

Estimating Infringing Use of the Internet

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Envisional

Introduction

Envisional was requested to analyse bandwidth usage across the Internet

Report arose out of discussions about the changing use of the Internet

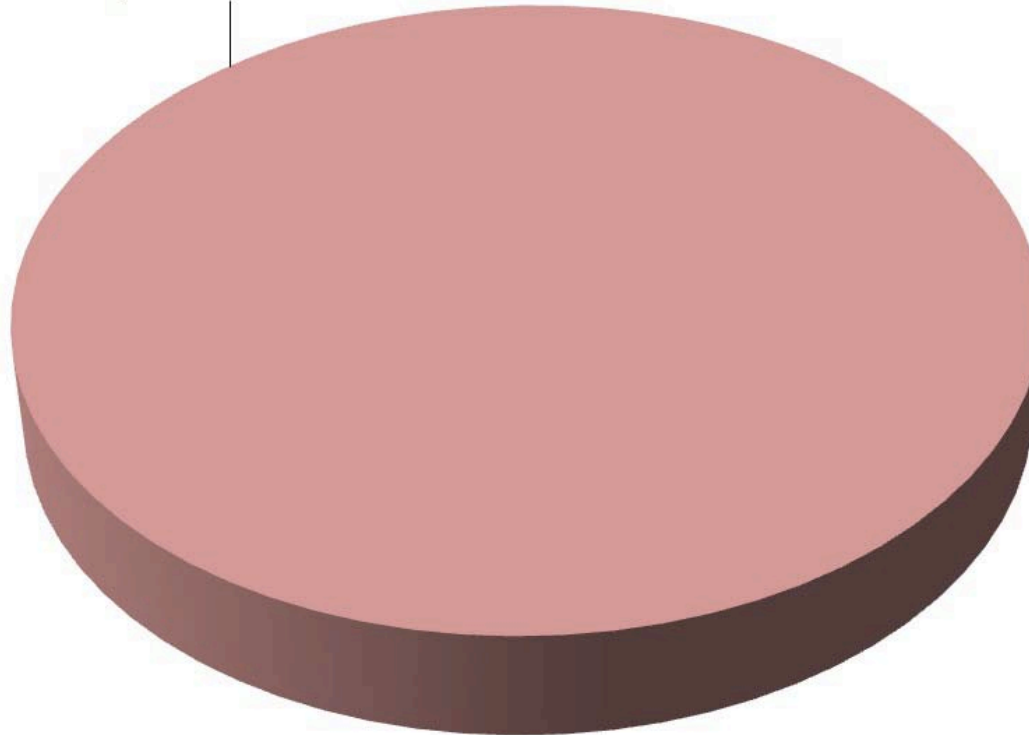
Commissioned by NBCUniversal

Overall aims:

1. Estimate overall bandwidth usage by different common internet areas
2. Estimate levels of infringement within those arenas
3. Determine level of bandwidth used to transfer infringing content

Estimate of global internet bandwidth use

The Internet, 100.00%



What's in the Internet pie?

Four monitoring studies:

