

BEHIND THE CYBERLOCKER DOOR:

A Report on How Shadowy Cyberlocker Businesses
Use Credit Card Companies to Make Millions

A NetNames Report for Digital Citizens Alliance



#FollowTheProfit



ABOUT THE DIGITAL CITIZENS ALLIANCE

The Digital Citizens Alliance is a nonprofit, 501(c)(6) organization that is a consumer-oriented coalition focused on educating the public and policymakers on the threats that consumers face on the Internet. Digital Citizens wants to create a dialogue on the importance for Internet stakeholders— individuals, government, and industry—to make the Web a safer place. Based in Washington, DC, the Digital Citizens Alliance counts among its supporters: private citizens, the health, pharmaceutical and creative industries as well as online safety experts and other communities focused on Internet safety. Visit us at digitalcitizensalliance.org.

In February 2014, Digital Citizens released the report “Good Money Gone Bad” looking at the revenues of ad-supported content theft websites.





ABOUT NETNAMES

NetNames provides companies with global reach on the Internet whilst protecting their brands from online fraud. As the global leader in this field, NetNames has been chosen by many of the world's most successful brands to enable and protect their internet presence. With online channels becoming increasingly important for a corporate's commercial and marketing activities, NetNames offers a single point of contact for management of domain names, in all locations, globally, and protection for brands across all online environments. NetNames offers expertise, infrastructure and service levels that are hard for corporates to replicate internally and enjoys long term relationships with large and mid-sized corporates.

Headquartered in London, NetNames' global network includes offices in Cambridge, Paris, Copenhagen, Stockholm, Zurich, Munich, New York, San Francisco, Melbourne and Singapore.

CLEANING UP THE CYBERLOCKER CONTENT THEFT PROBLEM

As a society, we can no longer shrug off content theft as the isolated activity of high school and college students who want to watch a movie or listen to music for free. Recent reports, this one by NetNames and one earlier this year by MediaLink, lay bare the truth that content theft is big business, raking in hundreds of millions of dollars a year – essentially bleeding the Internet for profit while making it less attractive for generations to come.

Content theft harms not only creators whose products are stolen and legitimate distributors that are forced to compete with cyberlockers who pay nothing for the content that drives their business. It also hurts consumers who pay the price for “free” content in a reduction of quality choices as revenues are reduced, and may be subjected to identity theft and malware that cyberlockers are associated with.

New research by NetNames has demonstrated that:

- It's easy to profit on the Internet when you leverage other people's creative works. In fact, it is possible you could make millions of dollars doing so.
- There is a compelling difference between the business models of rogue cyberlockers that peddle in content theft and legitimate cloud storage services.
- Malware is a serious issue when it comes to content theft.
- Major brands are victimized by content thieves who leverage these brands to make their own rogue sites seem legitimate.
- That all it takes for bad operators to succeed is for the facilitators of commerce – payment processors and the advertising industry, among other stakeholders– to do nothing. In the NetNames research, for example, MasterCard and Visa could be used to buy subscriptions on almost all the cyberlockers

The question is what we do about it. It's going to take concerted action by the Internet and the payment processors, advertising industries, consumers, public interest groups, Internet safety organizations and responsible government officials to address this corrosive issue that threatens our basic trust in our online world.

So what can be done? Payment processors are a good first place to look.

There are commercially reasonable, technologically feasible steps can be taken by payment providers such as MasterCard and Visa. Specifically, MasterCard and Visa should follow PayPal's lead and adopt policies for their networks against doing business with these rogue operators.

If they take such an approach, it would drive customers to less trustworthy forms of payment. For example, a customer seeking free content may not feel comfortable turning over his or her credit card (knowing the limits of their liability), but may be reluctant to give a cyberlocker their bank routing information or using Bitcoin to make a purchase.

So why should MasterCard and Visa take such a step? It's about the company you keep, and payment processors have shown a willingness to disassociate with other bad actors, such as, online pharmacies selling controlled substances without a prescription. MasterCard and Visa deserve credit for their efforts to curtail those sales.

But they should take a hard look at the checkered history of their cyberlocker partners. Cyberlockers have been indicted criminally, in the case of MegaUpload, and found liable in civil court, in the case of Hotfile. Simply put, the businesses that simply exploit and expropriate the creative efforts of others do not occupy a legitimate place in the Internet ecosystem.

Content theft is a cancer on the Internet. It introduces viruses and malware to computers, robs creators who rely on the Internet to sell their products, damages brands by associating them with illegal and inappropriate content and provides seed money for criminals to engage in other illegal activities.

The mix of bad, and often illegal, operations with advertisements and services from brands we know and trust erodes the reputation these good actors have spent billions and worked decades to build. It even threatens the Internet itself. We rely on the Internet to deliver information and commerce into our homes and businesses, but that will not continue if users cannot browse the web with confidence and security. The time is now to protect Internet freedom and safety we consumers enjoy; we can't wait any long to combat the threat posed by these rogue actors.



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1. CYBERLOCKERS REAPING MILLIONS IN PROFIT

1.1 EXECUTIVE SUMMARY

Rogue “cyberlocker” operators peddling stolen content are making nearly \$100 million in annual revenues by operating as hubs for the for-profit distribution of infringing digital copyrighted content. That is the clear finding of our research looking at the profitability of the leading cyberlockers. Unlike legitimate cloud storage services whose clients are people and businesses that need to store, access, and share data, the cyberlocker business model is based on attracting customers who desire anonymously to download and/or stream popular, copyright infringing files that others have posted.

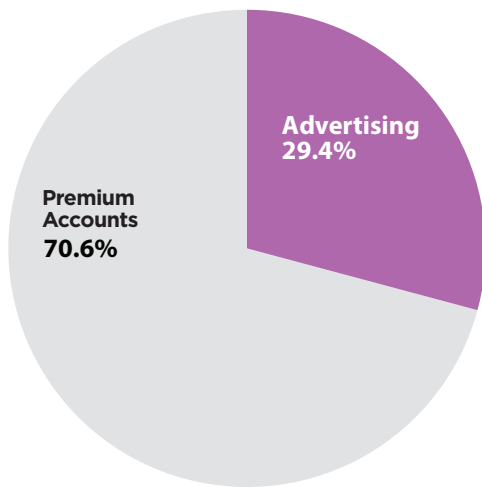
The cyberlocker business model is designed around content theft. In fact, cyberlockers generally pay or provide various incentives to those who distribute popular infringing content and discourage the use of their services for reliable data storage. As this study shows, the overwhelming bulk of the files distributed by cyberlockers infringe copyright.

This report for the first time looks at the sources of revenue and the operating costs in order to estimate the level of profit that cyberlockers enjoy. Because cyberlockers pay nothing for the main product they distribute – the content created by others – the revenues and profit margins are enormous. Among the major findings in this paper are the following:

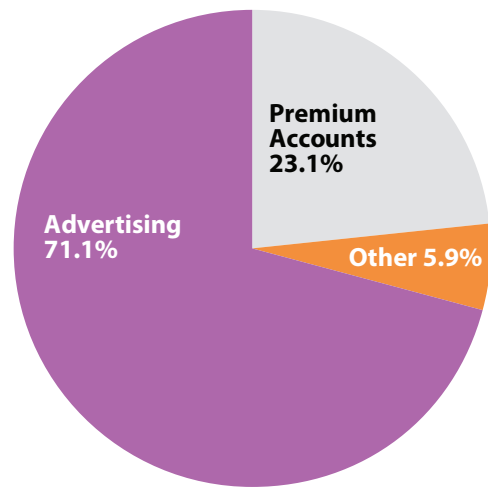
- We examined thirty sites: the fifteen most popular **direct download cyberlockers** (which store files for users to download to their computers) and the fifteen most popular **streaming cyberlockers** (which host video files that users stream, rather than download).
- Overall, **total annual revenue** across the thirty cyberlockers equated to \$96.2 million or \$3.2 million per site. One site gathered \$17.6m per year in revenue. This is based on a highly conservative analysis and the actual revenues of these cyberlockers are likely to be substantially higher.
- **The overwhelming use of cyberlockers is for content theft.** Analysis of a sampling of the files on the thirty cyberlocker sites found that the vast majority of files were clearly infringing. At least 78.6 percent of files on direct download cyberlockers and 83.7 percent of files on streaming cyberlockers infringed copyright. Further, an additional 13.2 percent of content on direct download cyberlockers and 9.4 percent of content on streaming cyberlockers was identified as pornography, the bulk of which was believed to be infringing. Moreover, research shows that the use of cyberlockers is focused on this infringing content: pirated copies of the latest films, TV shows, books, or games generate more download or streaming activity than a piece of personal content such as a wedding video. This means that the amount of content theft that results from the operations of each cyberlocker will be even higher than the percentage of infringing content that was found on each site.
- Every cyberlocker that offered paid premium accounts to users provided the ability to pay for those subscriptions by **Visa or MasterCard**, with only one exception. Only a single cyberlocker accepted PayPal.
 - A deeper look at the revenues and profits shows how **profitable** content theft is for cyberlockers: The 15 largest **direct download cyberlockers** combined to make \$63.1 million in annual revenue, which breaks down to \$4.2 million per site in annual revenue. Direct download cyberlockers averaged **\$2.7m profit each**, extrapolating from March 2014 revenue of \$4.2m, a rate of profit of 63.4 percent.¹
 - The **most profitable** direct download cyberlocker generated **annual profit of \$15.2m** from revenue of \$17.6m, with a profit margin of **86.1 percent**.

¹ This rate of profit accords with information gathered from statements made by the owner of direct download cyberlocker Hotfile in a court submission: in a five-month period leading up to the start of legal proceedings against the site by the MPAA, Hotfile made a profit of \$13.7m on revenue of \$22.4m, a rate of profit of 61.4%.

- 70.6 percent of direct download cyberlocker revenue came from **subscription services** enabled by payment processors, and 29.4 percent came from **advertising**.
- The 15 largest **streaming cyberlockers** combined to make \$33m in annual revenue, which breaks down to \$2.2m per site annually, a rate of profit of 87.6 percent.
- The **most profitable** streaming cyberlocker generated **annual profit of \$8.1m** from revenue of \$8.4m, a rate of profit of 96.3 percent.
- 71.1 percent of streaming cyberlocker revenue came from **advertising** and 23.1 percent from **premium account subscriptions** enabled by payment processors.



**Revenue Sources:
Direct Download Cyberlockers**

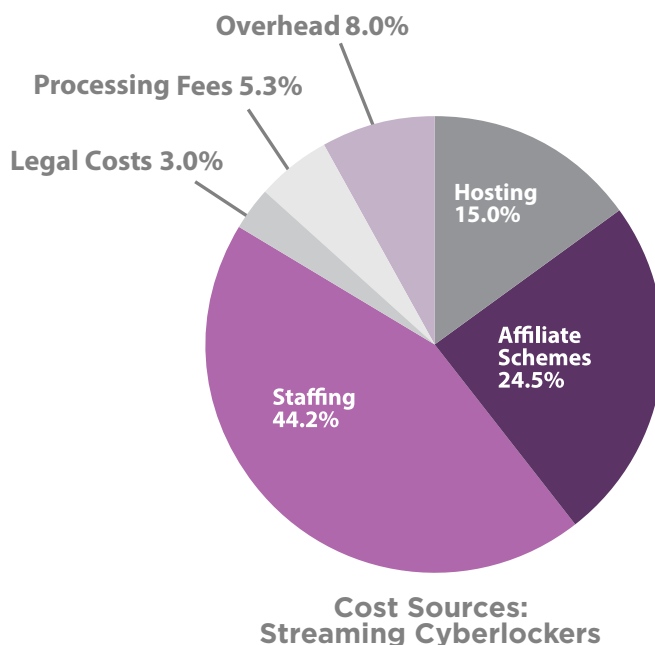
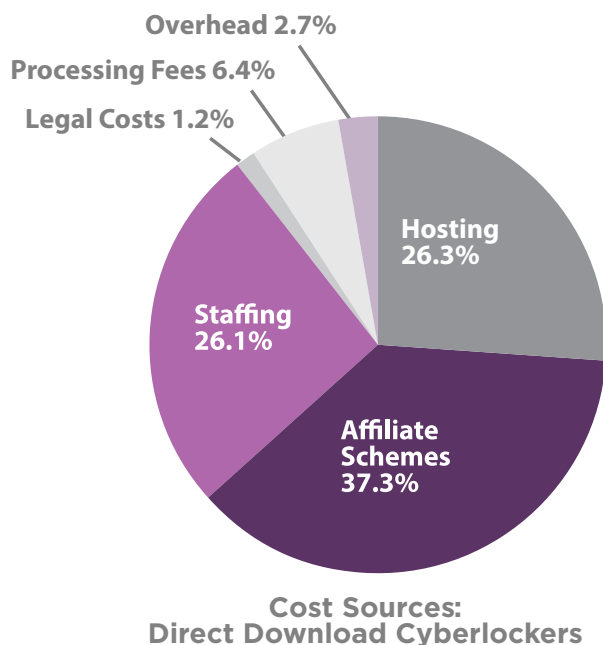


**Revenue Sources:
Streaming Cyberlockers**

Revenue

Cyberlocker sites draw revenue from three sources. Most cyberlocker sites offer basic functionality for free; users are encouraged to enhance their experience by buying a **premium subscription** that provides benefits such as faster and no-wait downloads, a site free of advertising, and longer storage times. A subscription typically costs around \$10 per month. With the exception of one site, all thirty cyberlockers also featured **advertising**, frequently including premium brands, usually displayed while a visitor is waiting to download or stream content. A small number of streaming cyberlockers also promoted **download managers** that featured third-party software for which a fee is paid to the site when installed by a user.

NetNames analyzed each of these sources of revenue for the thirty sites and found that direct download cyberlockers drew in most revenue (70.6 percent) from premium subscriptions while streaming cyberlockers gathered most revenue from advertising (71.1 percent) and a smaller relative amount from subscriptions (23.1 percent).



Costs

Cyberlockers face costs from a number of areas. **Hosting and network infrastructure** is required to ensure stable file hosting and good transfer speeds. Staff, such as software engineers must also maintain sites and there may be **legal costs** and other **overhead**. Some sites also operate an **affiliate or rewards scheme** that pays users for premium subscription referrals or if an uploader's files are downloaded or streamed a certain number of times.

