

The Commercial And Cultural Implications Of Online Distribution

Alexander M. Jacobs
Department of Electrical Engineering and Computer Science
United States Military Academy
West Point, New York 10996 USA

Faculty Advisor: Dr. Barry L. Shoop

Abstract

While the reality of online distribution is not new, the continual advances in infrastructure have allowed this disruptive technology to encompass various media. Online distribution allows for the precipitous and selective acquisition of media. Online distribution has enormous positive potential for various people. It allows for the free flow of information that can provide an individual with college level knowledge on any subject. It can also introduce upstart artists and manufactures to individuals that would otherwise never be exposed to their products. However, this technology presents serious implications for businesses associated with media distribution. With its ability to give users unprecedented access to media, such as songs and books, online distribution enables the replacement of physical media all together. This process can already be seen in the music industry and is on the precipice of occurring in both the gaming and book industries. Additionally, online distribution introduces new concerns over copyright protection as it allows individuals to provide the products of others for all people to view and own free of charge. This reality has forced many companies to institute policies to curb these acts of piracy that arguable hurt actual paying customers. Perhaps most significantly, online distribution is beginning to change the culture of modern society. As advances in bandwidth, compression algorithms, integrated devices, and even 3D printers allow for the distribution of ever growing and changing products, society will continue to shift from a materialistic culture to an ever more socialist culture. This disruptive technology, while having enormous positive potential, may present negative implications to both commercial industries and commercial culture. The paper provide an overview of online distribution, present a logical framework that defines online distribution as a disruptive technology, and describe the potential negative implications to both the commercial industry and commercial culture.

Keywords: Online Distribution, Disruptive, Innovation

1. History of Online Distribution:

During the late 1950's and 1960's, the United States founded the Advanced Research Projects Agency (ARPA) to focus on developing information technologies that could survive subordinate-network losses, such as losses due to invading forces or even nuclear strikes [1]. With this focus in mind, ARPA universities and contractors met with Department of Defense representatives to discuss protocols for the transfer of information via computer networking. This discussion cumulated in the development of ARPANET (Advanced Research Projects Agency Network) in 1969. Initially connecting to four research sites, ARPANET expanded to include 63 sites in 1975, and by 1980, "200 host computers were connecting 20,000 people at university, military, and government locations" [2].

Commercial use of ARPANET was a heavily debated topic during its life as the network was solely design for research purposes. However, in 1992, the United States Congress passed the Scientific and Advanced-Technology Act, permitting access from research and education communities to computer networks not used exclusively for research and education purposes, enabling commercial use of ARPANET and other similar networks [3]. As the market for network access for commercial customers grew, the ARPANET project ended and replaced by a myriad of network service providers that we know today as the internet [4]. The introduction of web browsers helped streamline

this myriad of networks into a simplified user interface. Web browsers such as Spyglass Mosaic, Netscape, and Internet Explorer enabled individuals to access nearly any person or company on the internet if the web address was known. To better sift through these numerous addresses, search engines were developed to provide users a way to search for specific information. This information can range from web pages, images, songs, movies, etc. The most notable of these search engines today are Google and Yahoo!. As the internet improved and matured along with the establishment of web browsers and search engines, adequate infrastructure gave rise to various digital distribution markets. These markets ranged from the music distribution sites of Napster and iTunes, to the online game stores of Steam and Origin, to video databases like YouTube and Twitch. Each of these sites provides the service of online distribution: the distributing media (all forms of information and communication) across the internet.

The growing popularity of online distribution coincided with the introduction of computers into society, as well as hardware inventions that supported electronically distributed files. According to United States Census data, computer ownership in households increased from 36.6% in 1997 to 75.6% in 2011. Household internet use increased from 18.0% to 71.7% during the same span of time [5]. This increase in household computer and internet use gave innumerable individuals access to online distribution. With a search of a song, an individual could listen to a song on one site and electronically acquire it on another.

2. Online Distribution as a Disruptive Innovation

Technological development is a continuous process that occurs in industry on a daily basis. This process allows companies to develop innovations that improve on the performance of their predecessors. However, some of these innovations have the potential to change entire markets. Clayton Christensen describes this phenomenon in his book, *The Innovator's Dilemma*. By broadly defining technology as “any process that an organization can use to transform labor, capital, materials, and information into products and services of greater value,” [6] Christensen differentiates between two types of technological developments: sustaining technology and disruptive technology. Where the former improves upon existing performance metrics (the qualities customers value in a product or service), the latter introduces at least one new performance metric. This new metric typically causes the disruptive technology to underperform against the established metric(s) of the predecessor technology [7]. As a direct consequence of this underperformance, the existing predecessor technology and its sustaining technology are generally valued over the new disruptive technology. However, disruptive technologies tend to be “cheaper, simpler, smaller, and frequently, more convenient to use” [8].

