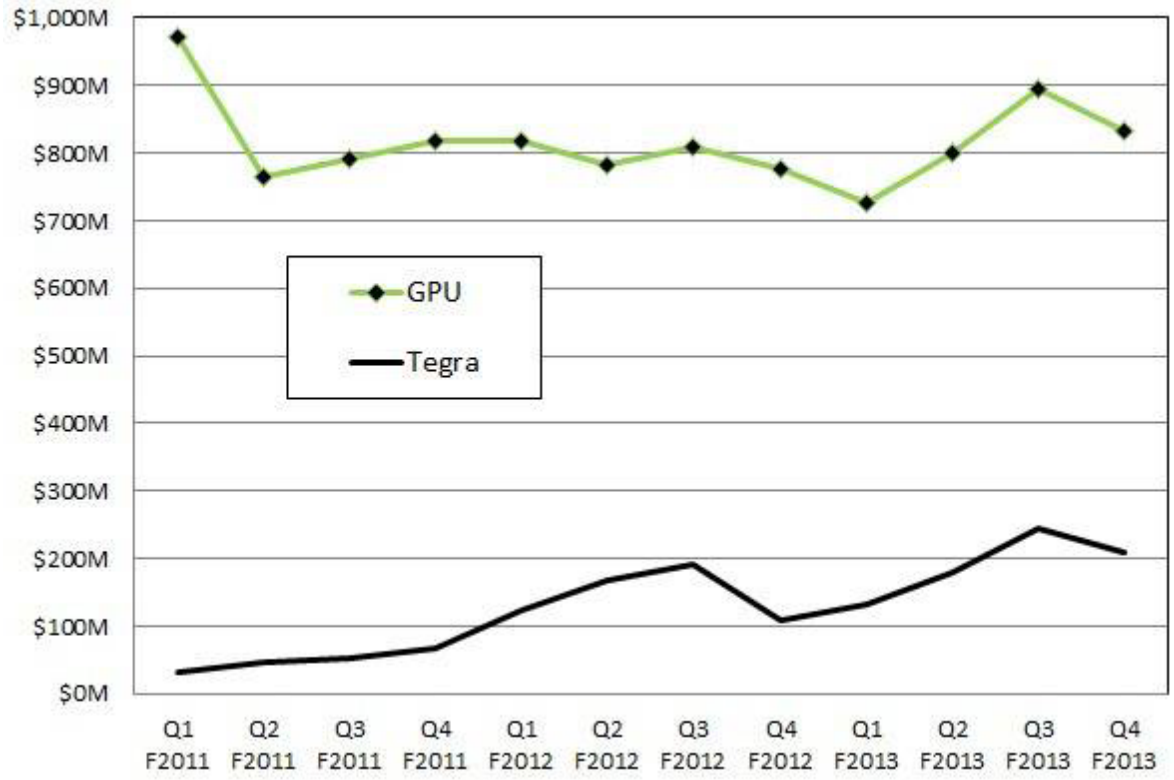
NVIDIAs' Tegra 3 was utilized in a number of devices including the OUYA, a crowdfunded android-based console released on June 25th 2013 (Gilbert, 2013). The Tegra 4 was announced recently, and already several new devices have been announced to be running it, including NVIDIAs' own Shield and the ZTE Geek (Chavez, 2013)

The vast majority of NVIDIA's chips are sold to companies that incorporate them into their own computers. Its largest customer is Asustek, which accounts for 12% of its revenue (Nvidia, 2013). NVIDIA has suffered some loss when it

comes to the next generation of consoles, the PS4 and Xbox One. For both devices, AMD was chosen as the provider of their onboard GPU's. NVIDIA's senior vice president Tony Tamasi is quoted as saying in regards to this "I'm glad the new consoles are here, if for no other reason than to raise the bar." He is noted as also pointing out that NVIDIAs' graphics cards can deliver more than two times the performance of the PS4 (Reisinger, D. 2013).

Business-wise, DealBook notes that NVIDIA has shown weak growth compared to its peers (Intel, ATI, etc.) at only a 7.22% annualized change in the last three years. The average of its sector has been 23.23%. Its stock price is noted as performing comparably to the S.&P. 500, gaining 15.54% (Nvidia Corporation, 2013). Bloomberg notes that NVIDIA's sales predictions fall short of projections for the 3rd quarter of this year. More specifically, NVIDIA predictions their revenue will amount to somewhere between $1.03 and $1.07 billion, as compared to analysts' average projections of $1.1 billion (King, 2013).

The Channel Register gives a graph overview of NVIDIA's quarterly revenue since 2011 up until the start of the fourth quarter in 2013:



(Morgan, 2013)

To be noted from this chart is the drastic difference between their markets in the mobile platform (Tegra) and in their consumer sales of GPU's, with the latter being their strongest asset (Morgan, 2013). The slump in sales from Q3 2012 till Q3 2013 is largely in part to a worldwide slump in computer sales as CBCNews Business notes. Analysts are still speculating for the exact reasons behind this ("Computer sales," 2013).