Sandvine

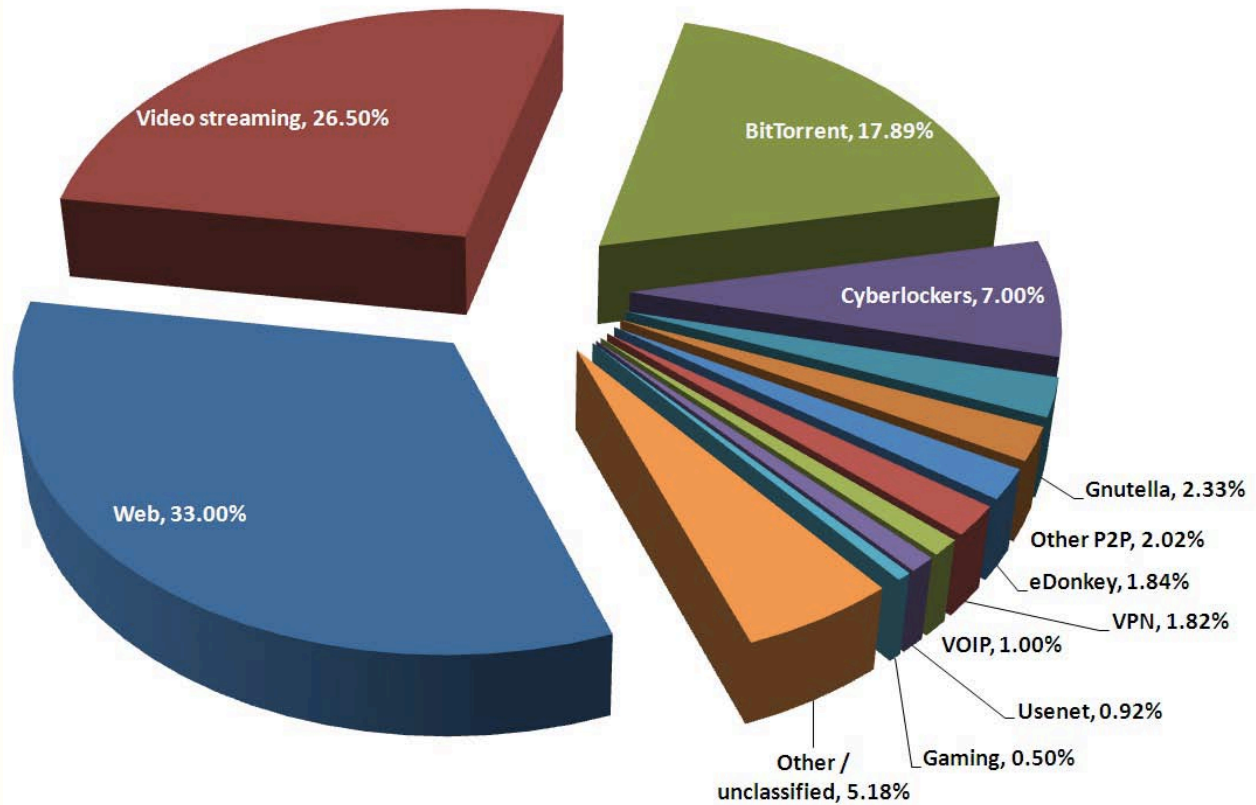
Cisco

Arbor Networks

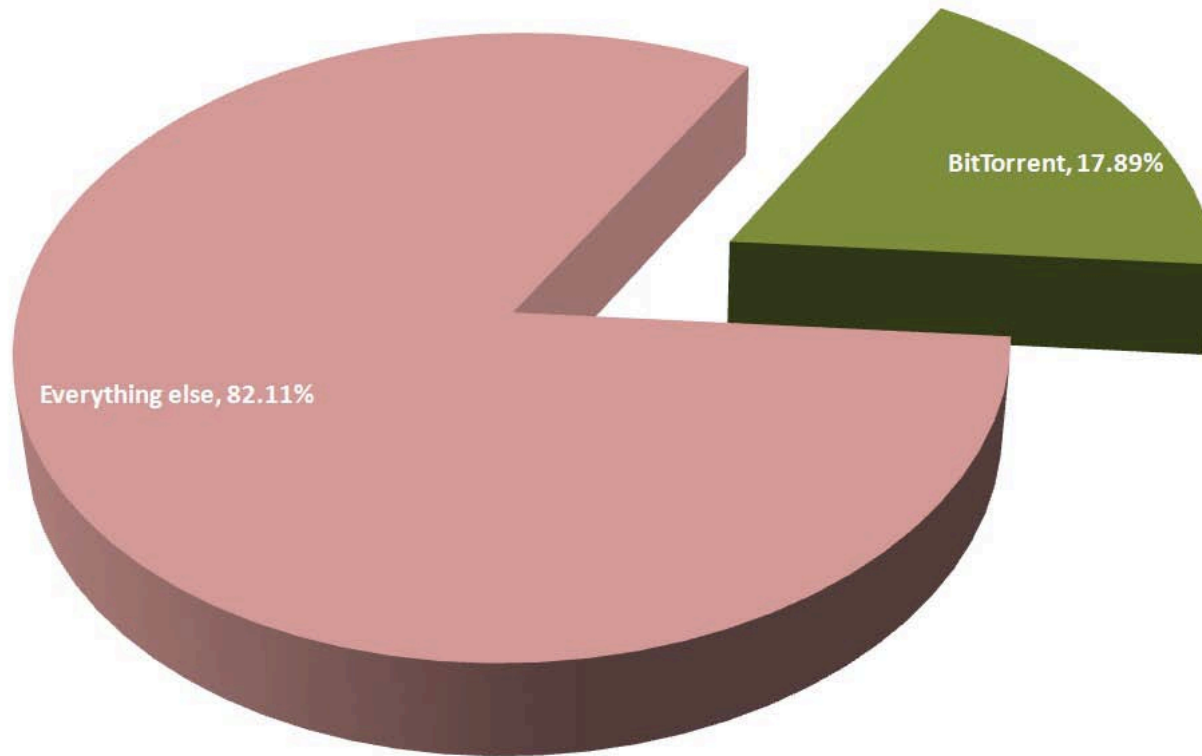
ipoque

... plus other academic
papers and research
studies

Estimate of global internet bandwidth use



