



Blame the Internet?



Figure i – Blame the Internet, or thank the Internet?

Many in the entertainment industry are quick to blame piracy for any revenue decline in their business. It's valid to blame user behavior rather than the underlying technology that enabled change. *But why not blame the Internet itself?* Several marketplaces have had similar disruptions to their revenue streams thanks to the Internet. Figure i outlines just a few industries where consumer behavior was transformed and where the Internet upset classic business models:

- In the communications industry, Skype essentially destroyed long-distance calling.
- In the entertainment industry, the compact disc suffered due to the introduction of MP3 encoding for digital audio and the ability to "rip" music to a personal computer. The availability of larger and cheaper hard drives further accelerated the migration of music to computers. These capabilities created a perfect storm for moving music into the realm of computing. Then, services such as YouTube, as well as a plethora of subscription-based services such as Spotify and Rhapsody, moved everything into the cloud. A recent study from IFPI shows that CD revenue and unit sales continued to decline after peaking in 1999. Incidentally, this decline began around the birth of Napster (launched in June 1999), so it's easy

to point fingers. In contrast, sales of music singles through online services have soared and are expected to continue doing so over the next several years. As shown in Figure ii, overall revenue generated from singles has not compensated for the decline in CD revenue. Consumer buying habits have demonstrated *the need and want* for more granularity in purchasing songs rather than entire albums. This is further complicated by the fact that OTT services such as YouTube contain a sizable library of popular music for free.

- Email replaced faxing and helped progress the notion of the *paperless office*.

"SMS estimated to be generally \$30,000 per GB, is being replaced by OTT that deliver approximately \$10 per GB"
Sandvine - Global Internet Phenomena (13.1H)

- Short Message Service (aka. SMS or text messaging) suffered as mobile phones began to support WiFi and subscribers realized they could send messages to their friends over significantly cheaper data plans. Services such as Viber, WhatsApp, and eventually Apple's iMessage are all examples of Over the Top (OTT) Internet applications that bypassed traditional incumbent services.
- In print media, newspapers continue to suffer in favor of online posts. When news is delayed by anything greater than real time, users migrate to online services. Live news broadcasts are still the flagship of linear television, but even that is changing. The consumption of news is broader than that of broadcast journalism seeing as blog posts and social networking sites have made it possible for everyone to be a potential reporter. And thanks to smartphones having the ability to record video, a wider audience of bystanders now have the

CD & Singles - Global Revenue & Units

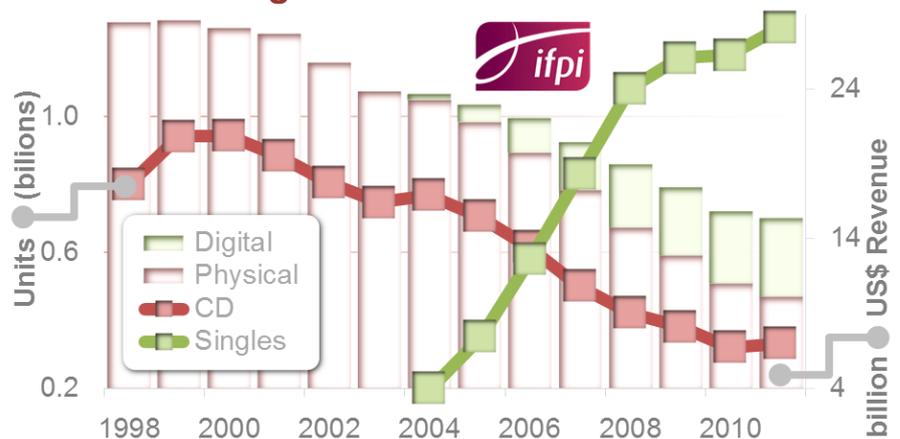


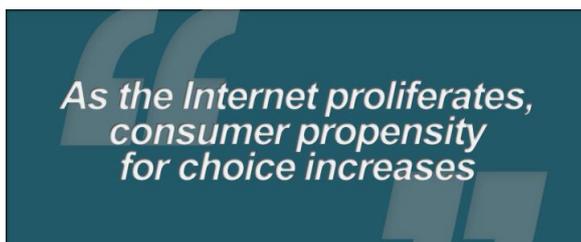
Figure ii – Global CD & Single Shipments & Revenue '98-'11

opportunity to capture breaking news long before professional journalists have a chance to arrive at the scene. Twitter¹⁵ and Facebook have also established themselves as sources for breaking news.