Yahoo Finance notes that NVIDIA has three primary competitors in their market: Advanced Micro Devices Inc

(AMD), Intel Corporation and QUALCOMM Incorporated (Nvidia corporation, 2013). In 2012, it is notable that Intel and NVIDIA were in talks concerning the former acquiring the latter. At this time though, it is also noted that talks of such have all fallen through (Valich, 2013). AMD is its primary competitor when it comes to graphics processing, as the two both release in the same markets (gaming, professional and mobile platforms). Intel has more recently been moving into the graphics market with its decision to integrate graphics into its latest CPU lines, the Sandy, Ivy and Haswell lines. Qualcomm maintains a hold onto the mobile and tablet graphics market, with its Snapdragon line of processors as one example.

NVIDIA's greatest threat from any of these companies is their release of platforms that combine multiple chips, incorporating the central processing unit (CPU), operating system and graphics processing unit (GPU). Both Intel and AMD have released platforms that do this (Centrino and Puma, respectively). NVIDIA has broken into this market though, with its Tegra platform. Regardless though, it is at a disadvantage as both the aforementioned companies have been building in this market for years. (Wikinvest, 2013).

In summary, NVIDIA has a solid hold in the GPU market and is slowly expanding its business into other markets. Though NVIDIA faces competition in AMD, Intel and Qualcomm, only AMD poses an issue as the two compete in the same markets. It is reasonable to expect NVIDIA's continued growth as a business, though to expect a drastic shift into the positive or negative would be unfounded.

One must understand very minimal economics to know that institutions require funding to continue developing new technologies and services. Media has several different approaches to funding, but the scope of this paper will relate to broadcast radio and satellite radio funding factors specifically. Although both of these media outlets produce a form of radio, their methods for gaining revenue differ.

Content

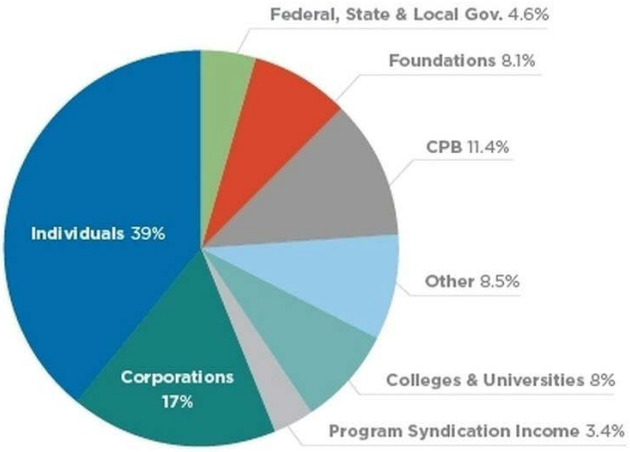
Broadcast Radio

Traditionally, broadcast radio has gained most of its revenue from ad sales. A radio sales representative contacts business owner and sells radio commercials for a rate set by the station owner. The business owner and the rep agree upon a schedule for the spots to run over a certain period of time. Now, this scenario repeats any number of times, and the radio station remains a free service to the public due to the funding supplied by advertising revenue. Roy H. Williams, a well known marketing specialist, says, "If you, make exactly the same offer on radio as in the newspaper, spend exactly the same amount of money with each media, and across precisely the same span of time, radio outperforms newspaper nearly 14 to 1" (Williams, 2008, p. 3). Some other people disagree with radio's effectiveness. Pat Owings says, "Bank Rate

estimates that around 90% of radio ads don't result in any profit. In our era of iTunes and Spotify, it's hard to connect via radio waves" (Owings, 2012, p. 5). These kinds of disagreements cause much strain between radio advertising sales representatives and potential clients, because many businesses find it difficult to spend money on advertising that does not have the same amount of perceived accountability as web advertising that offers specific figures for advertising effectiveness. In spite of challenges, radio advertising still serves as a primary source of revenue for many large media companies, including Cumulus Media Inc. According to an SEC filing by Cumulus Media Inc., "In 2012, radio advertising revenues reached $16.5 billion" (Cumulus Media Inc, 2013, p. 4).

Listener financial support is another funding source for some radio broadcasters. National Public Radio (NPR) is a popular example of an organization that utilizes this model. Member stations rely heavily on contributions from individuals to remain on-air. This was not always the case though. The Seton Hall Journal of Sports and Entertainment Law says, "NPR has already managed a revolutionary transition from being 100% federally funded to relying on government for a mere fraction of its budget" (Giarolo, 2013, pp. 459-460).The following graph illustrates the distribution of the revenue acquired by public radio:

PERCENTAGE OF PUBLIC RADIO STATION REVENUE BY CATEGORY (FY 10)



Source: Corporation for Public Broadcasting

(National Public Radio, 2013).

Other examples of stations that rely on listener support include Air1, K-LOVE, and many other religious broadcasting entities. One could infer that religious broadcasters have a unique position because their listeners feel a stronger connection to the station's purpose. Those listeners may feel more strongly compelled to support the station because they believe that the station is furthering ministry, but listeners to NPR stations do not have that connection.