BitTorrent



BitTorrent: methodology

PublicBT: most popular bittorrent tracker worldwide



2,721,440 individual torrent swarms on 12 December 2010

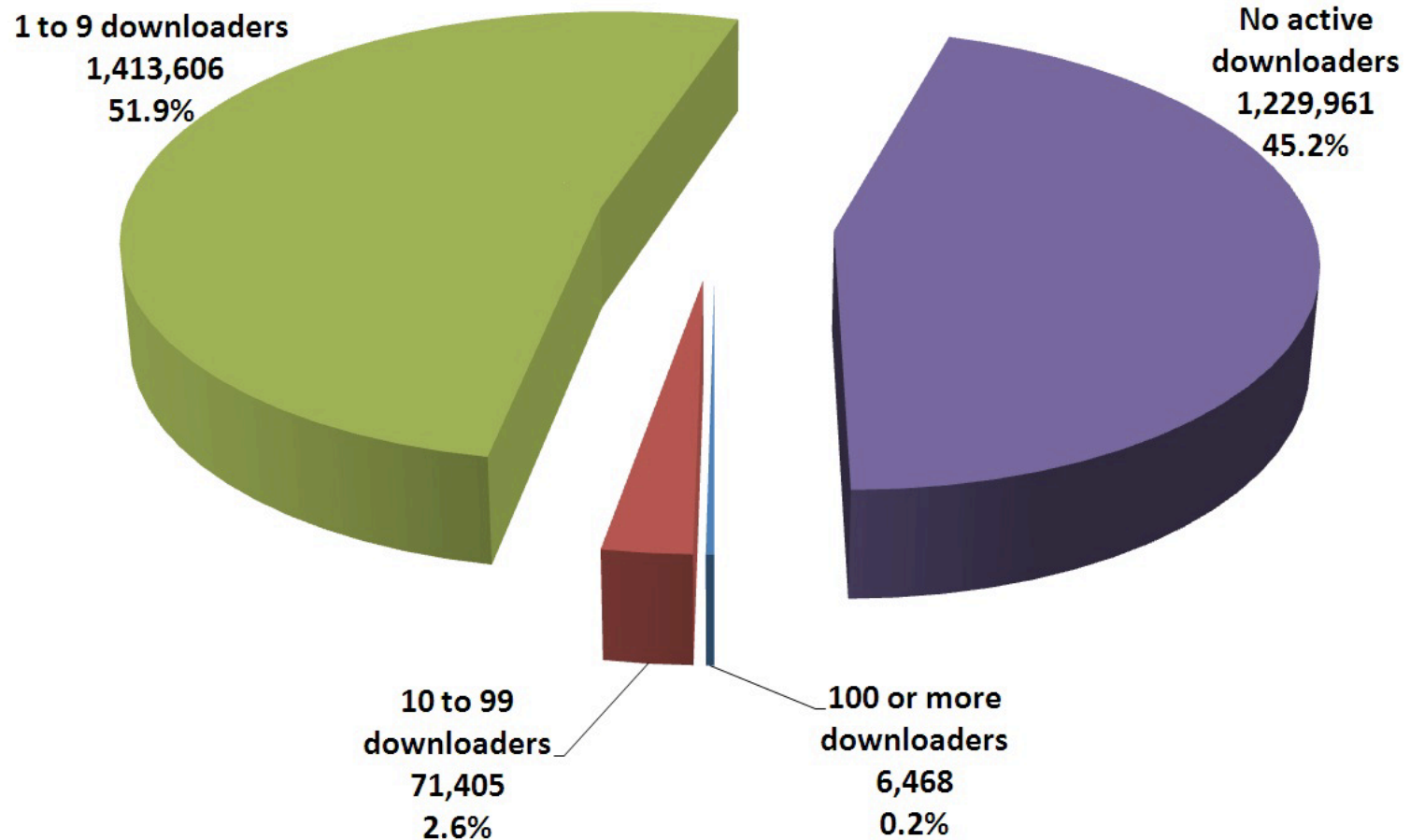