Thank the Internet?

As much as the Internet has disrupted long-established business models, it has also spawned new and creative applications:

- Facebook and many other social networks offer consumers a fresh platform to fuel humanity's desire to communicate. But it hasn't replaced face to face communications. It has only complemented our need for human interaction.
- Online shopping did not replace brick and mortar¹⁶ shopping - consumers still enjoy visiting the local mall to try on a new pair of jeans.
- Email didn't replace the postal service either - consumers are just sending and receiving packages, rather than handwritten letters.
- Likewise, mobile phones did not entirely replace landlines.



The Internet may be viewed as destroying legacy business models, or it could be viewed as the catalyst to helping reshape consumer behavior. For every business that closes its doors, countless other Internet businesses open. Ultimately, consumers now have more choice in how they consume entertainment. Thanks to choice and content ubiquity, users are treating the cloud as their personal entertainment library.

Giving Consumers What They Want

The ubiquity of content has also come at a cost. A study from Envisional shows that nearly a quarter of Internet traffic violates copyright laws¹⁸. BitTorrent traffic represents the largest chunk of such offences. A related study from PublicBT showed that out of the top 10,000 torrents, nearly half of them consisted of movies and television programs (Figure iii). Furthermore, less than one percent of posts were innocent of copyright infringement.

Internet piracy revolves around a risk to reward balance. Essentially, this is an assessment of the likelihood of

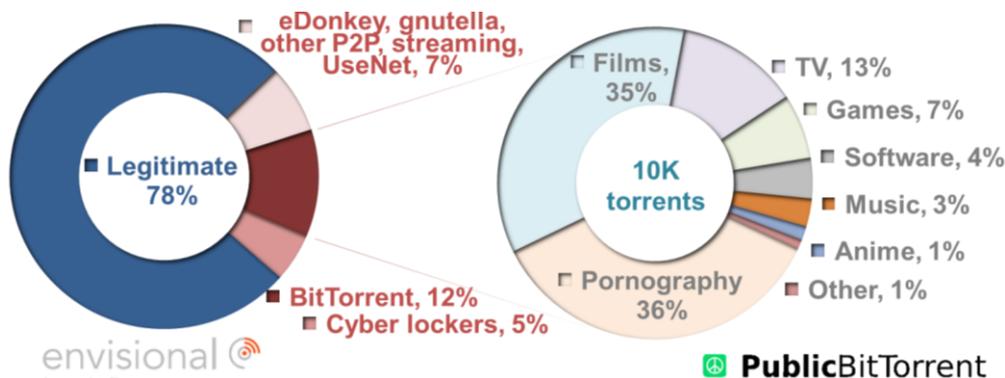


Figure iii – Internet Traffic split by file types that violate copyright.

being caught weighed against the ease of downloading content illegally. Within this balance, there are both inhibitors and motivations to stealing content. Some of those who infringe upon copyright laws feel vindicated because they cannot obtain content by legitimate means. Other motivations include the ability to completely circumvent the restrictions imposed by digital rights management (DRM¹⁹) - measures that restrict the portability of the content. Once absent of DRM, content is easily transcoded into various formats, screen sizes, and bitrates.