Research found that the largest area of cost for direct download cyberlockers were from these **incentive-based payments** to "affiliates" that are awarded to subscribers uploading the most widely distributed content or persuading the most users to sign up for premium accounts. Hosting and staffing costs were the second largest cost. For streaming cyberlockers, **staffing costs were highest**, followed by affiliate payments and hosting costs. On average, costs were significantly less for streaming cyberlockers than direct download cyberlockers.

Additional Findings

- Five direct download cyberlockers and six streaming cyberlockers were hosted in the United States. A single hosting company, Webzilla, hosted seven cyberlockers.
- Seventeen sites drew on advertising provided by a single advertising network, Propeller Ads Media.

Summary

This report demonstrates that immense levels of revenue and profit are possible for sites that facilitate and encourage infringement by providing centralized hosting for infringing content. The costs incurred in distributing, without permission, the content of others pale in comparison to the substantial revenues that can be gathered through the collection of subscription fees through payment processors and advertising dollars.

2. INTRODUCTION

2.1 WHAT IS A CYBERLOCKER?

Cyberlockers are online services that are intentionally architected to support the massive distribution of files among strangers on a worldwide and unrestricted scale, while carefully limiting their own knowledge of which files are being distributed. The link to a user's file stored on a cyberlocker can be posted to any location for any user to access: cyberlockers generally place no limits on who can download or stream a file.

For cyberlockers, the client is not the person who uploads files; indeed, people who post popular files are often paid by the cyberlocker through affiliate programs that reward users when their uploaded content is accessed, and these payments can be one of the largest items of cyberlocker expense (See Section 4.1.2, below). Personal storage and access are not the purpose: indeed, files not accessed for a period of time are deleted by most cyberlockers, and individual file synchronization among a user's devices is not offered.

Instead, the cyberlocker's real client is the person who comes to the site to download or stream the content and does not know or care who uploaded it. As explained in detail below, cyberlockers earn their money by selling advertising around these visitors, and/or by upselling them subscription services.

Cyberlockers bear some superficial similarities with legitimate cloud storage services, like DropBox and Amazon Cloud Drive. Both types of services allow files to be uploaded to servers (the cloud) and then accessed by the uploader and shared with others.

However, cloud storage services and cyberlockers operate on a completely different business model. Legitimate cloud services are not designed to incentivize their use for copyright infringement, and their business model is not based on attracting customers who will pay to download infringing files. The customers for legitimate cloud storage services are the people and businesses who contract with the services to store their files online, enabling, among other things, personal file synchronization between a user's devices (that is, the ability to mirror a file uploaded to a user's cloud account across the user's individual cloud folder on their laptop, phone, and work computer). That data is stored for as long as the client is willing to pay for storage services. Most cloud storage services also allow their clients to share files with others who also have a reason to access the file, but limit the amount of sharing permitted.²

Another contrast between legitimate cloud storage providers and cyberlockers can be found in the enforcement of repeat infringer policies. Cloud storage users found regularly sharing copyrighted material will quickly find their accounts terminated. While some cyberlockers also state that they follow such a policy, evidence suggests that this is rarely the case. For instance, court records reveal that despite receiving over eight million notifications from rightsholders about infringing content held on the site, a cyberlocker called Hotfile terminated the accounts of just 43 users – most of whom were banned for reasons other than infringement. More than sixty users received more than 300 infringement notices each, but were never terminated despite Hotfile's repeat infringer policy.

Ultimately, the most important difference between legitimate cloud storage services and cyberlockers emerges when one searches for infringing materials. As discussed in Section 6.3 below, the overwhelming bulk of files found on cyberlockers are infringing. Searches by NetNames for infringing materials stored on legitimate cloud services found negligible amounts of content.

² For instance, Dropbox provides free users with 20GB of bandwidth each day and Pro users with 200GB per day. <https://www.dropbox.com/help/4204/en>

2.2 THE RESEARCH PROJECT

Digital Citizens Alliance asked the Piracy Analysis team at NetNames to examine the business models and profitability of the top cyberlockers. Analysis focused on the financial operations of sites and looked at all likely sources of revenue for each site and all likely costs in order to uncover the level of profit that makes the cyberlocker ecosystem an attractive proposition for site owners. The intention of the research was to carefully inspect each site and draw out, using a range of methodologies, the specific revenue and cost basis on which each site operates. Through this, it was possible to determine the levels and drivers of profitability for cyberlockers.

Research focused on thirty sites in total, equally split between two types of cyberlocker.


- The fifteen most popular **direct download cyberlockers**: these are sites which offer centralized online storage for files uploaded by an Internet user. The user is provided with a link to each file that can be shared with others to facilitate downloads across a wider community (or the entire internet). Typically, direct download cyberlockers (DDCs) are set up in a way that they cannot be searched directly: instead, a user locates a link to a file on a separate link site that collates and indexes content hosted on cyberlockers.
- The fifteen most popular **streaming cyberlockers**: these sites host video content only which is typically streamed to visitors (rather than downloaded) but operate in a similar fashion to direct download cyberlockers. Users upload video content to streaming cyberlockers (SCs), are provided a link, and then share that link in some fashion online.

The determination of revenue (Section three) focused on aspects such as online advertising and premium accounts (which offer an enhanced experience to paying users). Costs (Section four) looked at hosting and Internet infrastructure, payments to affiliates, staffing costs, and processing fees. The research methodologies used to determine each aspect of revenue and cost are discussed in Appendix A.

2.3 FOCUS OF ANALYSIS

The thirty sites examined within this research are listed in the table below. Research examined the operation of the sites between February and April 2014 and sites are ordered by the number of monthly unique visitors to each site in March 2014 according to comScore, a respected and widely used service that provides such data. Analysis by NetNames verified each site as holding a vast majority of infringing content (see Section 6.3).

Direct Download Cyberlockers	Streaming Cyberlockers
4Shared.com	Putlocker.com
Mega.co.nz	YouWatch.org
Uploaded.net	Streamcloud.eu
Zippyshare.com	Sockshare.com
Turbobit.net	Movshare.net
BitShare.com	Novamov.com
Letitbit.net	Played.to
FreakShare.com	Allmyvideos.net
Rapidgator.net	Videoweed.es
Ryushare.com	Flashx.tv
Depositfiles.com	Divxstage.eu
Uptobox.com	Gorillavid.in
Filenuke.com	Billionuploads.com
1Fichier.com	Thefile.me
2Shared.com	Daclips.in

 Choose download type	SLOW SPEED DOWNLOAD	HIGH SPEED DOWNLOAD
Download type:	Free	Premium
Download speed:	Limited	Unlimited
Maximum parallel downloads:	1	Unlimited
Download restriction:	1 file per 120 minutes	NO
Direct/Hot Linking:	✗	✓
Downloads start instantly:	✗	✓

2.4 THE CYBERLOCKER USER EXPERIENCE

2.4.1 Direct Download Cyberlockers

Typically, direct download cyberlockers are intentionally designed to offer no search capability. Instead, users locate links for infringing content via search engines or on known “link sites” which collate and index content hosted on cyberlockers.³ This could be any kind of files – videos, music, games, software, books – direct download cyberlockers do not restrict the type of content that they host.

The chart on the next page shows the usual download process for a user seeking a pirated film title: a user may start with a search engine and a query such as a film title together with a piracy modifier like ‘download’ or a cyberlocker name such as ‘rapidgator’. The search engine might return results to a cyberlocker itself (like RapidGator as shown in the chart) or to a linking site for cyberlockers. On other occasions, a user who understands the content theft process will begin their infringement at a known linking site, browsing or searching for a title to download.

When the user clicks through to the direct download cyberlocker, they are usually offered a choice: a ‘slow speed’ download for free or a ‘premium’ download at high speed. The former entails enduring a waiting period before the download can commence and results in a download that can take a number of hours for a film title. Advertisements are also shown to the user, frequently in pop-up windows, as they browse the site and begin their download. The “premium” selection, by contrast, requires purchasing a premium account at the cyberlocker (see Section 3.2) and provides unrestricted access to content hosted on the cyberlocker that can be downloaded at very high speeds.

³ Linking sites are generally of three different types: metasearch sites such as FilesTube; forum sites which often require a user to register and sign in like Warez-BB; and blog-style sites that often collate content by season and episode (such as Zone-Telechargement).

1. Search engine

lego movie rapidgator

Web Videos Images Shopping News More

About 2,410 results (0.18 seconds)

Download file [The.Lego.Movie.PROPER.720p.HDRIP.x264...](#)
 rapidgator.net/.../The.Lego.Movie.PROPER.720p.HDRIP.x264.AC3.TIT...
 Downloading: The.Lego.Movie.PROPER.720p.HDRIP.x264.AC3.TITAN.part2.rar.
 File size: 799.04 MB. Copy to My Files ...

Download file [1irp0.The.Lego.Movie.2014.720p.BluRay...](#)
 rapidgator.net/.../1irp0.The.Lego.Movie.2014.720p.BluRay.DTS.x264C...
 Downloading: 1irp0.The.Lego.Movie.2014.720p.BluRay.DTS.x264CHD.part11.rar.
 File size: 401 MB. Copy to My Files. This file can be downloaded by premium ...

Download file [LEGO.Movie.VgmProper-RLD.part01.rar](#)
 rapidgator.net/file/.../LEGO.Movie.VgmProper-RLD.part01.rar.html
 10+ items - Downloading: LEGO.Movie.VgmProper-RLD.part01.rar.
 Choose download type SLOW ... HIGH SPEED DOWNLOAD.
 Download type Free Premium.
 Download speed Limited Unlimited.

2. Link site

Media	»» [RG] The Lego Movie (2014) 720p BluRay - 800MB	video	0	16	Sun Aug 24, 2014 6:30 pm
Media	»» [RG] The Lego Movie (2014) 800p AAC x264 - 109031	webfont	0	21	Sun Aug 24, 2014 6:17 pm
Media	»» [RG] The Lego Movie (2014) 720p HDRIP x264 AC3-EVE	webfont	0	19	Sun Aug 24, 2014 6:10 pm
Media	»» [RG] The Lego Movie (2014) BluRay (E9998)	video	0	7	Sun Aug 24, 2014 7:18 pm
Media	»» [RG] The Lego Movie (2014) 720p HDRIP x264 AC3-EVE	webfont	0	27	Sun Aug 24, 2014 6:39 pm
Media	»» [RG] The Lego Movie (2014) 800p AAC x264 - 109031	webfont	0	21	Sun Aug 24, 2014 6:17 pm
Media	»» [RG] The Lego Movie (2014) 720p HDRIP x264 AC3-EVE	webfont	0	6	Sun Aug 24, 2014 5:53 pm

»» [RG] The Lego Movie (2014) BDRip 720p AAC x264 - 19021

Download from [RapidGator](#)

Links: [Copy to My Files](#)

Rapidgator cyberlocker

RAPID GATOR

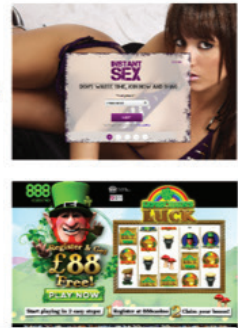
Don't want to wait? Register now and get PREMIUM ACCESS FOR FREE!

Downloading: The.Lego.Movie.2014.BDRip.720p.AAC.x264.t@b3t1.part1.rar File size: 1000 MB

Copy to My Files

Choose download type	SLOW SPEED DOWNLOAD	HIGH SPEED DOWNLOAD
Download type:	Free	Premium
Download speed:	Limited	Unlimited
Maximum parallel downloads:	1	Unlimited
Download restriction:	1 file per 120 minutes	NO
Direct/Hot Linking:	✗	✓
Downloads start instantly:	✗	✓
Fast download even when servers are busy:	✗	✓
Support for resuming downloads:	✗	✓
Support for download acceleration:	✗	✓
Estimated Download time:	1 hour 52 minutes 47	36 seconds

Adverts



Waiting time

Please hold, download will start in 36 seconds. Do not wish to wait? Please [click here](#). Premium users download files without delays and at maximum speed!

RAPID GATOR

Don't want to wait? Register now and get PREMIUM ACCESS FOR FREE!

Downloading: The.Lego.Movie.2014.BDRip.720p.AAC.x264.t@b3t1.part1.rar

[CLICK HERE TO DOWNLOAD](#)
Copy to My Files

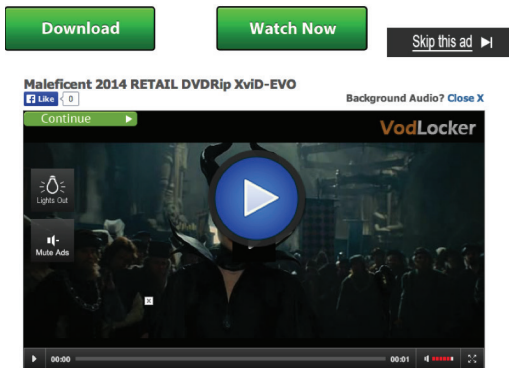
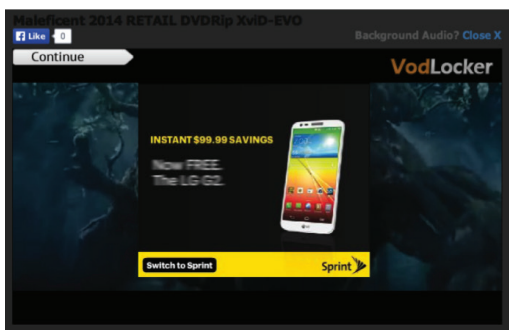


2.4.2 Streaming Cyberlockers

Consumption of pirated content via streaming cyberlockers is similar to that for direct download cyberlockers but is focused only on video content. Again, most streaming cyberlockers do not provide a search facility. Instead, those seeking infringing video use search engines or dedicated link sites to find films or television episodes to watch. A search query such as 'watch Maleficent' or 'stream Amazing Spider-Man free' finds links to video hosts or video linking sites containing content. The chart on the next page shows this process.

A link site like Movie4k might be located via a search engine or already known by the user. Such a site typically provides a number of different choices for a specific film. In the example shown, Movie4k links the user to a pirated version of the film Maleficent on the streaming cyberlocker Vodlocker. This site generates revenue primarily through advertising, much of which is deceptive and deliberately confusing.