19.5m peers

Top 10,000 torrents sorted by downloaders (“leechers”) were identified

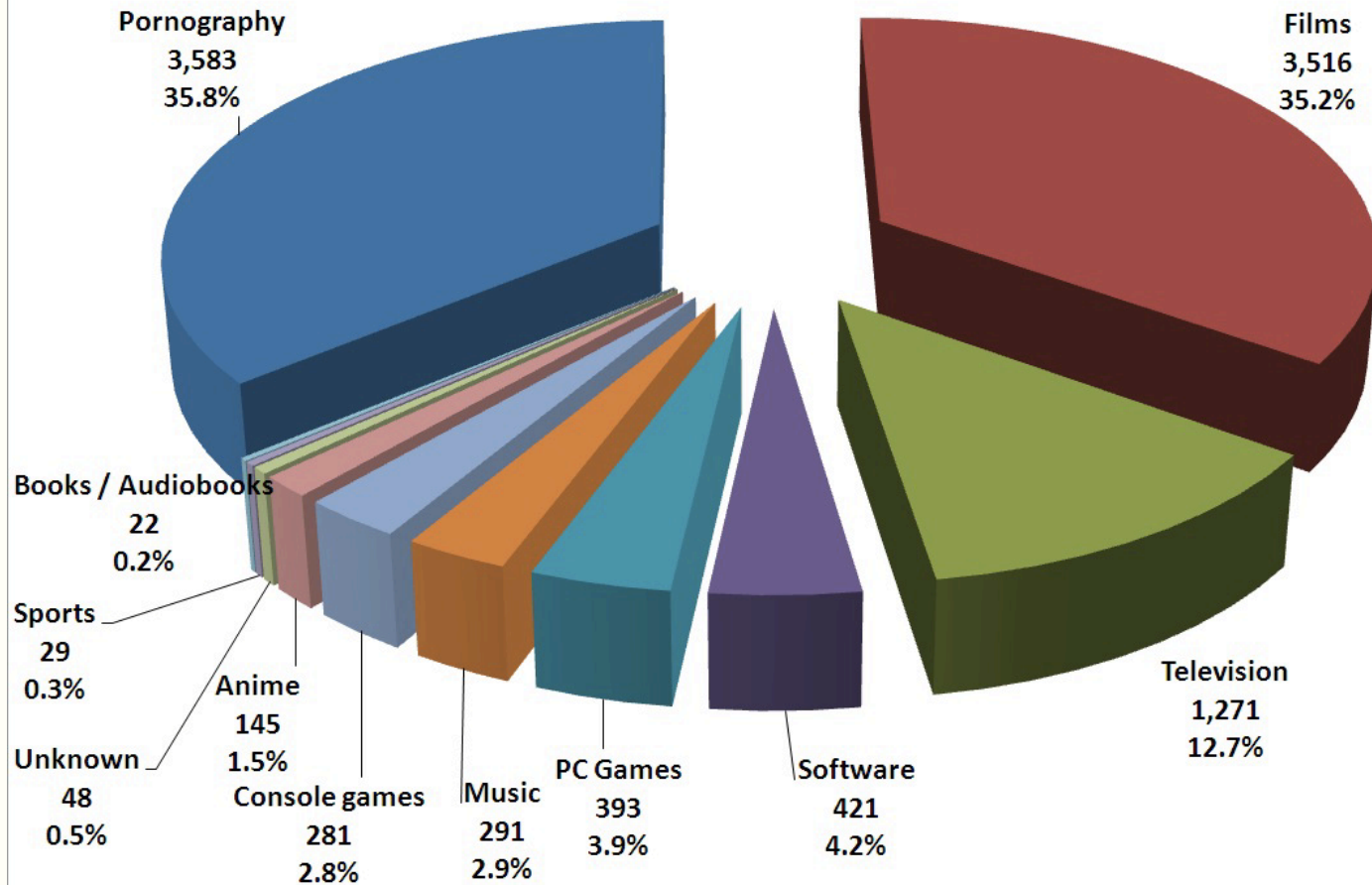
Top 10,000 = 0.34% of total torrents but 34.9% of all peers