There are also several inhibitors that make illegal downloading quite cumbersome. To begin with, there is the issue of content management. Titles need to be downloaded, stored, and organized. Storage costs and database management can become a nightmare. Even with declining hardware costs, a 4TB hard drive can fill up quickly. Additional headaches include inconsistency in quality – it may take days to get a file, only to find it's unwatchable. Malware infections that propagate through P2P networks can also wreak havoc on a home network and affect innocent family members. Finally, websites such as The Pirate Bay²⁰ are sophisticated search applications at best, and cannot compare to a personalized OTT entertainment platform.

Illegal Frustrations

- Poor quality & corrupt files
- Incomplete bundles
- Content management
- Security issues
- It's illegal!

Legal Motivators

- Enhanced User Experience
- Personable & Interactive
- Recommendation Engines
- Quality Consistency
- Peace of Mind: "A good citizen"

Illegal Motivators

- Content Availability
- No Complex DRM
- Content Portability
- It's Free!

Legal Frustrations

- Lack of Availability
- Attractive Price
- Content Upgradability
- One-Stop-Shop

Figure iv – Illegal and Legal Drives & Inhibitors for Entertainment Consumption



For subscribers that side with the law and use a legitimate OTT video service, content management is a non-issue as everything is streamed from the cloud. Consequently, there is no need to organize files or allocate hard drive space. Additional benefits include a pleasant and compelling user interface and user experience (UI/UX). This may include social interaction with friends, family, and communities of similar interests. Many OTT services also offer sophisticated search and discovery and recommendation engines that are personalized in order to satisfy each subscriber's unique viewing behavior. The inclusion of reviews, trailers, rating statistics, and comprehensive metadata adds to an engaging interactive experience that attracts loyal subscribers. These platforms also offer a much more consistent level of entertainment quality.

Whether legitimate or illegal, consuming entertainment has radically changed over the past decade. Digital video is in a constant state of flux and consumer behavior is changing at an unprecedented pace – both in how people purchase and enjoy their entertainment. Bandwidth speeds have increased significantly in both the home and mobile environments, thereby disrupting the entire entertainment industry. Understanding consumer behavior in terms of their frustrations and motivations helps bring clarity to how this industry has shaped itself. A better understanding of *the enemy* may help content owners and distributors mitigate Internet piracy.

Knowing What to Fix • Fixing What We Know

Some would argue that the entertainment industry hasn't been able to keep up with the disruptions the Internet has created. Even with sizable improvements in digital video quality and Internet streaming, there are still shortcomings to address. These frustrations are summarized as follows:

Lack of Portability

Content owners are largely concerned that the digital delivery of their content will cannibalize lucrative cinema and broadcast TV revenue streams. This is partially the reason why entertainment portability is restricted across televisions, computer screens, smartphones and tablets. This is further complicated by the fact that content purchased on one operating system cannot be played on another platform. But consumers want universal flexibility and ease-of-portability of their purchases. Consumers want the flexibility to stream shorter content on their mobile devices and enjoy longer viewing experiences on larger screens. Cinema goers are willing to pay higher fees for an immersive experience on a 30-foot theatre screen with THX[®] surround sound. The point is that one consumption method does not necessarily steal revenue from another. Audiences simply take different paths while consuming different types of content on different devices.

Lack of Upgradability

This issue centers around the irritating aspect of repurchasing movies as technology continues to

improve. Content owners enjoy a resurgence of revenue for long-tail content²² when new technology is introduced to the market. To be fair, this is mainly an issue for collectors rather than the average consumer. Movies purchased on VHS (240 horizontal lines) in the 80's or DVD (480 lines NTSC or 576 lines PAL) in the 90's required a new purchase on Blu-Ray (1080 lines) in the 00's, and will eventually require a repeat purchase when 4K versions (2160 lines) are introduced by the end of this decade. "By 2020 there will be over 200 Ultra HD channels worldwide, rising to over 1,000 by 2025. The availability of Ultra HD TVs in the home and Ultra HD services by pay TV operators with advanced set-top boxes will drive the commercial opportunity for channel launches and content production," says Tom Morrod of IHS Electronics & Media²³.