For instance, the first Vodlocker screenshot shows a large video player with a white 'play' button. Many users will naturally click the play button, expecting the video to start playing – yet the button is inoperative and simply launches a pop-up browser window containing an advert. In many cases, these advertisements tend to promote 'scam' streaming site or malware applications such as Cinechest.⁴ Recent research by NetNames, to be issued in a separate report, found that more than half (55.3 percent) of cyberlockers were responsible for malware infections on user computers.

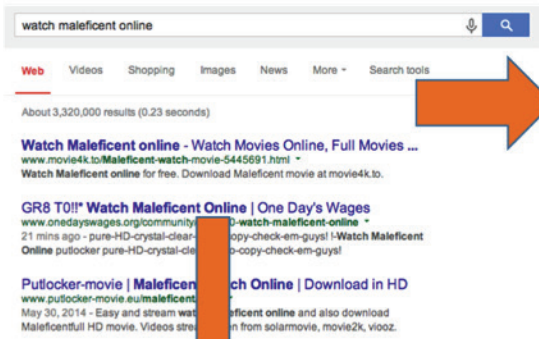


The only way to view the pirated video on VodLocker is to click the much smaller 'Proceed to video' button beneath the large video player. This launches a page which does contain the pirated video – though yet again, a false play button is overlaid on the video that also launches an advertisement and the player is below large prominent buttons stating 'Download' or 'Play Now', both of which launch another advertisement. Further advertisements are displayed over the video whenever the video is paused (in this case, for mobile telephone provider Sprint).

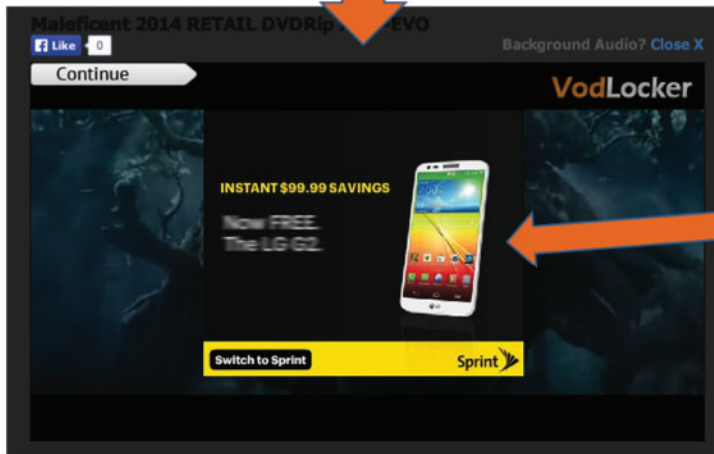
⁴ Such sites promise access to free full-length movies to users but usually only deliver legitimate public domain content such as that found on the Internet Archive, profiting from the confusion of users who believe they will be given access the pirated material they seek. Consumer complaints about Cinechest include "please do not sign up for this, such a scam, only very old movies and hidden charges to your credit card. very dissatisfied!!!! then they charged me \$1 to cancel my supposedly "free" account which I only needed a credit card to confirm my identity!!" and "CineChest.com give a 5days trial to test the service but never talk about the fee after trail finishes. They charge automatically \$49.99!!! I never saw a movie because all of them are really old maybe because they don't pay copyrights for them. Stay away!"

1. Search engine

2. Link site



Fake streams and adverts



More adverts when paused

2.5 REPORT STRUCTURE

Section three of the report examines the revenue generation methods employed by different cyberlockers such as premium accounts and advertising. Analysis is split between direct download cyberlockers and streaming cyberlockers. Section four then looks at the main cost factors facing each site: the need for hosting, services that enable a site to accept payments, staffing costs, and other areas. Section five combines these two sections to discuss overall profitability for direct download cyberlockers and streaming cyberlockers. Section six analyzes the main findings and looks at the key drivers of profitability in the cyberlocker ecosystem. Appendix A details the different methodologies used to determine revenue, costs, and profitability.

3. REVENUE


3.1 REVENUE SOURCES

Cyberlocker revenue typically derives from two main sources: payments for premium accounts and advertising. Thirteen of fifteen direct download cyberlockers (DDCs) and twelve of fifteen streaming cyberlockers (SCs) offered a paid premium account to users. Fourteen of fifteen DDCs and all SCs displayed advertising. A small number of SCs also offered ‘download managers’ which were bundled with third-party programs that paid a commission on installation.

3.2 PREMIUM ACCOUNTS

3.2.1 Direct Download Cyberlockers

Typically, a DDC offers a free basic, restricted service to users. For instance, only one file is allowed to be downloaded at any one moment; files above a certain size cannot be downloaded; transfer speeds are capped, usually at around 100Kb/s; and users have to sit through a wait period before a download can begin. The screenshot below from the DDC Rapidgator illustrates some of these limitations. The 1.45GB file can only be downloaded by RapidGator premium users and the table shows the main differences between free use of the site and premium use: “unlimited” download speed and parallel downloads are available to those who pay, as well as instant downloads without any wait restriction. The estimated download time is “38 seconds” for a file of this size using a premium account compared to “2 hours 48 minutes” for ‘Free’ users.


Downloading: [Despicable.Me.2.2013.1080p.BrRip.x264-YIFY.rar](#)
File size: 1.45 GB

[Copy to My Files](#)

This file can be downloaded by premium only

Choose download type	SLOW SPEED DOWNLOAD	HIGH SPEED DOWNLOAD
Download type:	Free	Premium
Download speed:	Limited	Unlimited
Maximum parallel downloads:	1	Unlimited
Download restriction:	1 file per 120 minutes	NO
Direct/Hot Linking:	✗	✓
Downloads start instantly:	✗	✓
Fast download even when servers are busy:	✗	✓
Support for resuming downloads:	✗	✓
Support for download accelerators:	✗	✓
Estimated Download time:	2 hours 48 minutes 38	38 seconds

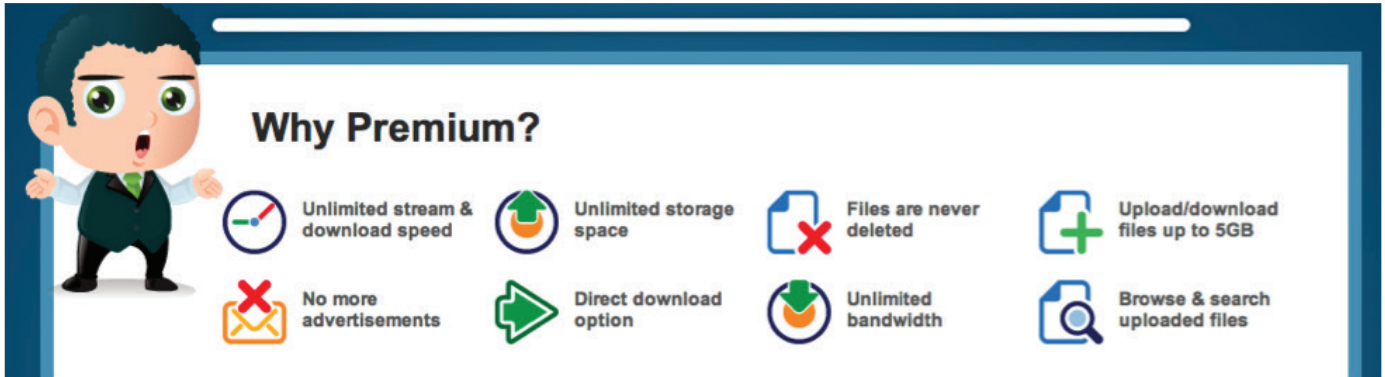
Not all DDCs place the same kind of restrictions upon users. For instance, Mega offers instant downloads at the same speeds to all users, whether they are a premium user or not, and only restricts downloads when the user has reached a certain bandwidth limit each month. Instead of similar advantages to Rapidgator and most other DDCs, Mega provides “Pro” (paid) users of its service with a large storage space and removes any bandwidth limit. Two DDCs – Zippyshare and 2Shared – do not offer any premium service at all, instead providing the same basic service to each user: for instance, Zippyshare only allows uploads of up to 200MB and deletes files if they have not been downloaded for a period of thirty days.

On average, premium accounts at DDCs cost US \$10.57 per month with discounts offered if a user purchases an account for six months or a year (for instance, 4Shared offers a premium account at \$9.95 per month or \$78.00 for a year).

3.2.2 Streaming Cyberlockers

Premium accounts are slightly less common amongst SCs and also less expensive on average. Across the twelve SCs that offered premium accounts, the average premium account cost \$8.25 per month.

For users of most SCs, there are three advantages to a premium account: unlimited streaming; the removal of advertising; and the ability to download, as well as stream, the video. The screenshot below from YouWatch lists additional benefits targeting uploaders of content, such as permanent storage and large file upload.



3.3 REVENUE FROM PREMIUM ACCOUNTS

3.3.1 Direct Download Cyberlockers

The table shows the fifteen DDCs analysed for this project together with basic information about the premium accounts offered by each site and the revenue that each DDC is estimated to gather via this revenue source. The full methodology for this calculation, based on a series of conservative assumptions, is provided in Appendix A. All monetary amounts in this table and all other tables in this report are in US dollars.

Site	Monthly Unique Visitors (comScore)	Premium Cost		Revenue	
		One Month	One Year	Per Month	Per Year
4Shared	55,487,123	9.95	78.00	985,034	11,820,412
Mega	21,034,702	13.79 ⁵	137.99 ⁶	445,259	5,343,114
Uploaded	20,203,332	13.79 ⁵	96.59 ⁷	427,661	5,131,934
Zippyshare	18,573,508	No premium account			
Turbobit	18,541,078	9.95	59.95	329,150	3,949,803
BitShare	17,209,366	9.99	89.99	306,122	3,673,462
Letitbit	12,276,745	9.66 ⁸	138.00 ⁹	214,773	2,577,276
FreakShare	11,101,592	9.99	64.99	197,476	2,369,714
Rapidgator	10,118,432	12.99	137.95 ¹⁰	207,013	2,484,156
Ryushare	8,492,452	13.75 ¹¹	82.75 ¹²	179,454	2,153,448
Depositfile	8,488,437	13.75 ³	75.83 ¹³	179,265	2,151,178
Uptobox	5,961,917	6.90 ¹⁴	69.00 ¹⁵	89,650	1,075,797
Filenuke	5,346,602	5.99	60.00	76,066	912,787
1Fichier	5,135,550	6.90 ⁴	69.00 ¹¹	77,224	926,684
2Shared	3,959,767	No premium account			
Total	221,930,603			3,714,147	44,569,764
Average	14,795,374			247,610	2,971,318

Notes: Exchange rate of €1 / USD \$1.38 used where necessary.

The estimates show an obvious correlation between popularity of each DDC and the level of revenue and also demonstrate the substantial levels of revenue that can be gathered through this method - close to \$1m per month for the largest site.

³ Cost listed on site as €9.95

⁴ Cost listed on site as €4.50

⁵ Cost listed on site as €9.99

⁶ Cost listed on site as €99.99

⁷ Cost listed on site as €69.99

⁸ Cost listed on site as €7.00

⁹ Cost listed on site as €100.00

¹⁰ Cost listed on site as €99.96

¹¹ Cost listed on site as €9.95

¹² Cost listed on site as €59.96

¹³ Cost listed on site as €54.95

¹⁴ Cost listed on site as €6.00

¹⁵ Cost listed on site as €50.00

3.3.2 Streaming Cyberlockers

Overall, subscription revenue for SCs is lower than for DDCs. This is primarily due to the fact that unique monthly visitors are lower and partly because premium costs are also lower on average for SCs than DDCs.

Site	Monthly Unique Visitors (comScore)	Premium Cost (USD)		Revenue	
		One Month	One Year	Per Month	Per Year
Putlocker	22,785,287	2.99	29.99	68,128	817,536
YouWatch	13,964,746	11.04 ¹⁶	110.39 ¹⁷	154,171	1,340,616
Streamcloud	9,921,929	No premium account			
Sockshare	6,851,266	5.99	44.99	41,039	492,469
Movshare	6,690,969	10.00	50.00	66,910	802,916
Novamov	6,470,410	10.00	50.00	64,704	776,449
Played	6,337,032	No premium account			
Allmyvideos	6,308,948	4.99	n/a	31,482	377,780
Videowed	5,454,007	10.00	50.00	54,540	654,481
Flashx	4,582,461	9.99	79.99	45,779	549,345
Divxstage	3,834,317	10.00	50.00	38,343	460,118
Gorillavid	3,439,445	9.00	n/a	30,955	371,460
Billionuploads	2,661,683	No premium account			
Thefile	2,460,445	9.00	60.00	22,144	265,728
Daclips	2,050,000	9.00	n/a	18,450	221,400
Total	103,812,945			636,644	7,639,732
Average	6,920,863			42,443	509,315

Notes: Exchange rate of €1 / USD \$1.38 used where necessary.

¹⁶ Cost listed as €9.00 on web site.

¹⁷ Cost listed as €79.99 on web site.

3.4 ADVERTISING

With only a single exception, all thirty cyberlockers displayed advertising. None of thirty sites displayed advertising on the homepage. Advertisements typically appeared on file download or video streaming pages.

For instance, the screenshot shows typical advertisements that are shown when a (non-paying) user attempts to download from the direct download cyberlocker 1Fichier. The page offers a choice between Free or Premium (paid) download of a particular file. Advertisements feature from Honda and hgregg on the top screenshot and Walmart and Jimmy Dean on the bottom screenshot. Other advertisements that appeared on this site were noted from Target, Progressive Insurance, Allstate Insurance, Amazon, gaming service World of Warcraft, LasikPlus, American Express, Best Western, Palms Casino Resort, Michelob, Beats Headphones, and major automotive manufacturers Toyota, Kia, and Cadillac.

The image displays two screenshots of the 1Fichier.com website. The top screenshot shows the main interface with a comparison table for Free and Premium features, a subscription section with a 'SPECIAL DISCOUNT' for 1 year at 9.99€, and a list of resellers. Advertisements for hgregg and a yellow Honda Fit are visible. The bottom screenshot shows a file download page for 'TW.Vmprcdmypr-HD3D.rar' with a 'Download' button. It also features the same subscription and reseller information, along with advertisements for Cheez-It (3 boxes = 1 book) and Jimmy Dean Grilled Steak.