Satellite radio gathers revenue a little differently than broadcast radio. Advertising revenue still factors in. In 2012, Sirius XM Radio reported $82,320 of revenue from advertising revenue and agency fees (Sirius XM Radio, 2013, p. 23). This revenue includes the sale of advertising on selected non-music channels, net of agency fees (Sirius XM Radio,

2013, p. 24). Sirius XM still sells commercials based on rates, but only for certain channels. While Sirius XM gains some revenue from advertising, the majority of the company's revenue came from subscription funds totaling $2,962,665 in 2012 (Sirius XM Radio, 2013, p. 23). The company seems to have been doing well with its record year in 2006, adding nearly 2.7 million net subscribers and achieving its first positive cash flow quarter (Sirius XM Radio, 2007). Sirius XM's reliance on subscription revenue can be a double edged sword though. For example, if royalty fees, programming costs, or a catastrophic repair need arises, then the company must offset the cost somehow. If Sirius XM raises the subscription rate, consumers may unsubscribe and others who may be considering using the service may decide not to subscribe due to expense. Consumers expect prices to stay down in order to justify spending money on luxury expenses.

Currently, it is difficult to tell if one funding structure works better than another for broadcast or satellite radio. Advertising revenue can work well, but there are drawbacks to any form of marketing. For example, there are marketing specialists that argue against any form of disruptive advertising, such as radio, but there are others who swear by it. Listener support is also effective for some institutions, but it can fall through in difficult economic times. Subscriptions can also be a very effective means for funding, but many variables come into play to keep rates low to encourage clients to keep the service. Personally, I think a combination approach would be effective. Combining advertising revenue and listener support works well for several major Christian broadcasting networks. Sirius XM succeeds with a combination of advertising revenue in addition to subscription revenue. NPR is a unique case, but it survives on mostly listener support in addition to funding from other sources, such as universities. For the future, I think many new options for revenue will develop. Daniel Burrus says,

> When we think of radio as sponsored audio content and entertainment instead of a device, then new media can become a vehicle for growth rather than a threat. Listeners can already send text messages to the station and, thanks to new HD Radio, they will soon be able to get real-time information about road conditions or where the nearest location is for a product they may want to purchase. In addition, stations are no longer limited to audio content; they can now couple their messages and entertainment with Web-based video (Burrus, 2007).

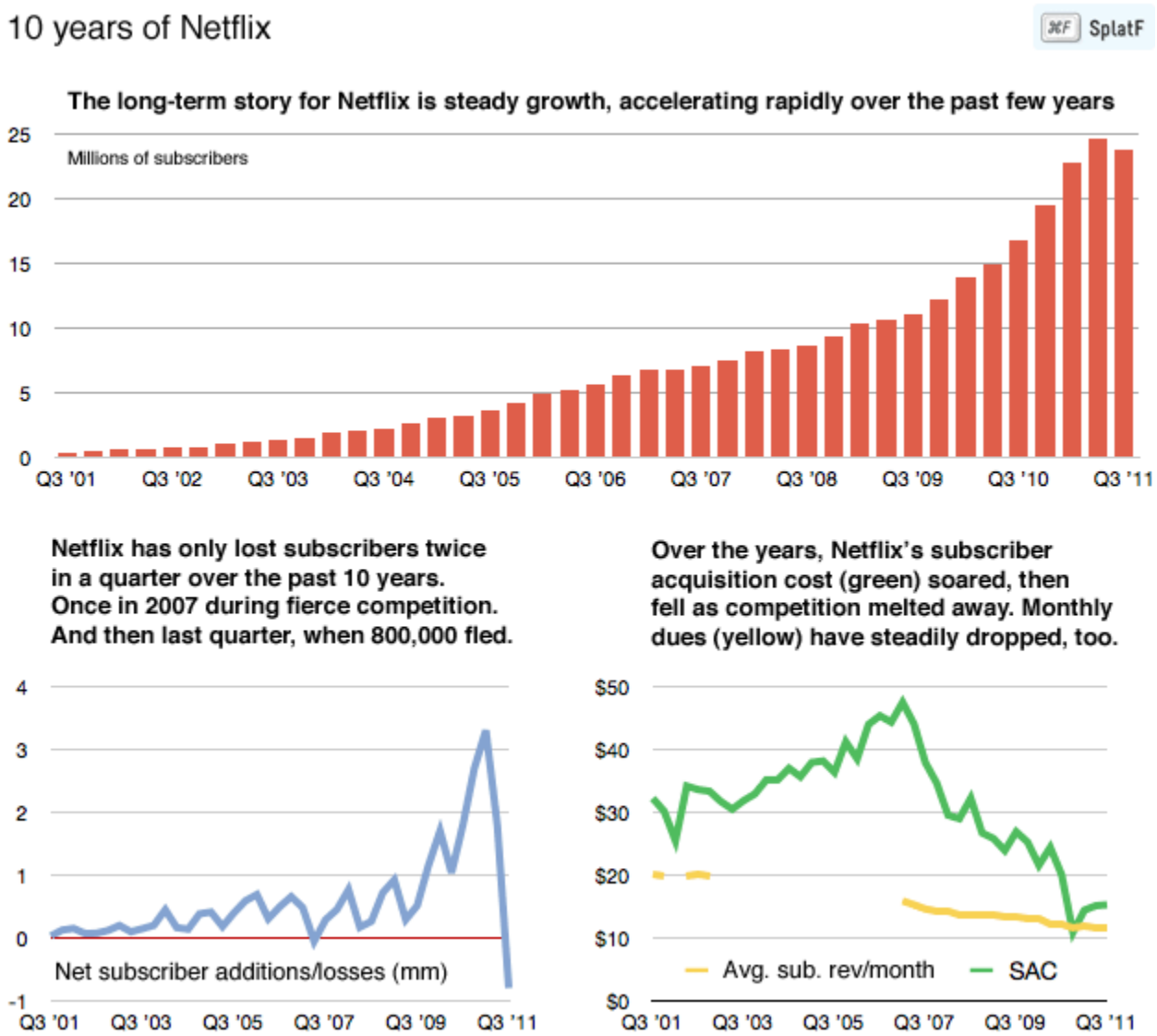
One can easily see many opportunities in what Burrus says for revenue through content sponsorship and locally targeted advertising. This new form of targeted advertising could drive advertising costs up and help radio broadcasters of the future secure revenue. It will be interesting to see how these traditional forms of media find new ways of utilizing new technology and media to earn revenue as time goes on.