With the emergence of the internet into households in the 1990's, numerous online markets rose to fill certain online distribution niches. These niches typically consisted of providing media to individuals such as music or videos. Since then customers have progressively switched to using these markets compared to more traditional retail stores. This switch among customers into the digital market centers on the concept that digital distribution is a disruptive technology compared to the more traditional method of physical media sold in retail stores (CDs, Blue-ray, VHS, etc.).

When compared to traditional retail stores, digital distribution introduces two new performance metrics: instantaneity and specificity. Online distribution allows individuals the ability to view and acquire media at the click of a button. This instantaneous nature of online distribution vastly improves upon the traditional method of going to a store to buy media. Along with digital distribution's instantaneity is specificity. Unlike traditional physical media that force individuals to take whole collections of information (albums, newspaper, etc.), digital distribution allows those individual the ability to access specific piece of media (songs, news articles, etc.). However, these metrics came at the expense of quality. When information is transferred into a digitally format, the quality of the information suffers due to the compression required to facilitate the transfer of data. Recent advancements in compression algorithms and hardware that incorporates digital media into their functionality (iPod, Kindle, etc.) have been able to minimize the degradation of quality, allowing the digital media to be nearly identical from its physical format.

The following examples will explore how digital distribution has disrupted multiple media markets:

1) At the end of the 20th century, the primary medium of music distribution was the compact disk (CD). According to the Recording Industry Association of America (RIAA), between the years 1993 and 2003, music purchased on CD rose from 51.8% of the market to 93.4% [9]. However, the later use digital downloading on the internet would overtake the music market.

The first few years of online music distribution suffered from one major disadvantage compared to the performance metric their CD counterpart – sound quality. When a person digitally downloads music, the sound quality of the music suffers due to the compression of files required to facilitate the transfer of data. Despite this lack of quality, digital distribution's introduction of instantaneity and specificity has indelibly changed the music industry.

With CDs, a person had to go to a store and purchase an entire album. With digital distribution, a person could just download a single song instantly within the comfort of his or her very home. In addition, digital distribution allowed customers the unparalleled ability to buy select individual songs. With the introduction of products that incorporated digital distribution into their functionality (iPod, Zune, etc.) and improvements in compression algorithms the sound quality of downloaded music now rivals that found on CDs. According to the RIAA, between the years 2003 and 2007, the percentage of the music market fell from 93.4% to 27% on CDs while digital downloads rose from less than 1% to almost 45% of the market [10].

2) Introduced to the public in 1985, Blockbuster became the epitome of video rental stores. At its peak in 2004, Blockbuster held 9,000 stores with revenue of \$5.9B. However, by the end of 2009 Blockbuster became bankrupt and forced to close the remaining 300 stores it still had in possession [11]. Ushered in by the success of online movie and TV show distributors Netflix and Hulu Plus, Blockbuster's collapse echoes that of similar rental stores [12].

Like the music industry, the video rental service Blockbuster provided offered higher quality videos than that of the Netflix and Hulu Plus's streaming services. However, the instantaneity and specificity of those digital distributors allowed customers the ability to watch any movie and any episode that are available for streaming. Another benefit that Netflix and Hulu Plus held over Blockbuster was the lack of late fees. Due to the digital nature of these two distribution sites, a customer would never experience a late fee due to a subscription that allowed instant streaming anytime [13]. Blockbuster, however, focuses on a rental practice that enabled customers to rent movie at a cheap cost, but placed a late fee if a video was not returned before the end of the rental period [14]. The fact that services like Netflix and Hulu Plus did not have late fees was another major driving factor for their success. Where customers may be forgetful about video return with Blockbuster, the streaming service of its competitors enticed many customers into their subscription base.

3. Online Distribution as Culturally Disruptive

Despite the benefits associated with online distribution, many cultural problems have arisen. The most common economic and cultural problem associated with online distribution is piracy. Piracy, in relation with online distribution, is the act of illegally distributing copyright media. Typically, the paradigm among traditional companies is that piracy is a customer issue where customers would rather want to obtain something for free rather than pay for it. Piracy can be broken down into various subgroups, the most modern of which are *scanlation* and *torrenting*. *Scanlation* is the scanning, translation, and editing of comics and graphic novels from one language into another [15]. *Torrenting*, conversely, is the download of a constantly moving file. (A computer will download parts of the file it does not have while simultaneously uploading parts of the file others need) [16]. These methods of piracy are commonly used by individuals to acquire various forms of media including comic, movies, and video games. Although both these processes are illegal, many individuals commit these acts, not to gain free media, but rather because they are focused into doing so. Typically, Western audiences are unable to read Japanese comics because Japanese publishers of their comics refuse to release the comics abroad. This has forced foreign audiences to rely on *scanlations* rather than actual issue releases. Similarly, torrents do not typically occur solely because an individual wants to watch a movie or play a game. Individuals typically torrent files because they are unable to access the particular piece of media. An example of this is the Australian video game market. Australia is notorious for refusing to sell mature video games within its borders. Due to this heavy amount of censorship, Australians are forced to torrent the mature games that are generally permitted outside their country [17].