Features	Free	Premium
Download limit	Limited	Unlimited
Download speed	Limited Best effort	Unlimited
Download managers	✗	✓
Resume downloads	✗	✓
Direct download	✗	✓
Simultaneous downloads	✗	✓

SUBSCRIBE
(Credit Card or PaysafeCard)

1 month - 3.99 €

SPECIAL DISCOUNT
1 YEAR - 9.99 €
Save 80%!

Each subscription includes one discovery premium key. Premium status includes 100GB/month of free Hotlinks credits. Subscriptions are for fixed time periods and will not be renewed automatically.

RESELLERS

mega-premium.eu *	www.24instant.com *
vip-keys.com	utop.us
www.365premium.com	www.hotfilepremiumstore.com
digitadiko.com	
letsqopremium.com	

You should not use and
* Best resell

Filename : 1
Creation date : 2
Size : 6

Features	Free	Premium
Download limit	Limited	Unlimited
Download speed	Limited Best effort	Unlimited
Download managers	✗	✓
Resume downloads	✗	✓
Direct download	✗	✓
Simultaneous downloads	✗	✓

SUBSCRIBE
(Credit Card or PaysafeCard)

1 month - 3.99 €

SPECIAL DISCOUNT
1 YEAR - 9.99 €
Save 80%!

Each subscription includes one discovery premium key. Premium status includes 100GB/month of free Hotlinks credits. Subscriptions are for fixed time periods and will not be renewed automatically.

RESELLERS

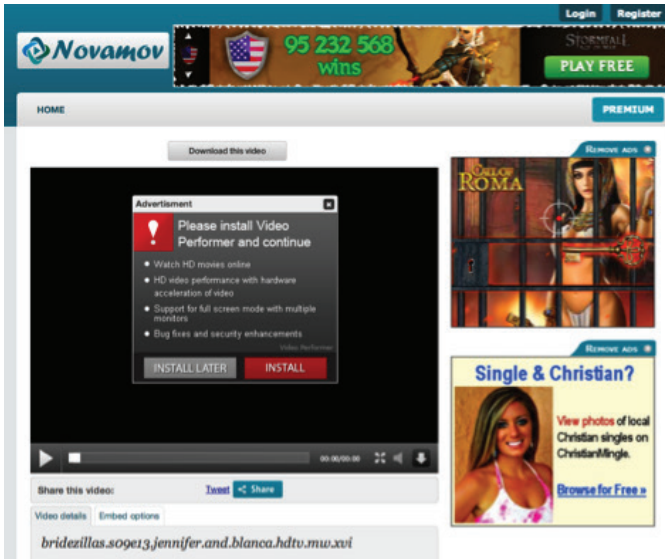
mega-premium.eu *	www.24instant.com *
vip-keys.com	utop.us
www.365premium.com	www.hotfilepremiumstore.com
digitadiko.com	premiumaccounts-seller.blogspot.in
letsqopremium.com	www.oneclickreseller.com

You should not use another resellers.
* Best resellers

Filename : TW.Vmprcdmypr-HD3D.rar
Creation date : 27/04/2014
Size : 699.60 MB

Download

In a similar fashion, the screenshot on the left below from SC NovaMov shows four advertisements – a horizontal banner for an online game near the top of the page, two square advertisements on the right-hand side of the page, both of which include a link to ‘Remove Ads’ above them, and a square advertisement that attempts to persuade the user that they require the installation of a tool called Video Performer in order to watch the video. The screenshot on the right-hand side from Sockshare shows a pre-video advertisement for Domino’s Pizza.



Many cyberlocker sites also featured pop-up or pop-under advertisements, often activated on the first mouse-click on a page (for instance, when the user clicks the download or play button), a broadly effective counter-measure against the pop-up blockers present in many browsers.

3.4.1 Direct Download Cyberlockers

Advertising makes up a smaller proportion – though still significant amount – of DDC revenue compared to premium accounts. On average, each DDC receives more than \$100,000 per month in revenue from advertising. The correlation between popularity and advertising revenue is not as clear as with premium account revenue as DDCs vary in the number of advertisements that they display to the user. All DDCs with the exception of Mega rely on advertising for part of their overall revenue.

The full methodology used to calculate this revenue can be found in Appendix A.

Site	Monthly Unique Visitors (comScore)	Number of adverts shown per month (000s)	Revenue	
			Per Month	Per Year
4Shared	55,487,123	1,013,309	482,208	5,786,501
Mega	13,964,746	No advertising		
Uploaded	20,203,332	280,556	126,250	1,515,002
Zippyshare	18,573,508	340,116	122,442	1,469,302
Turbobit	18,541,078	672,817	242,214	2,906,568
BitShare	17,209,366	278,631	100,307	1,203,687
Letitbit	12,276,745	82,867	29,832	357,984
FreakShare	11,101,592	203,253	73,171	878,051
Rapidgator	10,118,432	272,019	97,927	1,175,122
Ryushare	8,492,452	238,813	85,973	1,031,672
Depositfiles	8,488,437	182,881	59,418	713,015
Uptobox	5,961,917	266,934	55,736	668,829
Filenuke	5,346,602	47,025	16,929	203,148
1Fichier	5,135,550	190,990	39,879	478,544
2Shared	3,959,767	32,935	11,856	142,277
Total	221,930,603	4,103,146	1,544,142	18,529,702
Average	14,795,374	293,082	102,943	1,235,314

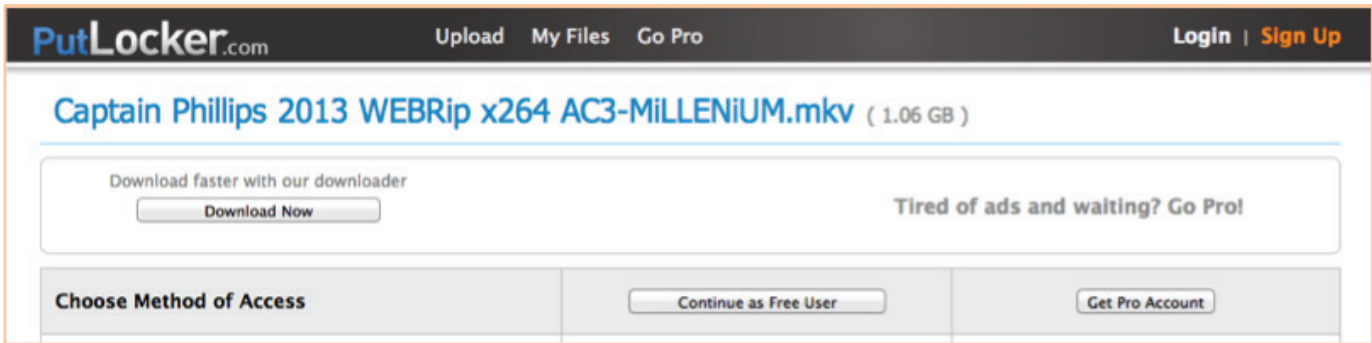
3.4.2 Streaming Cyberlockers

Despite having fewer visitors overall, the fifteen SCs analyzed brought in 27.0 percent more revenue on average from advertising than DDCs: on average, each SC gathered just over \$130,000 in revenue per site per month compared to slightly over \$100,000 from DDCs. The type of advertisements featured on SCs were broadly similar to those on DDCs and brought in a similar rate but SC sites gained more revenue by placing a larger number of advertisements on each page. Advertising makes up the largest proportion of SC revenue.

Site	Monthly Unique Visitors (comScore)	Number of adverts shown per month (000s)	Revenue	
			Per Month	Per Year
Putlocker	22,785,287	518,906	233,508	2,802,091
YouWatch	13,964,746	1,026,000	461,700	5,540,400
Streamcloud	9,921,929	812,700	702,173	8,426,074
Sockshare	6,851,266	130,237	58,607	703,281
Movshare	6,690,969	96,017	43,207	518,489
Novamov	6,470,410	99,338	44,702	536,423
Played	6,337,032	195,415	87,937	1,055,242
Allmyvideos	6,308,948	148,327	66,747	800,967
Videoweed	5,454,007	118,188	53,185	638,215
Flashx	4,582,461	116,219	52,298	627,582
Divxstage	3,834,317	47,552	21,398	256,778
Gorillavid	3,439,445	171,342	77,104	925,247
Billionuploads	2,661,683	49,874	22,443	269,322
Thefile	2,460,445	34,557	15,551	186,609
Daclips	2,050,000	47,912	21,560	258,722
Total	103,812,945	3,612,584	1,962,120	23,545,441
Average	6,920,863	240,839	130,808	1,569,696

3.5 ADDITIONAL REVENUE

Three streaming cyberlockers had an additional source of revenue. PutLocker, Sockshare, and BillionUploads all promoted “download managers” which purported to provide users with simpler methods of downloading the content held on each site.



As an example, the PutLocker Downloader software was promoted to users of the PutLocker site when they attempted to stream a video. It was free to install and downloaded files from PutLocker if a user provided the URL. Despite the software promising “5 times faster” downloads, testing found that files arrived substantially more slowly than when downloaded through a normal web browser. Pop-up advertisements were also observed when the client was running in the background. In addition, installation of the PutLocker Downloader included the installation of third-party programs for which PutLocker receives a fee: a browser plugin named ‘SecretSauce’; a browser toolbar named ‘Imminent’; a chat client; and a replacement browser. Most users would not notice that these programs were included in the installation process of the Downloader.



Overall, total revenue gathered by these services is not significant compared to premium account payments and advertising. Revenue for this type of software is provided from the developers of the third-party programs such as ‘SecretSauce’ that are installed together with the PutLocker software, typically on a pay-per-install basis. The PutLocker Downloader – and the similar programs offered by Sockshare (owned by the same company as PutLocker) and BillionUploads – effectively operates as a trojan horse, offering little of value itself but installing the third-party programs by deception at the same time. Other research from NetNames (to be issued in a forthcoming report) found that more than half (55.3 percent) of all cyberlockers were responsible for malware infections on user computers: it is likely that such third-party installations such as the PutLocker downloader contributed to these malware reports.¹⁸

¹⁸ The 4Shared DDC is linked to a separate paid service named 4Sync which operates as an online backup service. 4Sync functions as a separate company (4Sync Inc.) to the company behind 4Shared (New IT Solutions Ltd) and any revenue the service may make is not included in this analysis.

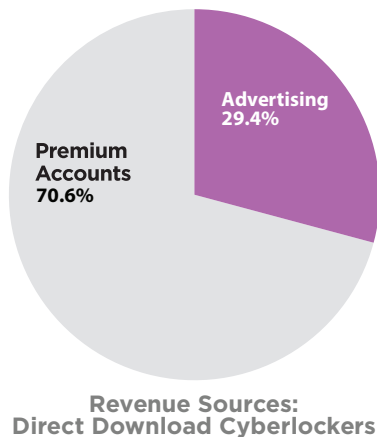
3.6 OVERALL REVENUE

Combining these different revenue sources enables a calculation of the total revenue possible in the DDC and SC ecosystems as well as some analysis per individual cyberlocker.

3.6.1 Direct Download Cyberlocker Revenue

The table below shows overall DDC revenue.

Site	Monthly Unique Visitors (comScore)	Revenue Type		Revenue		Monthly revenue per unique user (\$)
		Premium Accounts (\$)	Advertising (\$)	Monthly (\$)	Annual (\$)	
4Shared	55,487,123	985,034	482,208	1,467,243	17,606,913	0.0264
Mega	21,034,702	445,259	n/a	445,259	5,343,114	0.0212
Uploaded	20,203,332	427,661	126,250	553,911	6,646,936	0.0274
Zippyshare	18,573,508	n/a	122,442	122,442	1,469,302	0.0066
Turbobit	18,541,078	329,150	242,214	571,364	6,856,370	0.0308
BitShare	17,209,366	306,122	100,307	406,429	4,877,149	0.0236
Letitbit	12,276,745	214,773	29,832	244,605	2,935,260	0.0199
FreakShare	11,101,592	197,476	73,171	270,647	3,247,765	0.0244
Rapidgator	10,118,432	207,013	97,927	304,940	3,659,278	0.0301
Ryushare	8,492,452	179,454	85,973	265,427	3,185,120	0.0313
Depositfiles	8,488,437	179,265	59,418	238,683	2,864,193	0.0281
Uptobox	5,961,917	89,650	55,736	145,386	1,744,627	0.0244
Filenuke	5,346,602	76,066	16,929	92,995	1,115,935	0.0174
1Fichier	5,135,550	77,224	39,879	117,102	1,405,228	0.0228
2Shared	3,959,767	n/a	11,856	11,856	142,277	0.0030
Total	221,930,603	3,714,147	1,544,142	5,258,289	33,123,068	n/a
Average	14,795,374	247,610	102,943	350,553	4,206,631	0.0225

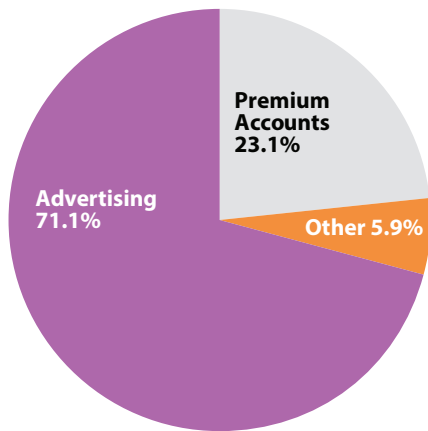


On average, each of the top fifteen DDCs earns \$350,553 per month or \$4.21m each year: 70.6 percent of this revenue comes from premium accounts with 29.4 percent from advertising. Across the DDC ecosystem, revenue totals \$5.26m each month or \$63.10m each year. Individual DDC revenue ranges from \$1.47m per month at 4Shared to \$11,856 per month at 2Shared, a site that does not offer premium accounts and that has only 7.1 percent of the monthly visitors of 4Shared. On a per user basis, it appears that some DDCs are better at monetizing their visitors than others: for instance, Turbobit, Rapidgator, and Ryushare are each able to draw in just over \$0.03 per visitor per month while 2Shared can manage only one-tenth of that.

3.6.2 Streaming Cyberlocker Revenue

The table below shows overall streaming cyberlocker revenue.