Each new format makes the one it succeeded obsolete. Sizable video libraries turn out to be worthless virtually overnight. Interestingly enough, consumers have acclimated to the fact that a repurchase is expected when a new format is introduced. Content distributors attempt to entice collectors to repurchase content by packaging old titles into box-sets, director's cuts, collectors' editions, and other creative packaging strategies. The entertainment industry unfortunately never took a *software upgrade* approach to offering consumers an incremental purchase path as movies were released in a better resolution. The computing industry established this expectation from its inception. Now that entertainment and computing are converging into OTT services, this may provide a platform to offer the same level of granularity.

Lack of Breadth

Most online video services have relatively limited libraries, especially on a global stage. One of the main challenges is that content rights are costly to obtain across international borders. This poses a challenge for smaller OTT providers that simply don't have the capital to purchase expensive premium content such as Hollywood movies. Geo-location restrictions are used to prevent accessing content outside of specific jurisdictions. This applies to live broadcasts such as news or sports events, but is also an issue for video on demand (VoD) services that offer movies or television shows. Shows such as HBO's "Game of Thrones" or Netflix's "House of Cards"²⁴ further complicate the issue by being offered exclusively in their home platform. This certainly helps OTT providers to differentiate themselves from the competition, but it doesn't help consumers who want a central repository for their entertainment content.



Figure v – Evolution of Entertainment Consumption

Lack of Accessibility

The lack of accessibility of content on a global stage may be the single most important limitation of entertainment today. This arguably leads to the main motivations behind Internet piracy. Global theatrical and home releases are not available simultaneously. There are legitimate reasons for this delay: the negotiation of distribution rights, modifying or creating new promotional materials for each foreign market, dubbing services, and censorship approval - to name just a few. Even with these challenges, it may take years for some content to reach a foreign destination, *if at all*. Some passionate movie goers don't have the patience to wait for a legal means to obtain what they want.

Lack of Quality

Some consumers are willing to watch a poor quality bootleg cam²⁵ for the bragging rights of *being the first*. But studies show that subscribers lean toward better quality video if it's available²⁶. According to Ericsson research of over 400 million viewers around the globe, "High video quality is very important to consumers, and they are prepared to pay for it." Anders Erlandsson, Senior Advisor, Consumer Insights, Ericsson ConsumerLab.²⁷

As video resolutions improve for Internet streaming, so does bandwidth. But problems still persist. No one likes the buffer symbol when streaming video on the Internet. Even though the technology has improved considerably over the past decade, many regions around the world lack the bandwidth and latency to stream a respectable level of video quality. This is further complicated by consumers wanting to watch content on their mobile devices where bandwidth is further restricted, and even comes at a higher cost.



Finding the Right Price

Online services such as Netflix²⁸ have shaken the ownership vs. licensing business models. Owning an expensive Blu-Ray disc typically meant a sizable investment for the adrenaline rush of opening the package and the pleasure of watching it for the first time. The disc was then relegated to a living room shelf or drawer for the rest of its existence. Consumers are in the process of trading their need for ownership with accessing that content in the cloud at a much lower cost. As consumers opt for a more granular approach to their content, the industry continues to struggle to find the right balance between price, value, and flexibility.

Building the Right Playground

Comparing the user experience of yesterday's TV's electronic programming guide (EPG²⁹) to today's modern OTT service may not seem fair. But it's a reasonable comparison in the context of fulfilling the subscriber's hunger to find what they want. In the early days of television, the broadcaster would say, "Don't change the channel, we'll be right back" just before a commercial break. This approach was easier in the days when only 16 channels existed. As broadcast services moved to hundreds of channels, the EPG was created to help consumers find new and interesting content. But navigating TV menus was cumbersome. As we move to today's digital era, consumers are accustomed to web