Online Video

The primary model utilized by online video distribution services such as Netflix, Hulu and Amazon Instant Video

is a monthly subscription fee. In this model, a user pays a set fee that enables them use of the service, often each service has several tiers with increased payment wherein the user can gain additional accesses such as less ads, the ability to view content on more devices simultaneously, and additional privileges.

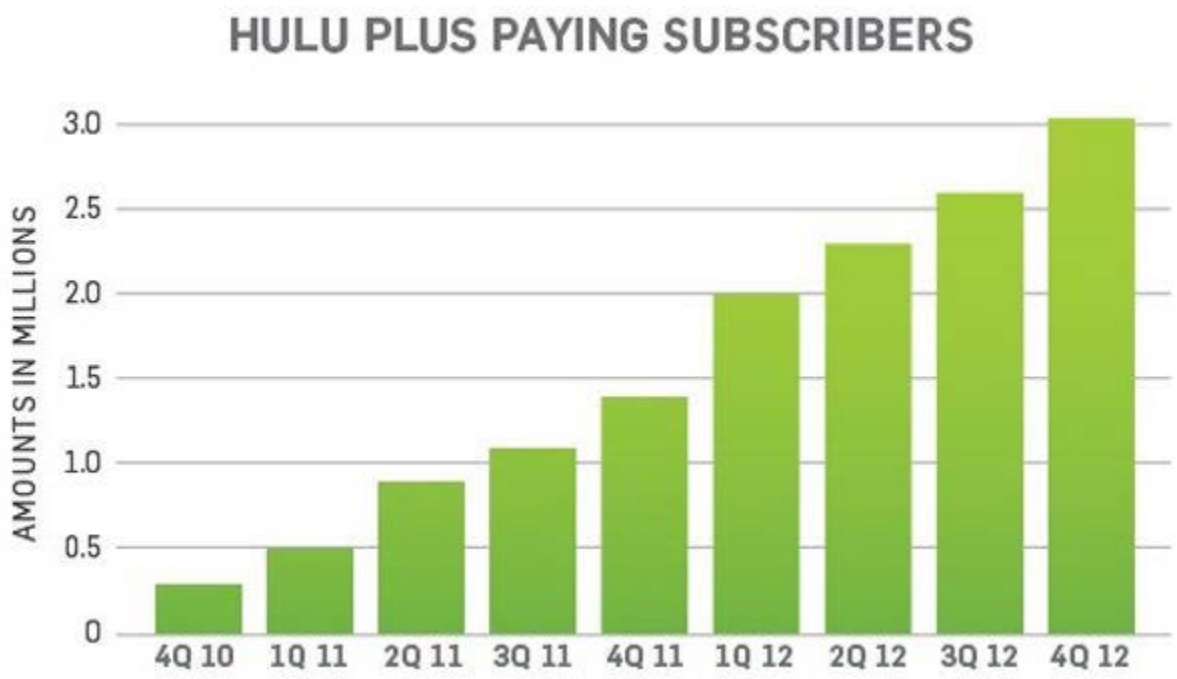
Netflix, an OTT service allowing users to rent DVD's through the mail as well as an OTT online video service, has seen great success with their model, with a reported 31 million subscribers in the US alone, and 40 million worldwide (Chmielewski, 2013). They have reported a net income of $32 million in the third quarter of 2013, much higher than the $8 million earned from the third quarter of 2012. Their annual revenue has been $1.1 billion thus far, up 22% from the first three quarters of 2012, showing that the model has worked increasingly well for them as a company (Chmielewski, 2013). The following chart gives a better illustration of this growth (Frommer, 2011).



(Frommer, 2011)

Meanwhile, Hulu, another OTT video service that offers content both free and for paid subscriptions, has report-

ed to have four million subscribers by the second quarter of 2013, twice as many as the two million they reported to have the previous year. This has garnered them $690 million in annual revenue in 2012, up from the approximately $420 million earned in 2011 (Stelter, 2013). The following chart shows their steady growth by quarter, since 2010 till the first quarter of 2013.



Amazon Instant Video is dependent upon a yearly subscription to Amazon's Prime service, which costs $79.99 (Tolentino, 2013). Hulu Plus charges $7.99 a month, or $96 for an annual subscription ("About, 2013") while Netflix follows the same pricing scheme for their subscription model ("Frequently asked questions, 2013"). Netflix also offers an additional plan for $12 a month that allows four simultaneous online viewing feeds (Baldwin, 2013). Also of note is that both Amazon Instant Video and Netflix each offer a one month free trial to attract customers, while Hulu Plus has a one week free trial (Tolentino, 2013).