Site	Monthly Visitors (comScore)	Revenue Type			Revenue Total		Monthly Revenue per unique user (\$)
		Premium Accounts (\$)	Advertising (\$)	Other (\$)	Monthly (\$)	Annual (\$)	
Putlocker	22,785,287	68,128	233,508	113,926	415,562	4,986,745	0.018
YouWatch	13,964,746	154,171	461,700	n/a	615,871	7,390,450	0.044
Streamcloud	9,921,929	n/a	702,173	n/a	702,173	8,426,074	0.071
Sockshare	6,851,266	41,039	58,607	34,256	133,902	1,606,826	0.020
Movshare	6,690,969	66,910	43,207	n/a	110,117	1,321,405	0.016
Novamov	6,470,410	64,704	44,702	n/a	109,406	1,312,872	0.017
Played	6,337,032	n/a	87,937	n/a	87,937	1,055,242	0.014
Allmyvideos	6,308,948	31,482	66,747	n/a	98,229	1,178,747	0.016
Videoweed	5,454,007	54,540	53,185	n/a	107,725	1,292,696	0.020
Flashx	4,582,461	45,779	52,298	n/a	98,077	1,176,927	0.021
Divxstage	3,834,317	38,343	21,398	n/a	59,741	716,896	0.016
Gorillavid	3,439,445	30,955	77,104	n/a	108,059	1,296,707	0.031
Billionuploads	2,661,683	n/a	22,443	13,308	35,752	429,023	0.013
Thefile	2,460,445	22,144	15,551	n/a	37,695	452,337	0.015
Daclips	2,050,000	18,450	21,560	n/a	40,010	480,122	0.020
Total	103,812,945		1,962,120		2,760,256	33,123,068	n/a
Average	6,920,863		130,808		184,017	2,208,205	0.0235



Revenue Sources: Streaming Cyberlockers

Revenue per streaming cyberlocker – at \$184,017 per month or \$2.21m per year – is lower than the equivalent for direct download cyberlockers at just over \$350,000 per month or \$4.21m per year. In contrast to DDCs, the majority of revenue for SCs (71.1 percent) is from advertising with premium accounts generating 23.1 percent of revenue. Other revenue – in this case, the ‘download managers’ discussed above – is responsible for 5.9 percent of revenue overall, even though only three SCs deploy such revenue generating services.

Streamcloud, the third most popular streaming cyberlocker in terms of unique monthly visitors, is estimated to gather the most revenue, all of which comes through advertising. The site also has a monthly revenue per unique user of \$0.071, a greater per-user revenue than any other streaming or direct download cyberlocker.

4. COSTS

4.1 CYBERLOCKER COSTS

The costs of operating a cyberlocker stem from a range of sources, some typical to many online businesses. The main cost areas are:

- **Hosting and internet infrastructure**
- **Affiliate or reward schemes** which pay uploaders or webmasters that attract downloads or new premium accounts.
- **Processing fees** for financial transactions such as premium account payments
- **Employee salaries** and payments
- **Overhead costs and other costs**

Each of these costs was calculated for each of the fifteen DDCs and fifteen SCs analyzed for this project. A detailed explanation of the methodologies employed to estimate these costs can be found in **Appendix A**. As far as possible, cost calculations relied on data obtained from the individual services used by each cyberlocker itself (for instance, where possible hosting costs were obtained from the individual internet host for each individual cyberlocker).

Of course, it is important to note that one cost that legitimate online services bear and cyberlockers do not is the cost of supplying the goods distributed: in the case of cyberlockers, professionally produced and copyrighted content. It is this difference that leads to the enormous profit margins, discussed below.

This section of the report discusses each of these costs.

4.1.1 Hosting and internet infrastructure

This covers the hardware and internet connectivity required to maintain a cyberlocker site online: principally, the **servers** required to host the site and store, index, and serve the files uploaded to the site; the **internet bandwidth** needed to accept uploads, display the web site, and allow users to download; and the **internet traffic** that passes to and from the servers to the wider internet. All cyberlockers examined for this study used an external hosting company: that is, they all relied on a hosting company to provide servers and connectivity rather than hosting their own equipment in a data centre. Typically, hosting companies provide servers, bandwidth, and external traffic for a single cost. Sometimes, a company offers a base price with some elements available for additional fees (for instance, they offer 5 terabytes of internet traffic within the basic cost but allow further terabytes of transfer for an additional payment).

The analysis conducted for this section involved determining typical server and bandwidth needs for cyberlockers and conferring with a number of hosting providers to estimate costs. The full methodology used to calculate hosting and infrastructure costs is found in Appendix A.

4.1.2 Affiliate or reward schemes

Six of the fifteen DDCs and seven of the fifteen SCs offered an affiliate or rewards scheme (one of the points which distinguishes cyberlockers from legitimate cloud storage services, as noted in Section 2.1). These usually operate in one of two ways or sometimes as a mix of methods. First, schemes pay an affiliate a flat fee or percentage of each premium account that is bought when a user clicks through to the cyberlocker and signs up for a premium account from that link. For instance, if Alice uploads a file to Mega, sends Bob the link, and Bob clicks the link and then buys a Mega premium account, Alice will receive a percentage of the amount that Bob pays (in Mega's case, this is 20 percent of the premium account payment if Alice has signed up for and been accepted into the program that pays affiliates).

How does it work?

- Sign up and get your own unique partner ID which you can append to our URL.
- We will track all purchases made by the visitors you referred to MEGA.
- You earn **20%** of all revenue generated through your partner ID.
- Recurring subscriptions will count as recurring referrals.

Second, some cyberlockers also offer a pay-per-download model. In this system, a cyberlocker agrees to pay a certain amount to an uploader if their content is downloaded – or in the case of streaming cyberlockers, streamed – a specified number of times. Typically, payments are listed per 1,000 downloads and are often dependent on the location of the downloader and the size of the file downloaded. For instance, the terms promoted by Uploaded.net are shown below.

Affiliate program: terms of download reward

Currently 1000 downloads will be compensated country-specific as follows:

Countries/Regions	3-100 MB	100-1000 MB
GOLD: Germany - United Kingdom - France Spain - Australia - Belgium USA - Canada	10 €	40 €
SILVER: Austria - Japan - Netherlands Denmark - Greece - Italy Polonia - Russia - Sweden - Switzerland	5 €	10 €
BRONZE: Turkey - Brazil - Argentina - Mexico	1 €	5 €

All details are related to 1000 valid downloads

Before the MegaUpload DDC was closed following the international law enforcement operation in January 2012, almost all DDCs and most SCs operated some kind of rewards or affiliate scheme. Following the seizure of MegaUpload, such schemes were significantly scaled back, both in their number and, where they remained, their generosity – yet it is not unusual to still see the most successful uploaders posting screenshots online that show earnings of well over \$1,000 per month and in some cases significantly more.

4.1.3 Processing Fees

All of the cyberlockers that accept subscription payments will pay merchant fees to the payment processing company that handles these transactions. These fees are usually a small percentage of each transaction.

4.1.4 Employee salaries

Businesses must pay their employees. Most of the cyberlockers analyzed in this study do not reveal lists or numbers of employees but it was possible to make estimates of the number of employees and likely salaries from certain publicly available information and data points. The full methodology is explained in Appendix A.

4.1.5 Overhead and legal costs

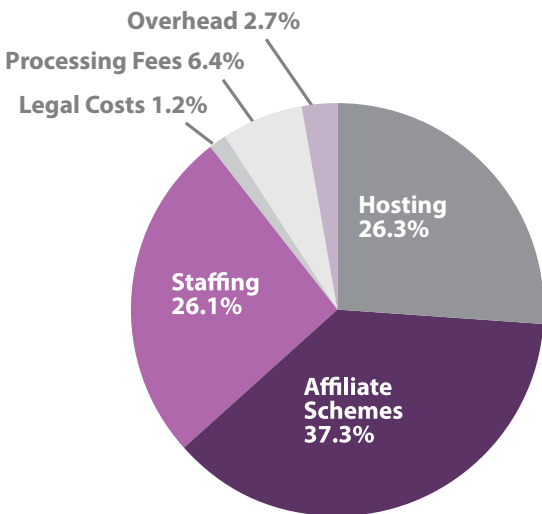
This section included general costs of business and typical overhead. An explicit focus was made on legal costs that in this case also covers the fact that many sites offer a DMCA takedown process that frequently involves registering a Copyright Agent with the US Copyright Office.

4.2 COST BREAKDOWN

4.2.1 Direct download cyberlockers

Total costs for the fifteen direct download cyberlockers are shown below. Sites which did not offer an affiliate or rewards program obviously incurred no costs from such a program; sites which did not offer a subscription-based premium account did not incur processing fees related to that program.

Site	Cost						Total	
	Hosting (\$)	Affiliates (\$)	Staffing (\$)	Processing Fees (\$)	Legal Costs (\$)	Overhead (\$)	Monthly	Annual
4Shared	55,866	n/a	91,200	36,939	5,549	14,672	204,226	2,450,712
Mega	205,247	66,789	77,994	6,234	2,103	4,453	362,820	4,353,837
Uploaded	19,289	240,559	112,800	16,037	2,020	5,539	396,245	4,754,939
Zippyshare	40,078	n/a	26,400	n/a	1,857	1,224	69,560	834,715
Turbobit	37,649	209,833	31,350	9,875	1,854	5,714	296,274	3,555,293
BitShare	14,574	n/a	28,500	11,480	1,721	4,064	60,339	724,063
Letitbit	30,362	96,648	22,800	8,054	1,228	2,446	161,538	1,938,451
FreakShare	11,573	n/a	19,950	7,405	1,110	2,706	42,745	512,943
Rapidgator	32,791	77,630	17,100	7,763	1,012	3,049	139,345	1,672,141
Ryushare	14,145	n/a	7,500	5,384	849	2,654	30,532	366,387
Depositfiles	25,504	26,890	14,250	5,378	849	2,387	75,257	903,089
Uptobox	7,716	n/a	18,340	3,138	596	1,454	31,243	374,920
Filenuke	3,008	n/a	11,400	2,662	535	930	18,535	222,419
1Fichier	6,016	n/a	13,755	2,703	514	1,171	24,158	289,901
2Shared	2,572	n/a	8,550	n/a	396	119	11,636	139,637
Total	506,389	718,349	501,889	123,051	22,193	52,583	1,924,454	23,093,446
Average	33,759	119,725	33,459	8,203	1,480	3,506	128,297	1,539,563



**Cost Sources:
Direct Download Cyberlockers**

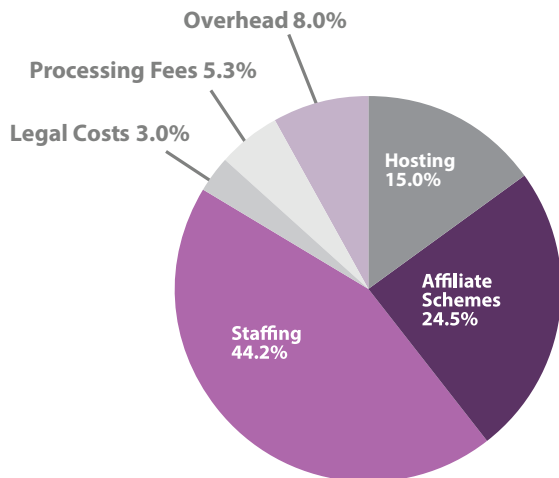
Overall, the cost of running affiliate schemes is the highest component of a direct download cyberlocker's costs. Only six of the fifteen cyberlockers in this section maintained affiliate schemes, leaving hosting and staffing costs the largest cost element for other sites.

Unsurprisingly, most costs vary with cyberlocker size: the more popular the site, the higher the costs - though those sites which offer affiliate systems recorded higher costs than sites of a similar size.

4.2.2 Streaming cyberlockers

Total costs for the fifteen streaming cyberlockers are shown below. As with direct download cyberlockers, sites which did not offer an affiliate or rewards program obviously incurred no costs from such a program; sites which did not offer a subscription-based premium account did not incur processing fees related to that program.

Site	Cost						Total	
	Hosting (\$)	Affiliates (\$)	Staffing (\$)	Processing Fees (\$)	Legal Costs (\$)	Overhead (\$)	Monthly	Annual
Putlocker	8,752	n/a	32499	2,044	2,279	4,156	49,729	596,745
YouWatch	1,706	28,907	21666	4,625	1,396	6,159	64,459	773,512
Streamcloud	3,412	n/a	14444	n/a	992	7,022	25,870	310,439
Sockshare	5,118	n/a	7222	300	685	1,339	14,664	175,970
Movshare	5,118	30,109	7222	2,007	669	1,101	46,227	554,723
Novamov	6,824	n/a	7222	1,941	647	1,094	17,728	212,739
Played	1,706	9,771	10833	n/a	634	879	23,823	285,874
Allmyvideos	1,706	n/a	10833	944	631	982	15,097	181,160
Videoweed	5,118	n/a	7222	1,636	545	1,077	15,599	187,186
Flashx	1,706	5,811	7222	1,373	458	981	17,551	210,616
Divxstage	3,412	n/a	3611	1,150	383	597	9,154	109,850
Gorillavid	1,706	n/a	7222	929	344	1,081	11,281	135,374
Billionuploads	1,706	3,741	7222	n/a	266	358	13,292	159,507
Thefile	1,706	3,456	3611	664	246	377	10,060	120,721
Daclips	1,706	2,396	3611	554	205	400	8,871	106,454
Total	51,402	84,190	151,662	10,381	18,168	27,603	343,406	4,120,869
Average	3,427	12,027	10,111	692	1,514	1,840	22,894	274,725



Staffing costs dominate for streaming cyberlockers overall, though those sites which maintained an affiliate scheme find that the largest costs come from operating these programs, Hosting costs are much less than for direct download cyberlockers: streaming cyberlockers host only one kind of file (video) and two main types of content (film and television episodes) and analysis finds that such hosting requires significantly less storage space.