surfing, clicking on applications, social networking, and googling. This level of interaction began in computing and is now integral to entertainment. Even with hundreds of channels available on a typical pay-TV service, consumers are still drawn toward less than 20 of them³⁰. Websites such as IMDB³¹ and Rotten Tomatoes³² enable quick access to statistics, reviews, and metadata surrounding movies and television shows. Users have the ability to navigate scheduled release dates, user ratings, peer suggestions, trivia, frequently asked questions, and message boards. OTT services add recommendation engines, personalized advertising, favorite lists, and much more. This virtual treasure trove of information, offered at a granular level, increases consumer excitement and converges on the desire for a compelling environment where subscribers will stay longer simply because they are having fun. Quite a bit of developmental effort needs to focus on improving these virtual environments.

Viewing • Owning • Licensing

The origins of entertainment began with live performances in theaters and concert halls. At the turn of the 19th century, the motion picture industry began³³. But the ability to sell music to consumers wasn't possible on a grand scale until the second half of the 20th century. The vinyl record³⁴, and eventually VHS³⁵ tapes for movies, allowed consumers to take their entertainment home with them. Many technologies changed hands over the decades: Vinyl ⇒ cassette tapes ⇒ CD's for music, and VHS ⇒ laser discs ⇒ DVD ⇒ Blu-Ray for movies. This century has evolved the *buy-to-own* paradigm to a *license-and-view* business model. Some view today's ubiquitous 12cm discs as the last physical technology for music and movies. In the future, everything will live in the cloud (Figure v). The desire to own entertainment is in the process of being replaced by the ability to easily access it.

Outlining the limitations of digital video and streaming services is only the first step in the journey to personalizing the consumer experience, recognizing Internet threats as entertainment opportunities, and uncovering new revenue streams.

Turning Piratez into Consumers, Part III

Part III of this series will look into the positive aspects of the entertainment industry and how various industries have adjusted themselves to capitalize on the changes in consumer behavior and international opportunities.

Read Additional Articles in this Series

I. Consumption is Personal

- <http://dusil.com/2013/02/28/consumption-is-personal/>

In the days of linear television, broadcasters had a difficult task in understanding their audience. Without a direct broadcasting and feedback mechanism like the Internet, gauging subscriber behavior was slow. Today, online video providers have the ability to conduct a one-to-one conversation with their audience. Viewing habits of consumers will continue to rapidly change in the next

ten years. This will require changes in advertising expenditure and tactics.

II. Granularity of Choice

- <http://dusil.com/2013/04/01/granularity-of-choice/>

The evolution from traditional TV viewing to online video has been swift. This has significantly disrupted disc sales such as DVD and Blu-Ray, as well as cable and satellite TV subscriptions. With the newfound ability to consume content anytime, anywhere, and on any device, consumers are re-evaluating their spending habits. In this paper we will discuss these changes in buying behavior, and identify the turning point of these changes.

III. Benchmarking the H.265 Video Experience

- <http://dusil.com/2013/04/22/benchmarking-the-video-experience/>

Transcoding large video libraries is a time consuming and expensive process. Maintaining consistency in video quality helps to ensure that storage costs and bandwidth are used efficiently. It is also important for video administrators to understand the types of devices receiving the video so that subscribers can enjoy an optimal viewing experience. This paper discusses the differences in quality in popular video codecs, including the recently ratified H.265 specification.

IV. Search & Discovery Is a Journey, not a Destination

- <http://dusil.com/2013/05/13/Search-and-Discovery-Is-a-Journey-not-a-Destination/>

Television subscribers have come a long way from the days of channel hopping. The arduous days of struggling to find something entertaining to watch are now behind us. As consumers look to the future, the ability to search for related interests and discover new interests is now established as common practice. This paper discusses the challenges that search and discovery engines face in refining their services in order to serve a truly global audience.