In addition to an inability to access media, anti-piracy methods performed by businesses also facilitate the use of piracy among customers. To address copyright claims by media companies, Viacom being most notable [18], YouTube enabled a feature that allows individuals to issue content ID claims on videos [19]. However, malicious use of this system has placed unlawful claims on various videos. One of the most notable of these claims was on an acclaimed YouTube critic John Bain. Upon receiving a negative review on their game *Day One: Gary's Incident* from John Bain, Wild Games Studio issued a copyright claim on Bain's video claiming John Bain was illegally making advertising revenue with their license [20]. Despite the video following under "fair use" by copyright law [21], the claim was successful and caused the video to be removed from YouTube. Another common problem for online distribution is the use of Digital Rights Management (DRM) by companies. DRM is any technology that is built into an electronic product or service with the aim of limiting its range of uses after purchases [22]. Though starting out as limitations on installation and copying, DRM has developed to place external burden on customers. One of the most common forms of DRM in modern society is the use of online authentication and "always-on" DRM. Used by companies such as Ubisoft, online authentication requires customers to register their product online before being able to fully use the product. "Always-on" DRM is a policy that requires customers to be online whenever using a product.

[23] Though these methods help prevent piracy, they place burden on the customers and the companies of the products. In addition to having customers be online, companies requiring these methods must provide servers to maintain the online traffic required for customers. These servers are often overwhelmed due to miscalculations of traffic handling [24], creating quality problems for customers. However, cracked files are typically released for illegal distribution that bypasses this requirement, enabling piracy users a better gaming experience than those of actual paying customers. Due to this burden on paying customers and the unreliability of associated products, this use of DRM actually facilitates piracy by enabling pirates to have a better quality product than paying customers.

To help address these problems of availability and DRM, Gabe Newell, Creator and founder of Valve Corp. and Steam (largest online distributor of video games), has proposed a new paradigm for piracy. For many companies, the Russian marketplace has been a center for piracy, forcing companies to either avoid the market or set heavy DRM restrictions on their products. However, Gabe Newell challenged this assumption and allowed Steam to operate in Russia. His comments on Steam's performance in Russia, "You say, oh, we're going to enter Russia, people say, you're doomed, they'll pirate everything in Russia. Russia now, outside of Germany, is our largest continental European market" [25]. Gabe Newell attributes this success to the Steam's easy to use interface.

One thing that we have learned is that piracy is not a pricing issue. It's a service issue. The easiest way to stop piracy is not by putting antipiracy technology to work. It's by giving those people a service that's better than what they're receiving from the pirates [26].

This problem with piracy illustrates a changing mentality among customers. Unlike previous generations who lacked innumerable pieces of media compared to today, the vast amount of media available through online distribution has created a socialist idea among customers that they have a right to consume any and all media. By focusing on improving customers access and experience with products, companies can use this mentality to their advantage rather than working against through the use of DRM and market isolation.

4. Summary

Digital distribution is a disruptive innovation to traditional retail stores because it offered the new performance metrics of instantaneity and specificity over those of quality. Despite this underperformance, digital distribution enabled the creation of various online marketplaces for individuals with internet capabilities. As the internet matured, improvements in bandwidth and compression algorithms made the distribution of media faster and easier, while also allowing digitally obtain media to maintain the quality of traditional retail media. The introduction of digital distribution has already changed various marketplaces: the music industry is dominated by online distribution marketplaces of iTunes and Rhapsody, and video rental stores are nearly non-existent. Along with these disruptions in commercial markets, online distribution has brought up changes in cultural attitudes. Like commercial distributions, online distribution also enables products to be illegally distributed easier. Though meant to limit piracy, DRM policies by companies have been known to actually foster piracy. This, along with inabilities to access media, influences individuals to pirate media. However, there has been a general shift in the paradigm concerning piracy. Traditionally, piracy is considered a customer issue where customers would rather want to obtain something for free rather than pay for it; however, a new paradigm suggests that piracy is actually a service issue where people pirate due to poor or lack of a product or service. With this change in paradigm, companies can work with the mentality of all-media access rather than against like companies before.

5. Summary

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