5. PROFITABILITY

5.1 DIRECT DOWNLOAD CYBERLOCKERS

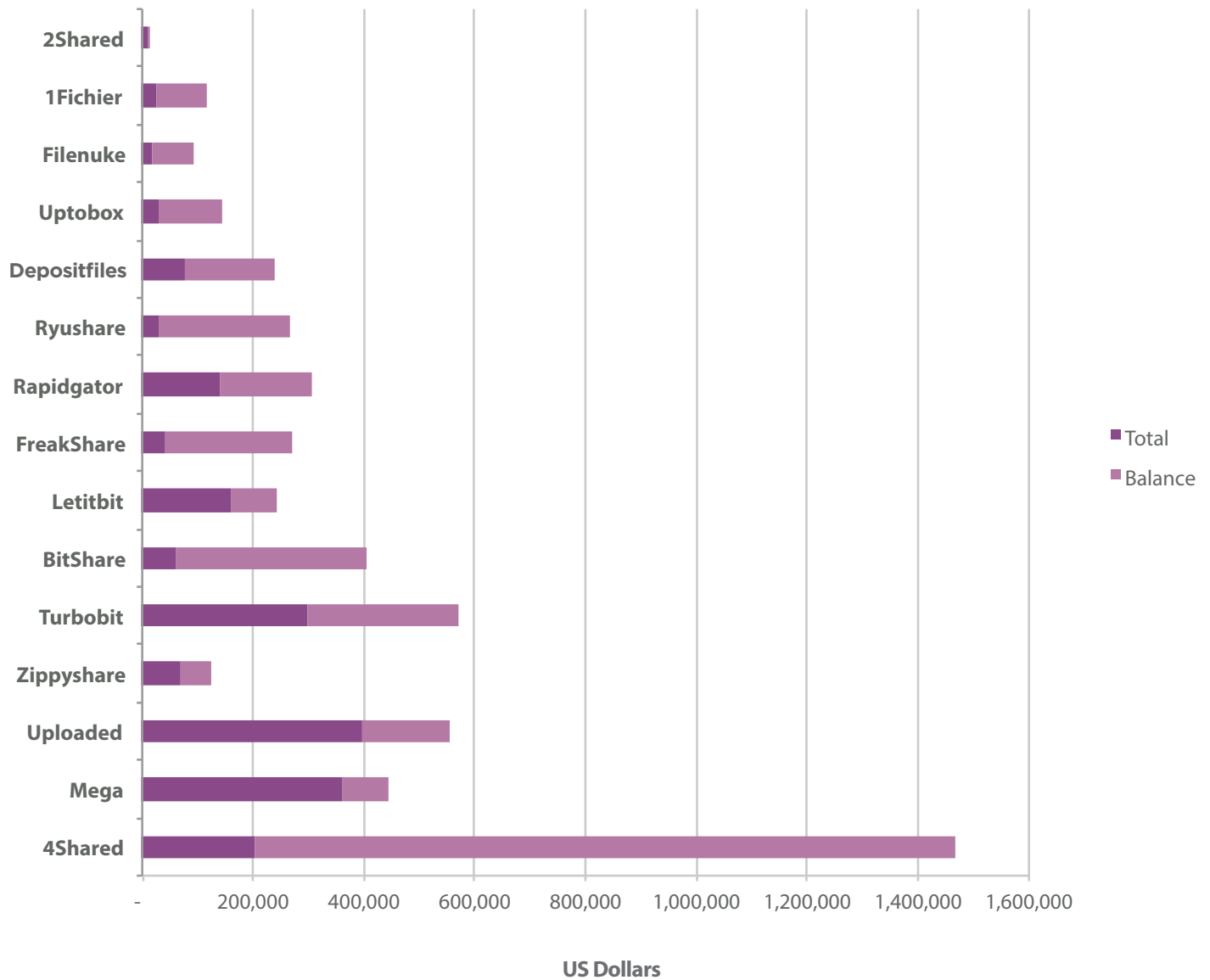
Each one of the fifteen direct download cyberlockers analyzed for this study was profitable. 4Shared, the DDC with the highest unique visitors, made the highest profit, estimated at \$1.26m per month or \$15.16m per year. However, more visitors does not strictly correlate with more profit: BitShare, ranked sixth in terms of monthly unique visitors, shows the second largest profit at \$0.35m per month or \$4.15m per year while Ryushare has the highest profit to revenue ratio at 88.5 percent.

On average, each DDC reports a monthly profit of \$0.22m and an annual profit of \$2.67m, with a profit ratio of 63.4 percent.

Site	Monthly Unique Visitors (comScore)	Revenue		Costs		Profit		Profit Ratio
		Monthly	Annual	Monthly	Annual	Monthly	Annual	
4Shared	55,487,123	1,467,243	17,606,913	204,226	2,450,712	1,263,017	15,156,201	86.1%
Mega	21,034,702	445,259	5,343,114	362,820	4,353,837	82,440	989,277	18.5%
Uploaded	20,203,332	553,911	6,646,936	396,245	4,754,939	157,666	1,891,997	28.5%
Zippyshare	18,573,508	122,442	1,469,302	69,560	834,715	52,882	634,586	43.2%
Turbobit	18,541,078	571,364	6,856,370	296,274	3,555,293	275,090	3,301,077	48.1%
BitShare	17,209,366	406,429	4,877,149	60,339	724,063	346,091	4,153,087	85.2%
Letitbit	12,276,745	244,605	2,935,260	161,538	1,938,451	83,067	996,809	34.0%
FreakShare	11,101,592	270,647	3,247,765	42,745	512,943	227,902	2,734,822	84.2%
Rapidgator	10,118,432	304,940	3,659,278	139,345	1,672,141	165,595	1,987,137	54.3%
Ryushare	8,492,452	265,427	3,185,120	30,532	366,387	234,894	2,818,733	88.5%
Depositfiles	8,488,437	238,683	2,864,193	75,257	903,089	163,425	1,961,104	68.5%
Uptobox	5,961,917	145,386	1,744,627	31,243	374,920	114,142	1,369,707	78.5%
Filenuke	5,346,602	92,995	1,115,935	18,535	222,419	74,460	893,516	80.1%
1Fichier	5,135,550	117,102	1,405,228	24,158	289,901	92,944	1,115,327	79.4%
2Shared	3,959,767	11,856	142,277	11,636	139,637	220	2,641	1.9%
Total	221,930,603	5,258,289	63,099,467	1,924,454	23,093,446	3,333,835	40,006,021	63.4%
Average	14,795,374	350,553	4,206,631	128,297	1,539,563	222,256	2,667,068	63.4%

The chart below shows costs and profit for all fifteen DDCs, ordered by total monthly unique visitors.

Monthly Costs and Profit at Streaming Cyberlockers, March 2014



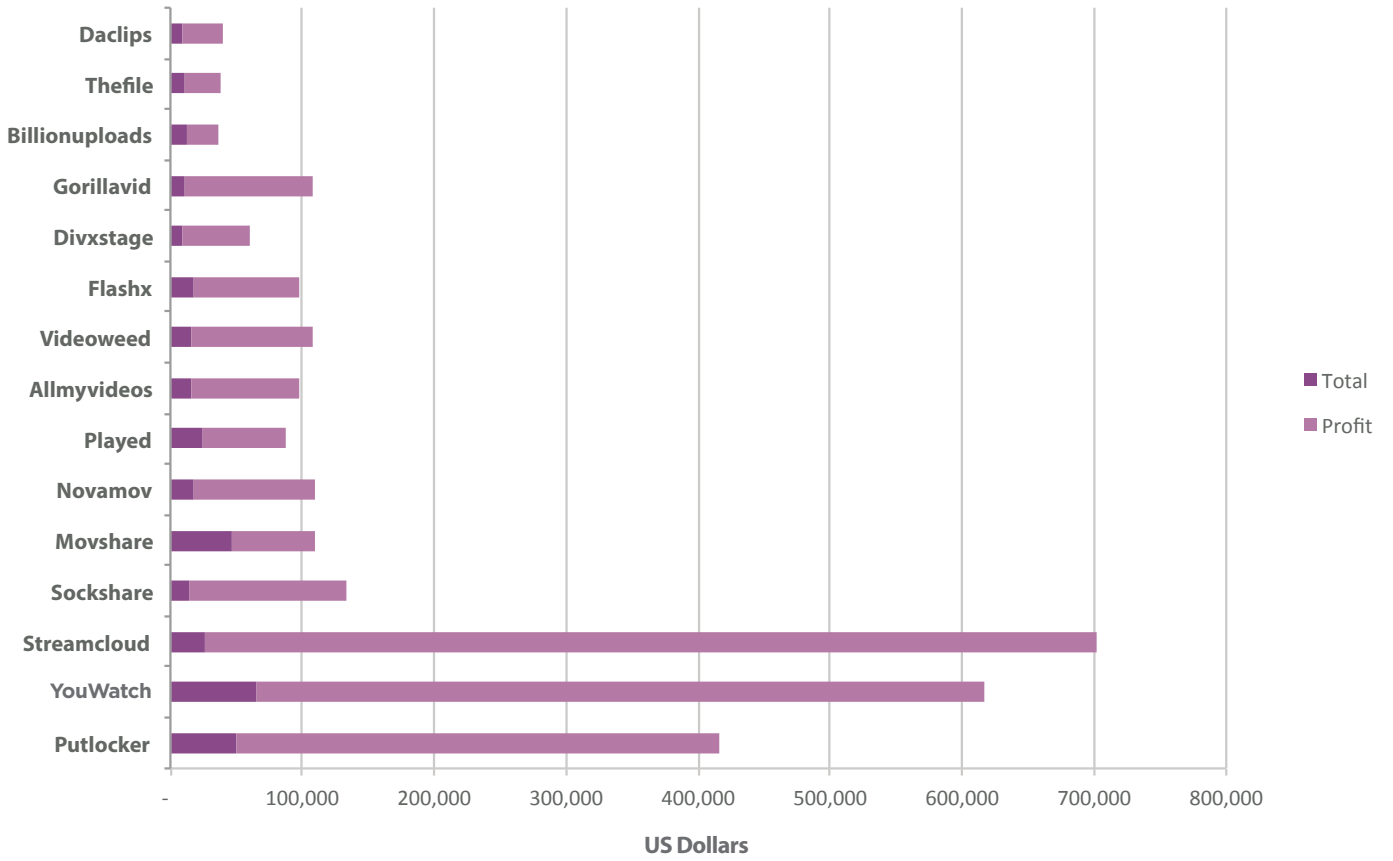
5.2 STREAMING CYBERLOCKERS

All fifteen streaming cyberlockers also show an overall profit: on average, each SC generates a profit of \$0.16m or an annual profit of \$1.93m. Streaming cyberlocker Streamcloud produces the highest level of revenue at \$0.68m per month or \$8.12m per year, a profit ratio of 96.3 percent. The average profit ratio across streaming cyberlockers, at 87.6 percent, is higher than that for direct download cyberlockers.

Site	Monthly Unique Visitors (comScore)	Revenue		Costs		Profit		Profit Ratio
		Monthly	Annual	Monthly	Annual	Monthly	Annual	
Putlocker	22,785,287	415,562	4,986,745	49,729	596,745	365,833	4,389,999	88.0%
YouWatch	13,964,746	615,871	7,390,450	64,459	773,512	551,411	6,616,938	89.5%
Streamcloud	9,921,929	702,173	8,426,074	25,870	310,439	676,303	8,115,635	96.3%
Sockshare	6,851,266	133,902	1,606,826	14,664	175,970	119,238	1,430,856	89.0%
Movshare	6,690,969	110,117	1,321,405	46,227	554,723	63,890	766,682	58.0%
Novamov	6,470,410	109,406	1,312,872	17,728	212,739	91,678	1,100,133	83.8%
Played	6,337,032	87,937	1,055,242	23,823	285,874	64,114	769,368	72.9%
Allmyvideos	6,308,948	98,229	1,178,747	15,097	181,160	83,132	997,587	84.6%
Videoweed	5,454,007	107,725	1,292,696	15,599	187,186	92,126	1,105,510	85.5%
Flashx	4,582,461	98,077	1,176,927	17,551	210,616	80,526	966,311	82.1%
Divxstage	3,834,317	59,741	716,896	9,154	109,850	50,587	607,046	84.7%
Gorillavid	3,439,445	108,059	1,296,707	11,281	135,374	96,778	1,161,333	89.6%
Billionuploads	2,661,683	35,752	429,023	13,292	159,507	22,460	269,516	62.8%
Thefile	2,460,445	37,695	452,337	10,060	120,721	27,635	331,617	73.3%
Daclips	2,050,000	40,010	480,122	8,871	106,454	31,139	373,668	77.8%
Total	103,812,945	2,760,256	33,123,068	343,406	4,120,869	2,416,850	29,002,199	87.6%
Average	6,920,863	184,017	2,208,205	22,894	274,725	161,123	1,933,480	87.6%

The chart below shows costs and profit for all fifteen SCs, ordered by total monthly unique visitors.

Monthly Costs and Profit at Streaming Cyberlockers, March 2014

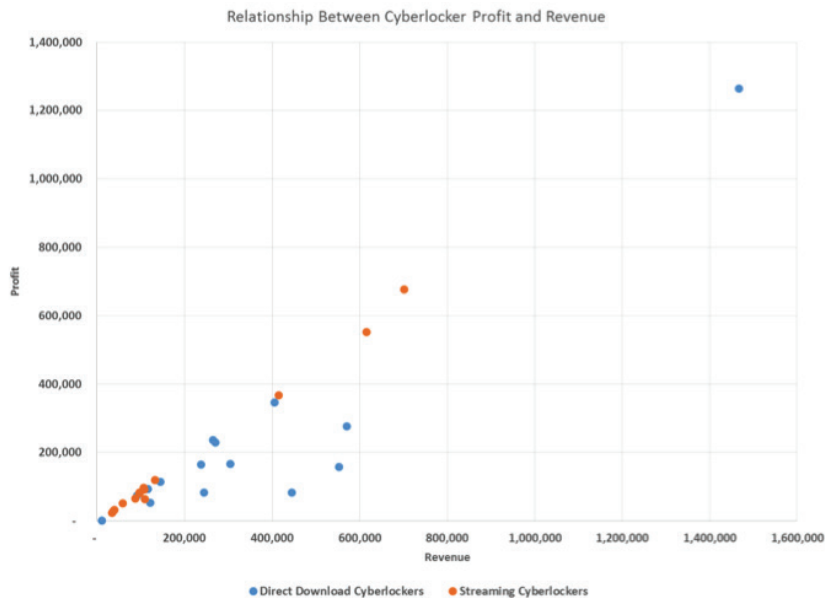


6. ANALYSIS

6.1 PROFITABILITY

Clearly, the cyberlocker ecosystem generates significant revenue and significant levels of profit. Across all thirty sites analyzed in this report, monthly revenue of \$8.02m was calculated, equating to **\$96.22m each year**. Of these figures, 71.7 percent was profit: \$5.75m per month or \$69.01m per year.