V. Multiscreen Solutions for the Digital Generation

- <http://dusil.com/2013/06/24/multiscreen-solutions-for-the-digital-generation/>

Broadcasting, as a whole, is becoming less about big powerful hardware and more about software and services. As these players move to online video services, subscribers will benefit from the breadth of content they will provide to subscribers. As the world's video content moves online, solution providers will contribute to the success of Internet video deployments. Support for future technologies such as 4K video, advancements in behavioral analytics, and accompanying processing and networking demands will follow. Migration to a multiscreen world requires thought leadership and forward-thinking partnerships to help clients keep pace with the rapid march of technology. This paper explores the challenges that solution providers will face in assisting curators of content to address their subscriber's needs and changing market demands.

VI. Building a Case for 4K, Ultra High Definition

Video

- <http://dusil.com/2013/07/15/building-a-case-for-4K-ultra-high-definition-video/>

Ultra-High Definition technology (UHD), or 4K, is the latest focus in the ecosystem of video consumption. For most consumers this advanced technology is considered out of their reach, if at all necessary. In actual fact, 4K is right around the corner and will be on consumer wish lists by the end of this decade. From movies filmed in 4K, to archive titles scanned in UHD, there is a tremendous library of content waiting to be released. Furthermore, today's infrastructure is evolving and converging to meet the demands of 4K, including Internet bandwidth speeds, processing power, connectivity standards, and screen resolutions. This paper explores the next generation in video consumption and how 4K will stimulate the entertainment industry.

VII. Are You Ready For Social TV?

- <http://dusil.com/2013/08/12/are-you-ready-for-social-tv/>

Social TV brings viewers to content via effective brand management and social networking. Users recommend content as they consume it, consumers actively follow what others are watching, and trends drive viewers to subject matters of related interests. The integration of Facebook, Twitter, Tumblr and other social networks has become a natural part of program creation and the engagement of the viewing community. Social networks create an environment where broadcasters have unlimited power to work with niche groups without geographic limits. The only limitations are those dictated by content owners and their associated content rights, as well as those entrenched in corporate culture who are preventing broadcasters from evolving into a New Media world.

IX. Turning Piratez into Consumers, I

- <http://dusil.com/2013/10/25/turning-piratez-into-consumers-i/>

IX. Turning Piratez into Consumers, II

- <http://dusil.com/2014/07/15/turning-piratez-into-consumers-ii/>

X. Turning Piratez into Consumers, III

- <http://dusil.com/2015/05/12/ott-multiscreen-digital-video-series-10-turning-piratez-into-consumers-iii/>

XI. Turning Piratez into Consumers, IV

- <http://dusil.com/2015/05/26/ott-multiscreen-digital-video-series-11-turning-piratez-into-consumers-iv/>

XII. Turning Piratez into Consumers, V

- <http://dusil.com/2015/09/22/ott-multiscreen-digital-video-series-12-turning-piratez-into-consumers-v/>

Content Protection is a risk-to-cost balance. At the moment, the cost of piracy is low and the risk is low. There are no silver bullets to solving piracy, but steps can be taken to reduce levels to something more acceptable.

It is untrue that everyone who pirates would be unwilling to buy the product legally. It is equally evident that every pirated copy does not represent a lost sale. If the risk is too high and the cost is set correctly, then fewer people will steal content. This paper explores how piracy has evolved over the past decades, and investigates issues surrounding copyright infringement in the entertainment industry.

About the Author



Gabriel Dusil was recently the Chief Marketing & Corporate Strategy Officer at Visual Unity, with a mandate to advance the company's portfolio into next generation solutions and expand the company's global presence. Before joining Visual Unity, Gabriel was the VP of Sales & Marketing at Cognitive Security, and Director of Alliances at SecureWorks, responsible for partners in Europe, Middle East, and Africa (EMEA). Previously, Gabriel worked at VeriSign & Motorola in a combination of senior marketing & sales roles. Gabriel obtained a degree in Engineering Physics from McMaster University, in Canada and has advanced knowledge in Online Video Solutions, Cloud Computing, Security as a Service (SaaS), Identity & Access Management (IAM), and Managed Security Services (MSS).

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Tags

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