By looking at three specific over the top video content services, we can see the overall growth they are experiencing and the aid the subscription model is gaining for the industry.

Broadcast Television, Cable, and Online Media

Broadcast television and cable are popular and widely used media outlets today. In society we see so many things shaped by television and we also see television shaped by our culture. Broadcast television has been widely used since its inception in 1948. It wasn't until 1970 that the major networks were beginning to emerge. By 1990 57 percent of TV households had subscribed to cable video services. Then, by 2012, approximately 93 percent of American Households had access to cable broadband (Our Story, n.d.).

"According to Nielsen's U.S. Entertainment Consumer Report, consumers in households earning an average annual income of $66,000 account for more than 70 percent of spending on entertainment…" (U.S. Entertainment Report, 2013, para. 1). This includes spending money on cable and broadcast television.

Television is a widely used medium, but as time passes, young adults are watching less and less television all together. This is most in part because of online digital access, but is also because young audiences are favoring alternative entertainment but are not completely abandoning television at a rapid rate.

Traditional TV Viewing, by Age

(weekly time spent in hours: minutes, based on total population)

Q1 2011-Q2 2013

	T 12-17	A 18-24	A 25-34	A 35-49	A 50-64	A 65+
Q2 2013	20:39	21:32	26:18	31:16	40:51	46:54
Q1 2013	21:22	23:24	28:53	34:18	44:09	49:21
Q4 2012	21:28	23:14	29:27	34:29	43:43	48:25
Q3 2012	22:33	21:59	27:15	32:06	40:39	45:38
Q2 2012	21:37	22:32	27:06	32:02	40:02	45:20
Q1 2012	22:14	24:44	29:46	35:08	43:13	47:59
Q4 2011	22:14	25:34	29:55	34:16	42:16	47:13
Q3 2011	24:11	23:57	27:46	32:07	40:07	45:23
Q2 2011	22:24	24:17	28:08	32:58	41:04	46:16
Q1 2011	24:21	26:28	30:34	36:23	44:54	49:17

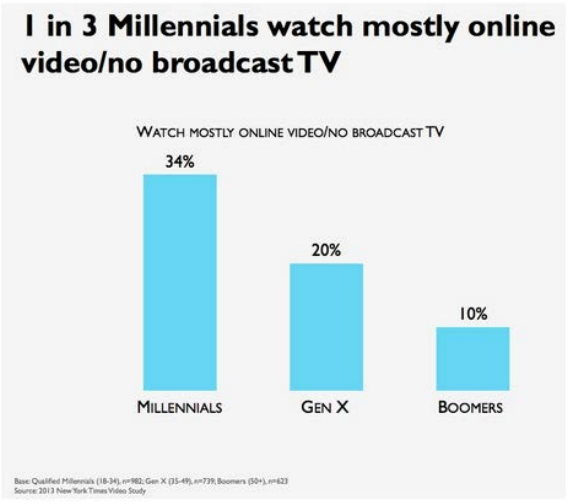
MC MARKETINGCHARTS.COM

(Marketing Charts, 2013).

However, over the past few years, television has gradually become more digital and has increasingly pushed out cable providers. Cable subscriptions have slowly begun to decrease in number while online digital programming noticeably increases. The chairman of DISH network, Charlie Ergen, recently stated that he believes that the long reign

of broadcasted television is slowly coming to an end (Jones, n.d., para. 1). Online digital programming and online on-demand is the new thing. The number of cable subscribers peaked in 2011 but have been decreasing ever since. According to S.E. Jones, a Yahoo contributor:

> What's really at stake is whether consumers will continue to pay for television programming carried by cable carriers such as Comcast, etc., or whether they will not, and instead opt for online content such as that provided by Hulu, Netflix, Amazon, etc (Jones, n.d., para. 2).



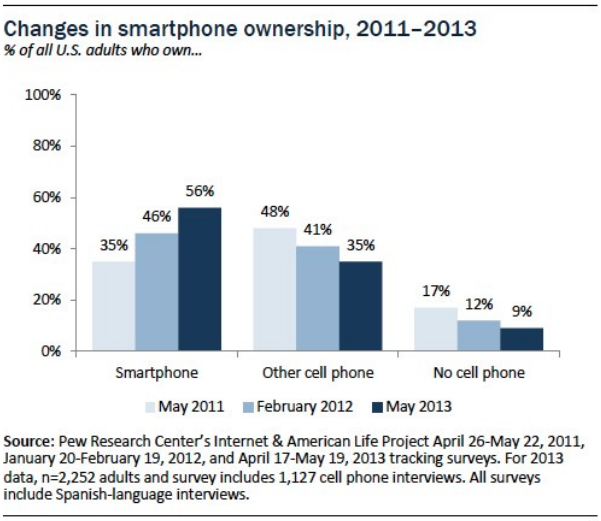
In a survey of online consumers conducted by Nielsen, it was researched just how consumers around the world watch video. It was found that about 70 percent of online consumers watch online video. Also, "More than half of global online consumers watch online video in the workplace" (Neilsen, 2010, para. 4). Mobile video is used by approximately 11 percent of online consumers worldwide with the largest audience of consumers in their late 20s in the Asia-Pacific region. It was determined that consumers spend 4+ hours per day watching television in many markets. According to this survey, "North America and Europe appear to lag slightly behind other regions in the use of online and mobile video" such as the high average of television viewership in countries such as China, India, Russia, and Brazil (Neilsen, 2010, para. 11).