The cyberlockers which generated the highest levels of revenue tended to make the highest levels of profit – as this is a technology-based business, costs and revenue tend to scale with size of site. The chart demonstrates the strong positive correlation between revenue and profit, a correlation that is slightly stronger for streaming cyberlockers (in orange) than for direct download cyberlockers (in blue).



Operating a cyberlocker is a business which has the potential to produce considerable returns – and crucially, is also a business that requires only a modest initial investment, especially when owners do not pay for any of the content that their sites distribute. One or two servers, a domain name, some back-end code (which can be bought off-the-shelf), a payment processor and advertising network, and a cyberlocker can be ready for promotion and operation. As needs increase, the main additional requirement is further servers and these can be provided by most hosting companies within hours.

6.2 THE ROLE OF ADVERTISING

Just over half of all cyberlocker revenue is generated from advertising, though this proportion differs for direct download cyberlockers (for which 29.4 percent of revenue comes from advertising) and streaming cyberlockers (for which the percentage is much higher at 71.1 percent). Research also found that only a small number of advertising networks were responsible for the advertisements located on most cyberlocker sites with one network in particular covering more than half of all cyberlocker sites.

The table shows the number of sites on which advertisements from the three most-used advertising networks were located. **Propeller Ads Media**, incorporated in the British Virgin Islands, dominates the cyberlocker advertising world and is responsible for advertising on 17 of 30 cyberlocker sites.

The Digital Citizens Alliance report Good Money Gone Bad similarly found that cyberlockers were able to locate advertising from a range of networks with advertisements ranging from premium brands to non-premium betting and dating sites. Untangling the connections that lie between the sites used to serve advertisements on an internet site and the advertising networks ultimately responsible for those advertisements can be extremely difficult. For instance, Adk2.com – found

Advertising Network	Number of Cyberlockers
Propeller Ads Media	17
Ad Cash	3
Adk2	2

to serve advertisements to two DDCs – is a ‘private exchange’ that enables other advertising networks to better match advertisers and publishers. The network acts as a middleman, providing a back-end platform to other networks but not dealing with individual web site publishers at all. This is a complex area and one that requires effort from the entire advertising industry to properly address.

6.3 LEVELS OF INFRINGEMENT

During the course of this research, a selection of files from each cyberlocker was examined. The intention was to discover what percentage of files hosted on each cyberlocker infringed copyright. The methodology involved crawling the internet looking for links to content held on each cyberlocker and then attempting to determine the infringing status of each file located. The full methodology underlying this analysis and the individual results for each cyberlocker are found in Appendix A.

An overwhelming bulk of files hosted on each cyberlocker-infringed copyright. For direct download cyberlockers, 78.6 percent of files were found to infringe copyright. For streaming cyberlockers, 83.7 percent of files were found to infringe copyright. Further, this analysis did not examine the infringing status of files identified as pornography, which comprised an additional 13.2 percent of content on direct download cyberlockers and 9.4 percent of content on streaming cyberlockers. It is believed that much of this pornography is also likely to be infringing. But if a conservative estimate is made and it is assumed that half of the pornography is infringing, this would mean that 85.2 percent of files on direct download cyberlockers infringed copyright and 87.4 percent of files on streaming cyberlockers infringed copyright.

On the fifteen direct download cyberlockers, the remaining content (that is, the content that was non-infringing and not pornography) was a broad selection of material for which the infringing status could be located and included music, books and other publications, computer programs, short videos, and some files that could not be identified. The remaining content (non-infringing, not pornography) located on streaming cyberlockers was video files and comprised material that appeared to be user generated content and non-infringing as well as music videos and other content for which the infringing status could not be identified.

The figures for the amount of infringing content held on the thirty cyberlockers are in line with previous research conducted by NetNames in this area¹⁹ and with analysis conducted into the Hotfile direct download cyberlocker by Professor Richard Waterman in February 2012.²⁰ Importantly, the Waterman study was based on access to the files actually downloaded from the Hotfile cyberlocker, rather than just those files for which links can be located online. Waterman’s research examined the downloads recorded by the Hotfile cyberlocker for a number of randomly chosen days and found that infringing content was considerably more popular than non-infringing content:

approximately 90.2 percent of all daily downloads of files on Hotfile were downloads of infringing or highly likely infringing content; approximately 5.3 percent of the downloads of files per day on Hotfile were downloads of non-infringing files; and the remaining approximately 4.5 percent of the downloads of files per day on Hotfile were downloads of files whose copyright status could not be reliably determined in the time allowed.

Hotfile operated in an identical fashion to the direct download cyberlockers studied in this research. As such, the percentage of infringing files in reality downloaded or streamed from the cyberlockers analyzed in this study – that is, the amount of content theft that results from the operations of each cyberlocker – is very likely to be even higher than the 78.6 percent of located files identified as infringing.

¹⁹ Sizing the Piracy Universe, NetNames, 2013.

²⁰ A public version of the document entitled ‘Declaration Of Dr. Richard Waterman In Support Of Plaintiffs’ motion For Summary Judgment Against Defendants Hotfile Corp and Anton Titov’ can be found at <http://www.scribd.com/doc/84380009/90-Percent>.

6.4 PAYMENT OPTIONS

Both Visa and MasterCard have clearly stated in the past that sites that profit from infringement should not be able to use the company's financial processing systems.²¹ Yet the research conducted for this report found that despite these statements, both Visa and MasterCard are widely offered through the cyberlocker universe: Visa and MasterCard were offered as payment options on twenty-nine of thirty sites. Further, the logos for both companies were frequently found on the payment section of these sites as the screenshot below from BitShare demonstrates. Only streaming cyberlocker Sockshare did not accept Visa or MasterCard in some form as the site only accepted Bitcoin at the time of analysis.



The ease with which such widely recognized financial instruments as Visa and MasterCard can be used to purchase premium subscriptions at cyberlockers – and to help contribute to the significant revenues generated and the large profits made by these sites – makes it far simpler for a visitor to sign up and pass along their money to the cyberlocker site. Without Visa and MasterCard (and without PayPal), sites must seek out alternative methods of funding, many of which may be unattractive to users who are suspicious about payment systems they may not recognize.

MasterCard's anti-piracy policy states that an 'Acquirer' (the online service that accepts credit card payments on behalf of a site) must cease accepting MasterCard on behalf of a site found to accept MasterCard payment for an infringing product or file and, once terminated, that site should be blacklisted by other MasterCard Acquirers. It is evident that this is not taking place.

Fifteen different payment processors or 'Acquirers' were used across the different cyberlocker sites that accepted payments for premium subscriptions. Only two of these Acquirers were used by more than one site: **FirstData.lv**, a Latvian based payment processor, provided services to four direct download cyberlockers; **Byteseller**, a company incorporated in the British Virgin Isles and which specialises in accepting payments for online services for file hosting sites, handled payments for five streaming cyberlockers. Byteseller features the Visa and MasterCard logos throughout its site.

PayPal

PayPal was offered as payment option on only one site (Mega). This represents a major change in the cyberlocker universe compared to just three years ago. The fact that the vast majority of cyberlocker sites do not attempt to take PayPal through hidden or disguised means demonstrates that the payment method is not even considered as an option for accepting subscription payments.

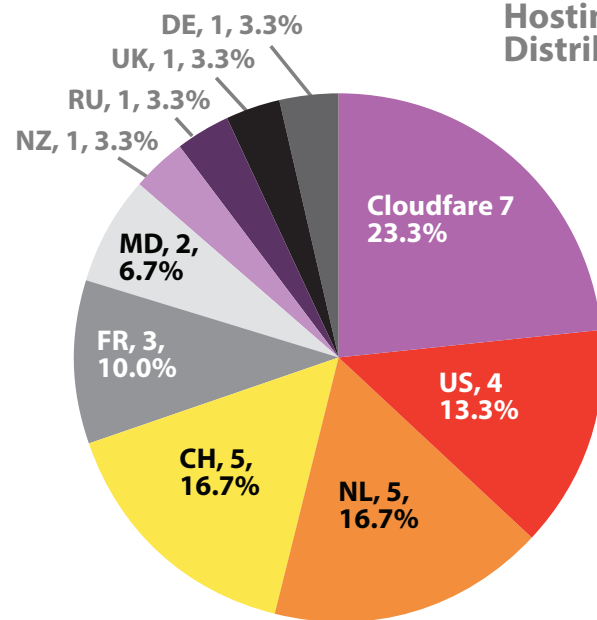
However, PayPal is still used by some sites for affiliate or reward scheme payments. Of the thirteen sites that offered an affiliate scheme, eight (61.5 percent) offered PayPal as a way for affiliates to receive their payments (other online payment systems such as WebMoney and Payza were also used but PayPal was the most popular). Online comment from individuals who take part in affiliate programs demonstrates that the possibility of payment via PayPal makes a program more attractive.

²¹ For instance, see: http://www.mastercard.com/us/wce/PDF/MasterCard_Anti-Piracy_Policy.pdf

Hosting Distribution

6.5 HOSTING

The chart shows the distribution of sites across different country locations. A major point to draw from this chart is the use of the **Cloudflare content delivery network (CDN)** by seven of the cyberlockers (23.3 percent) that obscures the exact location of the sites. Cloudflare uses a distributed network based in 24 data centres located in sixteen countries worldwide. For a web site owner, Cloudflare's service provides a number of advantages, including faster access for visitors and enhanced security against network attacks. Cloudflare's main presence is in the United States (the company is incorporated in the US and eight of its data centres are located in the country) but this does not mean that a site that uses Cloudflare is necessarily hosted in the country.



Beyond Cloudflare, four sites are hosted in the United States with five each in the Netherlands and Switzerland. Four of the five sites hosted in Switzerland have the same owner: these are streaming cyberlockers Novamov, Movshare, Videoweed, and Divxstage. Seven of the thirty sites were hosted by a single company: **Webzilla** has locations in the United States and the Netherlands and has been relied on by cyberlocker sites for many years. The company is headquartered in Florida.

6.6 SUMMARY

This report demonstrates that immense levels of profit are possible for sites that facilitate and encourage infringement by providing centralized hosting for content theft. While costs might be incurred through the need for stable hosting and, in some cases, paying affiliates in order to attract visitors, these pale in comparison to the enormous revenues that can be gathered through the collection of subscription fees through payment processors and advertising dollars. The significant profits that are made – calculated using a deliberately conservative methodology – are mostly done so at the expense of content owners.

The main findings of this report are:

- Direct download cyberlockers and streaming cyberlockers generate millions of dollars in profit.
- The overwhelming proportion of the files located on each site-infringed copyright.
- All but one cyberlocker profited from advertising. A small number of advertising networks handled the majority of display advertising on cyberlocker sites.
- All but one of the cyberlockers that offered premium accounts to users offered the ability to pay using Visa or MasterCard.
- PayPal was only offered as a payment option on a single cyberlocker site.
- Affiliate schemes remain important to many cyberlockers, encouraging users to upload popular content.
- Eleven out of thirty cyberlockers are hosted in the United States or use a US-based company to help facilitate internet access (Cloudflare).

Using careful and detailed research, this report uncovered the scale of the revenue and profits produced by cyberlockers. This multi-million dollar piracy-driven ecosystem is also aided and enhanced by intermediaries that enable the efficient operation of cyberlockers by delivering access to advertising, facilitating the acceptance of online payments, and providing the tools and means to serve infringing content to users. Corrective action by any of these intermediaries could make a direct impact on the ability of cyberlocker owners to gather revenue, generate profit and, ultimately, prevent the propagation and spread of infringing material across the internet.

7. APPENDIX A: METHODOLOGY

This Appendix contains the methodologies used to calculate the specific revenues and costs shown in the main body of the report.

7.1 REVENUE

7.1.1 Premium Subscriptions

Most of the direct download and streaming cyberlockers analyzed in this study sold premium accounts to users. Revenue from this area was estimated using the following formula:

$$\left(\left(\text{Total unique monthly visitors} * 0.035576 \right) + \left(\text{Cost of one month premium} * \text{total unique monthly visitors} \right) * 0.35612 \text{ percent} \right) / 2 / 2 = \text{Monthly premium revenue}$$

The formula takes the average between two different methods of estimating premium revenue which both use data from analysis of the MegaUpload direct download cyberlocker. Documents prepared for the indictment against this site show that MegaUpload generated \$110m in premium subscription revenue in the fifty-five months period between January 2007 and July 2011. During this period, a single month premium subscription to MegaUpload cost \$9.99. This means that over the period between January 2007 and July 2011, the equivalent of 11,011,011 monthly premium subscriptions were bought from MegaUpload.

Calculations were then made to produce (i) subscription revenue per unique monthly visitors of MegaUpload; and (ii) the percentage of unique monthly visitors who bought a premium subscription. In each case, the total revenue generated by premium subscriptions was spread proportionally between each of the fifty-five months in the period concerned so that months with higher unique monthly visitors were allocated a higher proportion of the total revenue. Subscription revenue per unique monthly visitors was estimated by dividing the total revenue generated between each month by the total number of unique monthly visitors. Percentage of unique monthly visitors was estimated by dividing the total number of premium subscriptions purchased by the total number of unique monthly visitors.

These calculations produced two figures:

- (i) Subscription revenue per unique monthly visitor of MegaUpload: \$0.035576
- (ii) Percentage of unique monthly visitors of MegaUpload who purchased a premium subscription: 0.35612 percent

These two figures were each used to provide an initial separate estimate of revenue for each cyberlocker analyzed during this research as follows:

- (i) Total unique monthly visitors * \$0.035576
- (ii) (Cost of one month premium * total visitors) * 0.35612 percent

As it is unclear which method might be more accurate in calculating revenue – and a case can be made for each – revenue is therefore calculated using both methods with the average between the two then taken.

However, it can be argued that using these methods does not provide an estimate of cyberlocker revenue from premium accounts in early 2014 so much as cyberlocker revenue from premium accounts during the lifetime of MegaUpload. The cyberlocker ecosystem was significantly degraded by the closure of MegaUpload and MegaVideo in January 2012: apart from the immediate impact amongst other popular cyberlockers (for instance, a number of direct download cyberlockers and streaming cyberlockers closed within a few months of the action against MegaUpload and others began to remove

large amounts of infringing content), it also had a major impact upon cyberlocker users. Many found that premium subscriptions were now much less attractive. To account for this change, the estimate used to calculate revenue from subscription payments takes the values of each of (i) and (ii) above and divides them by two.

