

Paying for Piracy? An Analysis of One-Click Hosters' Controversial Reward Schemes

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Abstract. One-Click Hosters (OCHs) such as Rapidshare and now defunct Megaupload are popular services where users can upload and store large files. Uploaders can then share the files with friends or make them publicly available by publishing the download links in separate directories, so-called direct download or streaming sites. While OCHs have legitimate use cases, they are also frequently used to distribute pirated content. Many OCHs operate affiliate programmes to financially reward the uploaders of popular files. These affiliate programmes are controversial for allegedly financing piracy, and they were prominently cited in the criminal indictment that led to the shutdown of Megaupload, once among the world's 100 largest web sites. In this paper, we provide insights into how much money uploaders of pirated content could earn on a range of direct download and streaming sites. While the potential earnings of a few uploaders are non-negligible, for most uploaders these amounts are so low that they cannot rationally explain profit-oriented behaviour.

Keywords: One-Click Hosting, Piracy, Uploader Income, Affiliate Programmes.

1 Introduction

Piracy is the most common illicit activity on the Internet. Every day, millions of people use P2P networks or One-Click Hosters (OCHs) such as Hotfile, Rapidshare and formerly Megaupload to share copyrighted content without permission. File sharing based on OCH works in a division of labour: OCHs provide the storage but no search functionality, and external direct download or streaming sites host searchable repositories of download links pointing to the OCHs.

OCHs are large businesses financed through advertisement and subscription fees; several of them are among the 100 largest web sites worldwide. Because OCHs have various legitimate use cases, they claim immunity against their users' copyright infringements under the U.S. Digital Millennium Copyright Act.

However, many OCHs also operate controversial affiliate programmes in order to attract new paying members. These affiliate programmes financially reward uploaders based on the number of downloads and member subscriptions that they generate. For instance, Megaupload used to reward one million downloads with \$1,500 and WUupload used to pay up to \$40 per one thousand downloads. These affiliate programmes are controversial for allegedly encouraging users to

upload copyrighted content and thereby funding piracy. For instance, Megaupload's former affiliate programme and their knowledge that affiliates uploaded pirated content were a central element of the criminal indictment¹ that lead to the seizure of Megaupload's assets, the detention of its operators, and the shutdown of the site on 19 January 2012.

In this paper, we investigate how much money uploaders can earn by illegally uploading pirated content and posting download links on a range of direct download and streaming sites. The order of magnitude of an uploader's income tells us whether the affiliate programme and the associated rewards should be considered as a major factor in the uploader's motivation, or if they could be seen as just a minor concomitant effect.

Measuring uploader income is a challenging task: Almost no OCH reports how often a file was downloaded, and most direct download and streaming sites do not display how often a download link was clicked. Furthermore, even if these data are known, nothing reveals whether an uploader actually participates in an OCH's affiliate programme.

We tackle this problem in the following way: We crawl three large direct download/streaming sites that make click data available. Using the click data, we compute an uploader's maximum income for the links posted on the site under the assumption that every click generated a valid download, and that the uploader participated in the affiliate programme. In order to estimate how many clicks correspond to an actual download, we correlate the click data with the number of downloads on the few OCHs that make download data available.

Our results show that most uploaders earn next to nothing; they do not exhibit apparent profit-oriented behaviour. However, we also observe that a handful of uploaders upload large numbers of files each day and generate so much traffic that they could earn up to a few hundred dollars per day. For these uploaders, at least some degree of profit-oriented behaviour is probable.

Our findings have implications on proposed anti-piracy measures such as the U.S. draft bill SOPA and similar projects in other countries that aim at interrupting the revenue stream of piracy: Such measures, by definition, can affect only profit-oriented actors. Given that we observe a large number of altruistic uploaders, these measures run the risk of having only little effect overall.

In this paper, we make the following contributions:

- We are the first to use large-scale empirical data to estimate the distribution of uploader income through affiliate programmes. We contrast the income with indicators for the effort invested by uploaders. This tells us about the motivations of uploaders with respect to profit seeking or altruism.
- We are the first to provide insights into how the shutdown of Megaupload and the associated cancellations of other OCHs' affiliate programmes affected illegal uploader income. This gives us ground truth to judge the success of anti-piracy measures that aim to curb piracy by removing financial incentives.

¹ Superseding indictment, U.S. v. Kim Dotcom et al., 1:12-cr-00003-LO (E.D. Va., Feb. 16, 2012) at ¶ 58; ¶ 73 g–j, v, y, bb, jj, pp, qq, uu, ppp, qqq, www, xxx; and ¶ 102.