Broadcast television viewership has decreased at an annual rate of 3 percent for several years (Jones, n.d., para. 4). Today much of the audience of online television is young adults. In a study done by Nielsen, it was found that "...viewers aged 25 to 34 years old, young adults composed significantly more of the audience watching TV programs online than other groups--between 10 to 25 percent" (Solomon, 2013, para. 9).

Differences in Viewership Overlap According to Television Subscription Type

	Over-the-air only	Cable TV subscribers	Satellite TV subscribers	Other TV service
TV and Internet	50.0% (15)	58.7% (142)	50.5% (54)	66.7% (4)
TV only	36.7% (11)	30.9% (99)	46.7% (50)	33.3% (2)
Internet only	13.3% (4)	0.0% (0)	1.9% (2)	0.0% (0)
Neither TV nor Internet	0.0% (0)	0.4% (1)	0.9% (1)	0.0% (0)
Total	100.0% (30)	100.0% (242)	100.0% (107)	100.0% (6)

(Jiyoung, 2013).

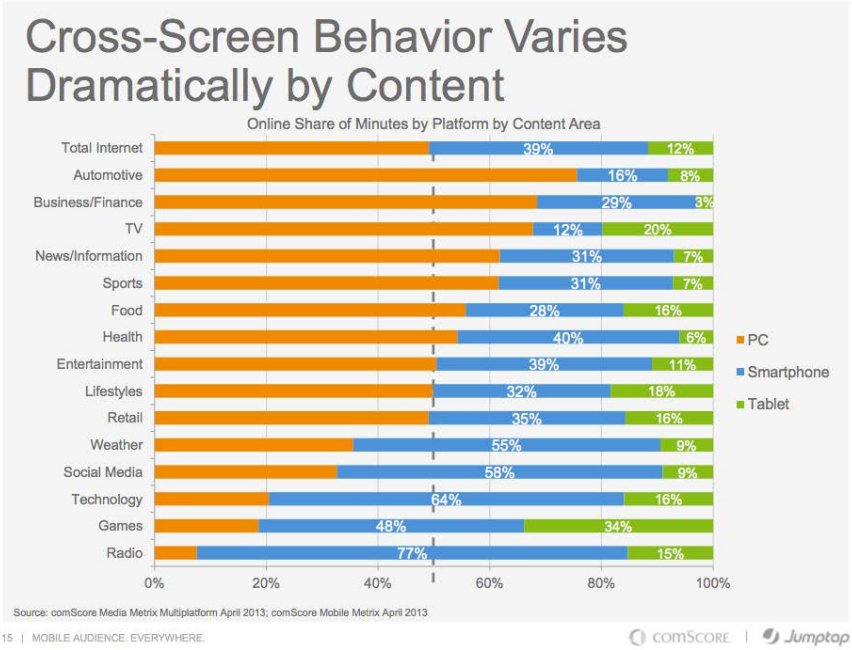


(Smith, 2013, para. 3)

A 2013 study done by Pew Research indicates that smartphones have quickly become a staple in the lives of many Americans. According to Pew, for the first time since it began tracking this topic, a majority of Americans (56 percent) now own a smartphone of some kind (Smith, 2013, para. 3). For a product category that did not exist before Apple's original iPhone was announced in 2007, it has certainly gained widespread acceptance in the mass populace. Even in the last three years, smartphone adoption has jumped 21 percent (Smith, 2013, graphic). The downward trending of other cell phones and "no cell phone" individuals is also noteworthy. Nielson puts the number of smartphone adopters even higher, at 64%. Their findings also indicate that 80 percent of recent phone purchasers chose a smartphone ("Smartphone Switch," 2013, para. 1). Based on these numbers the trend is clear: consumers have taken to adopting smartphones into their lives very quickly.

But as with all technological growth, eventually a market becomes saturated. As comScore, Inc. notes in its paper, "2013 Mobile Future in Focus," because mobile saturation has penetrated to over 50 percent of the United States market, it is likely safe to say that the market for these devices will slow down as the adoption curve enters the "late majority" section of consumers. The move into this section of the market is not an insignificant one. Corporations will

have to adapt to this new environment: “Because these consumers tend to be somewhat resistant to new technology and more price-sensitive than the average consumer, gaining adoption in this segment requires the industry to evolve its product mix and marketing strategies” (Donovan, 2013, p. 7). Part of this adaption will almost certainly include price cuts, expansion into new markets and the development of new technologies to complement smartphones (wearable tech, etc.).



(“Screen Jumping,” 2013)

Corporations have already taken note of this change by modifying how they do business in this market. According to Pew Research Center’s David DeSilver, the average price of a smartphone has decreased 16 percent over the last two years (DeSilver, 2013, inset).

The data for this report, which comes from an International Data Corporation (IDC) study, shows that the average selling price for smartphones has “declined to $372 in 2013, down from $407 in 2012 and $443 in 2011. As this trend continues, smartphone ASPs [average sale prices] are expected to drop as low as $309 by 2017…” (“Smartphones Expected,” 2013, para. 4). It would not be an outlandish prediction to think that this trend in gradually decreasing smartphone prices will continue.