This division may over-estimate the effect of the closure of MegaUpload: indeed, there has been little further disruption to the cyberlocker ecosystem beyond the immediate effects of the MegaUpload closure noted in the previous paragraph. Such on going stability makes the purchase of premium subscriptions more attractive to cyberlocker users. As such, the estimate for premium subscription revenue should likely be viewed as a conservative minimum amount.

7.1.2 Advertising

Estimating advertising revenue can be complicated given the number of actors in the equation. The calculations used to make the estimates provided in this research attempt to simplify the revenue estimation process without losing any of the important factors. At core, the calculation for advertising revenue is:

$$\text{((Number of page views featuring adverts / 1000) * CPM rate) * Number of adverts per page} * \text{FM} = \text{Monthly Advertising revenue}$$

'CPM' stands for 'cost-per-mille' (cost per thousand) and is the standard method by which online advertising is costed. Advertisers are quoted a CPM rate to pay for placing advertisements, which varies depending on the site, and audience that is targeted.

For each site in this research, the advertising network supplying advertisements was noted where this was possible to determine. Contact was then initiated with this network requesting data on typical CPM rates for file hosting sites such as cyberlockers. For a number of networks, this request provided information on CPM rates. In some instances, this data varied according to region of the world or country while others provided a single overall figure for all advertisements.

In some instances, CPM rates could be found for a specific cyberlocker and where this was the case, this data superseded the general information from the advertising network. For instance, rates to advertise on 4Shared can be found on the web site for the EPOM advertising network²² and DepositFiles provided its own rate card for advertisements.

Where specific CPM rates for a cyberlocker could not be located, a CPM rate of \$0.50 per advertisement was assumed. This was the minimum CPM rate offered by Propeller Ads Media, the advertising network used most often by cyberlockers within this research (and also the lowest CPM rate assumed by the Digital Citizens 'Good Money Gone Bad' report which focused on calculating advertising revenue amongst piracy-focused sites).

Total page views for each site were taken from comScore for March 2014. However, most DDCs and SCs only feature advertising on some of the pages of their site. In general, the homepage of each site does not show any advertisements. Data from comScore was available for some sites that indicated that around 5 percent of page views of DDCs and around 10 percent of pages views of SCs were of the homepage for each type of site. As such, page views for each site were reduced accordingly to produce a figure for the number of page views that featured advertisements. Analysis then examined each site and noted the number of advertisements that appeared per page, enabling the revenue from each batch of 1,000 advertisements to be calculated.

FM stands for 'fraud multiplier'. The detailed report 'Good Money Gone Bad'²³ used a fraud multiplier within calculations of online advertising revenue and describes the fraud multiplier as follows:

Impression fraud is a significant challenge to the advertising ecosystem and is likely to be even more significant in the content theft ecosystem. Fraud includes such benign practices

²² See: <https://directads.epom.com/publisher/4shared.do>

²³ See: <http://www.digitalcitizensalliance.org/cac/alliance/content.aspx?page=FollowTheProfit>

as pop-unders, where ads are launched behind a user's primary browser window, as well as activities such as stacking ads in nested iframes and embedding ad calls in single-pixel images that viewers can never see. The research did not include analysis of log files or data streams, and assumptions for the financial model rely on a combination of third-party sources and direct observation of sites' business models.

That report used a level of fraud of 10 percent of advertising revenue for direct download cyberlockers and the same figure is adopted here. As such, the advertising revenue calculated by reference to page views and CPM rate is then reduced by 10 percent to produce a final overall revenue figure from advertising revenue for each site.

7.1.3 Other revenue

A small number of streaming cyberlockers offered additional products from which revenue was generated (see Section 3.5). These products were promoted on each site as a feature-rich download but installed bundled third-party software. Previous unpublished analysis by NetNames found that sites are typically paid a commission on each install of such products. Estimates of payments ranged from \$5.00 to \$10.00 per install. The lower figure is taken as an estimate for this research. 0.1 percent of unique monthly visitors to each site were assumed to download and install each product. This may be an under-estimate as some sites promote these products in ways that will encourage users to download and install.

The calculation for revenue from these products is therefore:

(Total unique visitors * 0.1 percent) * \$5 = Monthly revenue from additional services.

7.2 COSTS

7.2.1 Hosting

Hosting costs were calculated by direct reference to a number of hosting companies used by cyberlockers. Servers were costed in collaboration with hosting companies given the needs of a typical cyberlocker (for instance, significant amounts of hard drive space for file storage and at least a 1Gbps uplink port with unlimited bandwidth) and using information provided by some cyberlockers as to their infrastructure needs²⁴. The average cost for a single typical server was determined to be \$853 per month. This cost was then discounted using typical industry discount practices if multiple servers were required: a 10 percent discount for 10 or more servers; a 15 percent discount for 20 or more servers. Servers were assumed to be paid in advance for six months, generating a further 5 percent discount on the base price.

Determining the specific number of servers used by a single site required estimating the number and size of files hosted by each site (though some sites, such as 4Shared, stated that they hosted a specific amount of content – for 4Shared, this was 1,100 terabytes of data). This variable was estimated using two methods: first, the average size of files held by a cyberlocker was calculated (for this, the size of the first 500 files found on link sites or on the site itself by general internet searches was recorded and averaged). Second, the number of files held on each site was estimated by various methods. For some sites, such as 4Shared and Mega, publicly available information on the number or size of files hosted was used (for example, Mega stated in March 2014 that the site held 500,000,000 files). For other sites, an estimate of the number and size of all files hosted on each site was made. This involved performing searches on Google to estimate the number of files hosted by the site and combining this figure with the number of files 'delisted' from the Google search engine following rightsholder request²⁵. Multiplying the size of the average file with the number of files hosted provided an estimate for the amount of hard disk space required by each site.

²⁴ For instance, the Zippyshare cyberlocker often discusses the size and scope of its technical infrastructure (see <http://blog.zippyshare.com/?p=562>).

²⁵ <http://www.google.com/transparencyreport/removals/copyright/>

It was assumed that the files hosted by a cyberlocker would be mirrored for redundancy. A method of data mirroring with low efficiency (RAID 0+1) was assumed which means that X terabytes of content would require X*2 terabytes of hard drive space for storage. It is possible that some cyberlockers did not mirror data or that sites chose a more efficient method of mirroring such as RAID 5E or RAID 6 so this calculation should be seen to significantly over-estimate likely server and hosting costs.

7.2.2 Affiliate costs

The cyberlockers which operate an affiliate or rewards scheme incur payments to those users who take part. The majority of the cyberlocker sites that operated an affiliate scheme offered a commission to affiliates: for each new user who paid for a premium subscription, the cyberlocker would pay the referrer a percentage of the revenue generated. This is known to be the preferred method for most of those who seek to make money using affiliate schemes (rather than the pay-per-download basis also mentioned in Section 4.1.2). Some sites also offered a pay-per-download scheme: for every 1,000 downloads or streams of an uploader's files, the site pays the uploader or affiliate a certain amount. Where there was a choice of affiliate schemes, this report assumed that the commission / pay-per-sale scheme was chosen.

It was assumed that 75 percent of all premium subscriptions for cyberlockers generated affiliate revenue – that is to say, three out of every four visitors that sign up for a premium subscription do so from a link to the cyberlocker placed by a user involved in the affiliate scheme. Given this assumption, the specific percentage paid to affiliates on each site was applied to 75 percent of the revenue generated by premium subscriptions (see Section 7.1.1 above). For instance, this was 20 percent for Mega and 50 percent for Rapidgator. This was then taken as the total cost incurred to each cyberlocker for operating the affiliate scheme.

$$\text{(Total revenue from premium subscriptions * 75 percent) * Commission rate paid to affiliates} = \text{Total cost of affiliate scheme}$$

Where only the pay-per-download scheme was available, an assumption was made that one in ten (non-homepage) page views resulted in a download credited to an affiliate. This estimate was only employed for five cyberlockers out of the thirty, all of which were streaming cyberlockers.

7.2.3 Processing fees

As with hosting costs, the estimate of processing fees for accepting online payments used information from the specific payment processing companies involved with each site. Only one site (Mega) accepted PayPal while others used a variety of different providers. The standard fees and costs were obtained from each provider (typically between 3 percent and 4 percent of payments). For instance, Russian payment processor Interkassa charges 3 percent on transactions. Where costs could not be obtained for a specific payment processor, an average was used.

$$\text{Subscription revenue * payment processor fee} = \text{Processing fees}$$

7.2.4 Employee salaries and payments

The costs of staff were difficult to calculate, primarily because it is difficult in many cases to know how many people work for each cyberlocker. Most cyberlocker businesses operate in the shadows of the internet economy, often through corporations registered in jurisdictions such as Cyprus and Belize where detailed corporate record keeping and annual reports are rarely required. However, an estimate of staffing was possible for the 4Shared direct download cyberlocker. For this site, thirty-two current employees were found on LinkedIn and through other channels. This works out as one employee for every 1.73m unique monthly visitors (4Shared had 55.5m unique monthly visitors in March 2014). It was assumed that this ratio could be applied across all direct download cyberlocker sites except where the number of employees could be ascertained by other means (only possible for one other DDC: Mega listed eighteen staff members). The figure obtained through this calculation was then rounded up to the nearest whole number (for example, the calculation estimated that BitShare, with 17.2m unique monthly visitors, would have a staffing level of 9.92 employees; this was rounded up to 10).

For streaming cyberlockers, it was assumed that the slightly simpler technical operations of such sites (the fact that they only hosted one type of file – video) led to a slightly lower ratio of staff to visitors. Given this, a ratio of one staff member to every 2.50m unique monthly visitors was used (again, rounded up to the nearest whole number). However, some streaming cyberlockers sites are known to be connected or have the same owner. For these sites, it was assumed that economies of scale would reduce the number of staff needed per site. For instance, the streaming cyberlockers PutLocker and Sockshare are known to have the same owner; and the sites Novamov, MovShare, Videoweed, and Divxstage are also believed to have the same owner. In these cases, the staffing figure was reduced by one for each site.

Once the number of staff had been estimated, an estimate was made for the salary of the average software developer in the location where the cyberlocker was believed to be based. (This follows a similar logic as found in the ‘Good Money Gone Bad’ report.) For this report, this salary was estimated using typical software developer salaries listed on the web site Glassdoor for the country in which the staff for the cyberlocker was believed to be based.

For direct download cyberlockers:

$$[(\text{Monthly unique visitors} / 1.73\text{m})] * (\text{software developer salary in country of cyberlocker}) = \text{staff cost}$$

For streaming cyberlockers:

$$[(\text{Monthly unique visitors} / 2.50\text{m})] * (\text{software developer salary in country of cyberlocker}) = \text{staff cost}$$

7.2.5 Overhead and other costs

Borrowing again the methodology from the ‘Good Money Gone Bad’ report, overhead costs were estimated at 1 percent of total revenue. Legal costs were estimated at \$1 per month per 10,000 visitors; this means an estimated legal bill for a site such as 4Shared of around \$5,500 per month. This would not cover the cost of fighting a lawsuit from a rightsholder but would cover costs such as dealing with routine inquiries.

7.3 ANALYSIS OF CONTENT

During April and May 2014, NetNames’ Discovery Engine technology – an automated internet search, retrieval, and categorisation system – was used to crawl the internet looking for links to files held on the thirty cyberlockers analyzed in this research. Crawling began at major search engines such as Google and used all two letter or longer words from the Dale/Chall simple word list as initial ‘seeds’²⁶. Each of these words were sent to search engines in combination with the names of the direct download cyberlockers included in the research. For instance, some sample search terms were ‘afternoon 4shared’, ‘aunt depositfiles’, and ‘ache sockshare’. This helped ensure that the searches performed were agnostic and unbiased towards any particular type of content.

Each page returned to the Discovery Engine was automatically examined for any links that may be available for any of the thirty cyberlockers. Each link was then automatically followed to the cyberlocker and the filenames of the content located on the cyberlocker was recorded. Files were not downloaded or further analyzed. For each cyberlocker, a random sample of 500 files in total was classified on the basis of the filename. Each of the 500 files was then analyzed for likely copyrighted status (except for those files which could not be identified and files that were identified as pornography).

²⁶ See: <http://rfptemplates.technologyevaluation.com/dale-chall-list-of-3000-simple-words.html>. The list was used in an attempt to provide a neutral starting point for search.

The table below shows the overall results for each cyberlocker. The number of files examined (500 for each site) is shown together with the number which were available commercially and believed to be infringing. As files identified as pornography were not checked for infringement, the true level of copyright infringement within the sites identified is almost certainly higher as previous research has found that much of the pornography located on sites such as cyberlockers is copyrighted and infringing.

Direct Download Cyberlockers

Site	Number of Files	Commercially Available	Percentage Commercially Available
4Shared	500	389	77.8%
Mega	500	407	81.4%
Uploaded	500	424	84.8%
Zippyshare	500	362	72.4%
Turbobit	500	437	87.4%
BitShare	500	428	85.6%
Letitbit	500	382	76.4%
FreakShare	500	359	71.8%
Rapidgator	500	417	83.4%
Ryushare	500	367	73.4%
Depositfiles	500	404	80.8%
Uptobox	500	416	83.2%
Filenuke	500	369	73.8%
1Fichier	500	391	78.2%
2Shared	500	346	69.2%
Total	7,500	5,898	78.6%

Streaming Cyberlockers

Site	Number of Files	Commerciably Available	Percentage Commerciably Available
Putlocker	500	389	77.8%
YouWatch	500	407	81.4%
Streamcloud	500	424	84.8%
Sockshare	500	362	72.4%
Movshare	500	437	87.4%
Novamov	500	428	85.6%
Played	500	382	76.4%
Allmyvideos	500	359	71.8%
Videoweed	500	417	83.4%
Flashx	500	367	73.4%
Divxstage	500	404	80.8%
Gorillavid	500	416	83.2%
Billionuploads	500	369	73.8%
Thefile	500	391	78.2%
Daclips	500	346	69.2%
Total	7,500	6,276	83.7%



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