

Research study identifies who uploads the majority of the content to the P2P piracy networks

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This is a screenshot of the torrents searcher, The Pirate Bay. Credit: The Pirate Bay

A study done at Carlos III University of Madrid (Spain) identifies and characterizes the users who upload contents on the main P2P piracy networks on Internet and points out the incentives that they find to carrying out this activity.

The research study examines the behavior of the users who are responsible for publishing over 55,000 files on the two main portals (Mininova and The Pirate Bay) of BitTorrent, the most popular P2P application for file-sharing on Internet, where some users publish

contents that are then exchanged with up to tens of thousands of [internet users](#). Their growing popularity is mostly due to the availability of contents that are of great interest, such a recently released films in the cinemas, or episodes of a variety of television series.

Users who publish contents on BitTorrent dedicate a large part of their own resources (bandwidth, [storage capacity](#)) and assume the risks involved in publishing contents that are protected by copyright laws. So, is this [altruistic behavior](#) or is there some type of economic incentive at work? "The success of BitTorrent is due to the fact that a few users make a large number of contents available in exchange for receiving [economic benefits](#)", explain the authors of a study carried out by the Telematic Engineering Department of the UC3M, Professors Rubén Cuevas, Carmen Guerrero and Ángel Cuevas. Their analysis demonstrates that a small group of users of these applications (around one hundred) is responsible for 66 percent of the content that is published and 75 percent of the downloads. In other words: the great success of a massively used application like BitTorrent depends on a few users.

The study by the researchers at this public university in Madrid, in collaboration with scientists at the IMDEA Networks Institute, the University of Oregon (USA) and the Technical University of Darmstadt (Germany), identifies who these users are and what their incentives for massively publishing contents are. Basically, there are two different profiles. In one group there are the so-called "fake publishers", organizations fighting illegal downloading and malicious users who publish a large quantity of false files in order to protect copyrights and spread infected software, respectively. The other group includes a small number of users (known as "top publishers") who massively publish contents on BitTorrent and make a profit off of this activity, basically from on-line advertising and, to a lesser degree, from VIP subscriptions held by users who wish to speed up the downloading of the contents. "If

these users lose interest in this activity or are eliminated from the system, BitTorrent's traffic will be drastically reduced", the authors of the study predict.

To carry out this research, these scientists have developed a tool that facilitates the gathering of relevant information related to thousands of files that are shared through the BitTorrent application. By means of this system, they were able to access the name of the user who published the content, his/her IP address (which provides the user's city, country and service provider's name – ISP- as well) and the IP address of those users who later used the BitTorrent application to download the contents.. "In order to remain anonymous, - explains Professor Rubén Cuevas - many of them rent servers from companies that perform this service and then publish contents from those servers".

The future of P2P networks

If an application such as BitTorrent's great success depends on a few users who publish a lot of contents, what will happen if those users lose interest in this activity or are eliminated from the system (through legal actions against piracy, for example)? If other users moved in on its space, would the application survive or not? The article ends with this question, which asks us to reflect on the future and the fragility of this type of file exchange network. "In our opinion – the authors of the study comment – the success of BitTorrent lies in the availability of popular contents which are typically protected by copyright law, and people who take the risk of publishing those contents, do it because they receive an economic benefit in exchange for doing so". Therefore, if, in the future, these users lost their incentive, either because of a decrease in advertising income or due to having to pay very expensive fines, BitTorrent would very likely cease to offer these contents, which would make people stop using the application on a massive scale. "At the present time, when the creators of contents, internet user associations

and political parties are arguing about Internet [piracy](#) with regard to the controversial Sinde Law (note: Ángeles González Sinde is the Spanish Minister of Culture), studies like this one are important to real understanding of the true nature of P2P content distribution networks and the economic model that is behind them", the researchers conclude.

The study, titled "Is Content Publishing in BitTorrent Altruistic or Profit Driven?", was recently presented at the ACM International Conference on emerging Networking Experiments and Technologies - CoNEXT, one of the most prestigious congresses in the area of communication networks, which held its sixth edition at the end of 2010 at Drexel University (Philadelphia, USA). The authors are Rubén Cuevas, Carmen Guerrero and Ángel Cuevas, of UC3M, Michal Kryzcka, of the IMDEA Networks Institute, Sebastian Kaune, from the Technical University of de Darmstadt (Germany) and Reza Rejaie, from the University of Oregon (EEUU).

Provided by Carlos III University of Madrid

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