As prices on these devices have declined, capabilities have expanded. One significant area of growth in the smartphone market is device screen size, to the point where an in-between device category, the “phablet” has been created. The phablet, which has a screen size that is somewhere between a phone and a tablet, typically at five inches or greater, has become one area of increased focus for smartphone manufacturers. According to ABI Research, 83 million phablets were shipped in 2012, which is an increase of 4,504 percent from 2011. ABI also projects that more than 150 million phablets will be shipped in 2013 and that the segment will grow gradually in and past 2014 (Flood, 2013, para 6).

ABI Senior Analyst Joshua Flood credits this new consumer attraction to big-screen phones to the fact that, “people are watching a greater number of videos, reading more digital content (be it newspaper subscriptions or general Internet browsing), and playing more games on their smartphones. A larger screen enhances these user experiences, making the small increase in device dimensions worthwhile” (Flood, 2013, para 3). While he does not believe that the phablet will take over the smartphone market, he does see them moving into a significant portion of that market (around

25%). Another indicator that adoption of larger screen sizes will likely continue is seen in South Korea, a leading edge country where consumers have adopted the phablet at around 41 percent ("The South Korea Report," 2013, p. 3). Clearly this is a trend that consumers are willing to invest in.

As screen resolutions and battery life expectations continue to increase, both consumers and creators can take advantage of these new abilities in unique ways. *Significant* portions of global markets own smartphones with the increasing ability to consume mobile content. The modern, mobile consumer has taken advantage of the new capabilities of his mobile device through a variety of ways, including news consumption, gameplay, music-listening and shopping.

Now that the capabilities and market expectations for these devices are understood, it is important to also examine how content for those devices is acquired. How much time are consumers spending on these devices? How are users getting to their content? Are they paying for it? Are they downloading it for free? What content is the most popular among consumers? Exploring each of these questions will provide unique insights into consumer behavior in this new and steadily expanding market.

According to a joint study published by Jumptap and comScore, smartphones and tablets have doubled the total amount of time consumers spend online in just three years and about half of all time spent online is spent using a mobile device. The same study found that consumer behaviors vary dramatically based on the content being consumed. The data from this study shows that smartphones are most used for weather data, social media, technology content and radio ("Screen Jumping," 2013).

Even back in 2011, according to Experian Simmons, 33.3 million Americans used their cell phones for shopping-related activities. According to the same study, 20.7 million cell phone owners downloaded an app in the last month, with 97% saying that they had downloaded a music app, 43% stating they had downloaded a game and 42% sharing they had downloaded an entertainment-related app ("The 2011 Mobile Consumer," 2011). Another study confirms this prevalent entertainment focus in its suggestion that from 2010 to 2011, entertainment consumption on mobile devices jumped a staggering 82 percent (Kelly, 2012, para 1). While the numbers have likely grown significantly in the last two years, it is clear that mobile consumers are not refraining from using their smartphones for both shopping and entertainment. This trend is one that seems likely to continue.

When it comes to paying for mobile content, developers seem hesitant to create apps that consumers must pay for, likely because consumers seem hesitant to buy. An examination of most app marketplaces shows that consumers are largely focused on free apps. While they might be comfortable viewing or clicking on in-app advertisements in those free apps, they are hesitant to pay any more direct cost. In 2012, Gartner forecasted that 89 percent of total mobile app downloads would be free downloads. "Worldwide mobile app store downloads will surpass 45.6 billion in 2012, with free

downloads accounting for 40.1 billion, and paid-for downloads totaling 5 billion" ("Gartner says free apps," 2012, para. 1). It is clear from this prediction, that free apps rule the day.

Print/Online/Mobile News

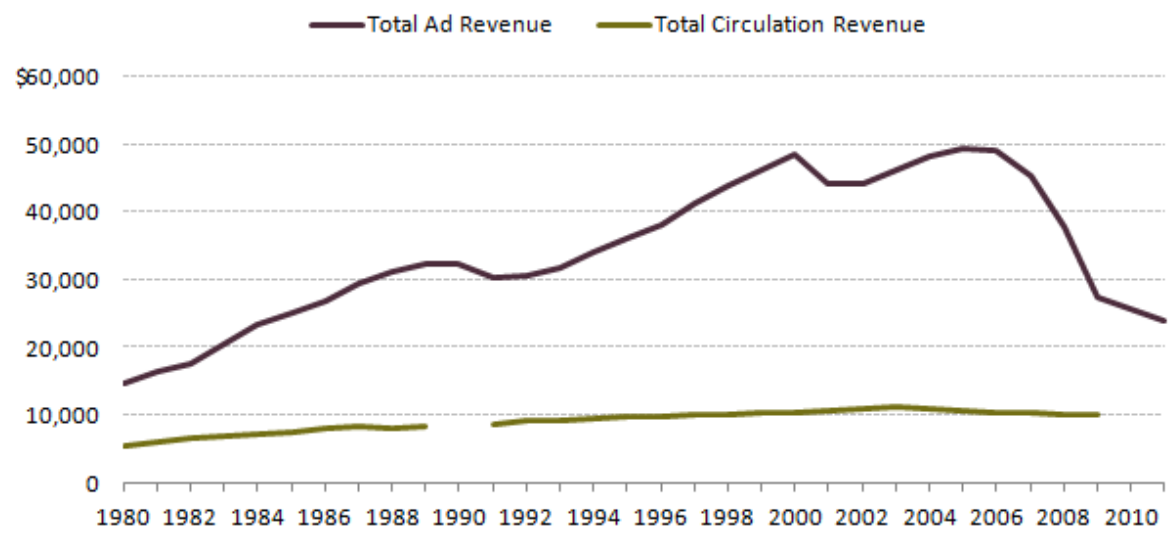
Journalism is a dying industry. Or at least a misinformed percentage of the population seems to believe so. In recent years, the future of the news media has been understood to be shaky, uncertain and on a rapid decline. This assumption is most often based on decreasing numbers seen in print newspaper readership over the last several years. However, statements that the news is a dying field fail to recognize that journalism is much larger and more diverse than print newspapers.

There will always be a demand and a need for the news because people inherently desire to be informed of "what's happening," regardless of the topic or method of communication. Journalism is certainly not a dying industry, but thanks to the surge in technological developments and widespread influence of the internet and mobile devices, journalism is undergoing a period of transition. Transitions can certainly be rocky, but journalism as a whole will not fail because it cannot fail. As long as we have freedom of the press, we will have journalism.

A recent study conducted by the Newspaper Association of America (NAA) found that a majority of U.S. adults, 164 million (69%) read newspaper media content in print or online in a typical week or access it on mobile devices in a typical month ("Across platforms," 2013). The same study found that the mobile newspaper audience is growing at a relatively fast pace and sports a younger readership. According to the NAA, the median age of an adult newspaper mobile user is 17 years younger than the print reader ("Across platforms," 2013).

Ad Revenue Drops While Circulation Revenue Remains Stable

In Millions of Dollars



Source: Newspaper Association of America
Note: Numbers are rounded. There are no circulation revenue figures for 1990. Figures from 2003 onward for total ad expenditures includes online.

PEW RESEARCH CENTER'S PROJECT FOR EXCELLENCE IN JOURNALISM
2012 STATE OF THE NEWS MEDIA

One of the core issues the news industry is facing is how to generate revenue. Advertisement revenues for print publications in 2011 were less than half of what they were in 2006 (Edmonds, 2012). While ad revenues have dropped significantly, circulation revenues, the average number of copies of a newspaper (Edmonds, 2012) distributed or sold in a given time period, have remained relatively stable according to the Pew Research Center.

The chart above shows that the challenge for the newspaper industry doesn't lie solely in circulation numbers, but in generating revenue from advertisements (Edmonds, 2012).

Even though subscriptions aren't the main source of revenue for newspapers, subscription numbers are important to news organizations. With more people moving to online readership, print subscription numbers have dropped and newspapers are forced to develop strategies for obtaining online subscriptions. The Wall Street Journal is the leader in online paid subscriptions and has been charging for online content for over a decade (Edmonds, 2012). For many other papers who keep online content free, their "circulation" revenue comes from e- replica editions which display electronically the full print paper edition in its original layout (Edmonds, 2012).

As of 2012, researchers found that 23% of Americans access the news on at least two digital devices ("New Era," 2012). Statistics show that an increasing number of people are accessing the news in overlapping ways on smartphones, tablets and desktop or laptop computers. In fact, 34% of laptop/desktop users also access the news on a smartphone and 27% of smartphone users also access the news on a tablet ("New Era," 2012).

With an increase in news consumption on digital devices, many are looking to see what role social media plays in the spread of information. At this point in time, Facebook Twitter in particular are not a driving force of news... at least not yet. Overall, only 9% of news consumers regularly follow news recommendations from the Facebook and Twitter accounts of news organizations (Mitchell, 2012). Social networks are serving as an additional way to access the news but clearly have not become a replacement source yet.

Although there has been a rise in digital news consumption, a study conducted by McKinsey & Company found that actual time spent with the news on digital devices is much lower than time spent in print publications. When measuring news consumption by time spent rather than by raw audience numbers, statistics have shown that digital platforms are only getting 8% of the action while print platforms take the rest (Edmonds, 2013). This is not to say that digital platforms are unimportant and shouldn't be pursued; rather, it means that mobile-exclusive groups are small but growing and newspapers will need to develop strategies for engaging audiences online consistently.

The time-spent statistics suggest that there is more life in print publications than is evidenced by falling print ad revenues and raw audience numbers. However, Edmonds (2013) point out that "impressive time spent with print news does not by itself solve the basic advertising problem of vanished monopoly pricing power and strong competition from a wide range of targeted digital marketing options." Shorter digital sessions may actually be a more efficient way of consuming news and the ability to directly participate in comments and social media may be viewed as a better experience than passively reading alone.

We are still in a transition phase and it is difficult to say what the future will hold for the newspaper industry. It is probable that audience numbers and time spent on mobile devices will continue to increase in the coming years, but this does not necessarily mean that print publications will become obsolete. Regardless of what happens with print and mobile, the news industry will adapt and survive. Smaller newspapers may bottom out along the way, as some already have, but the industry as a whole will continue to bring information to the American public as long as there still exists the freedom the press.

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