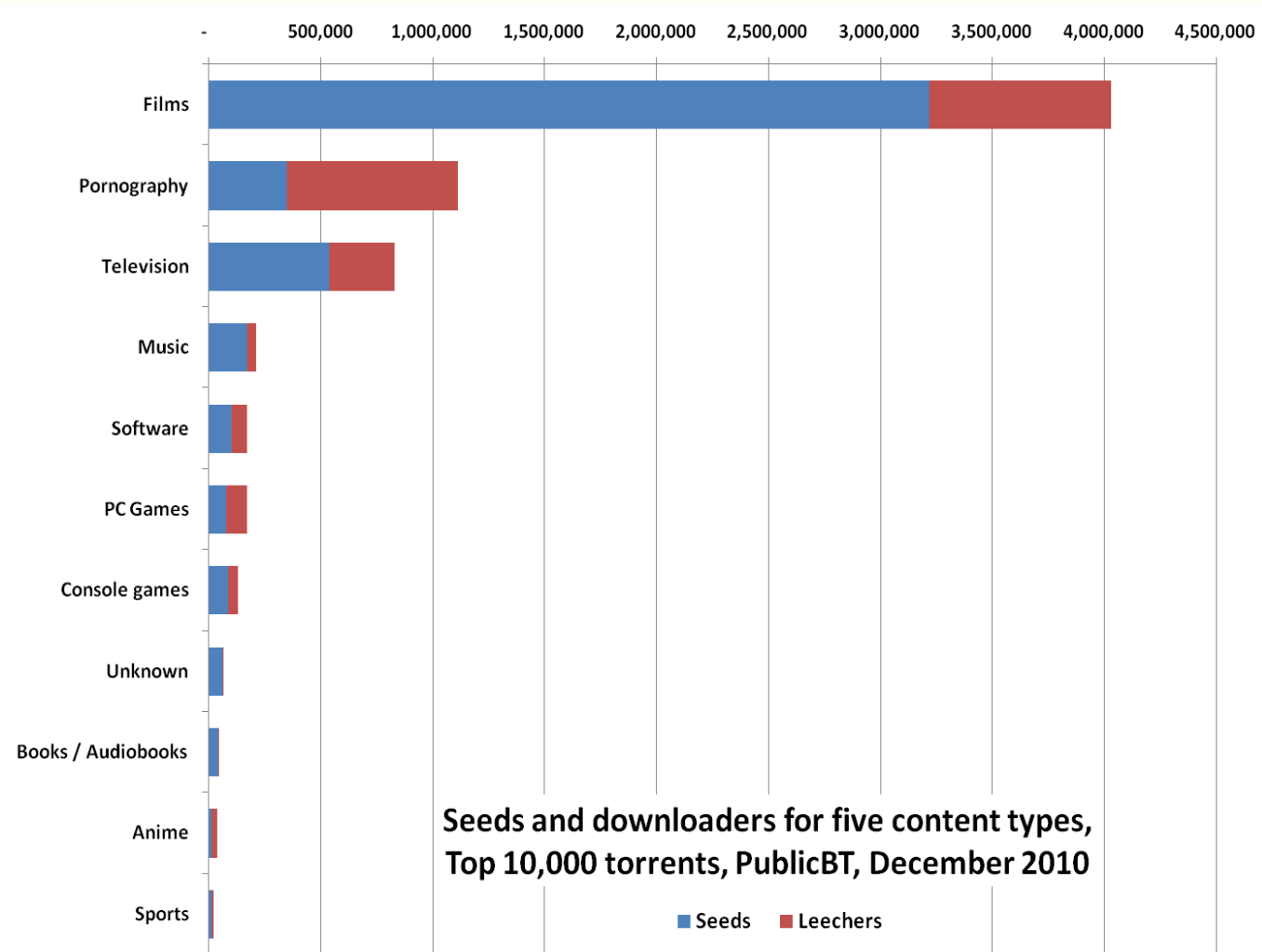
Enormous long-tail of content

Proportion of torrents by active downloaders
PublicBT tracker, 2.72m torrents, December 2010



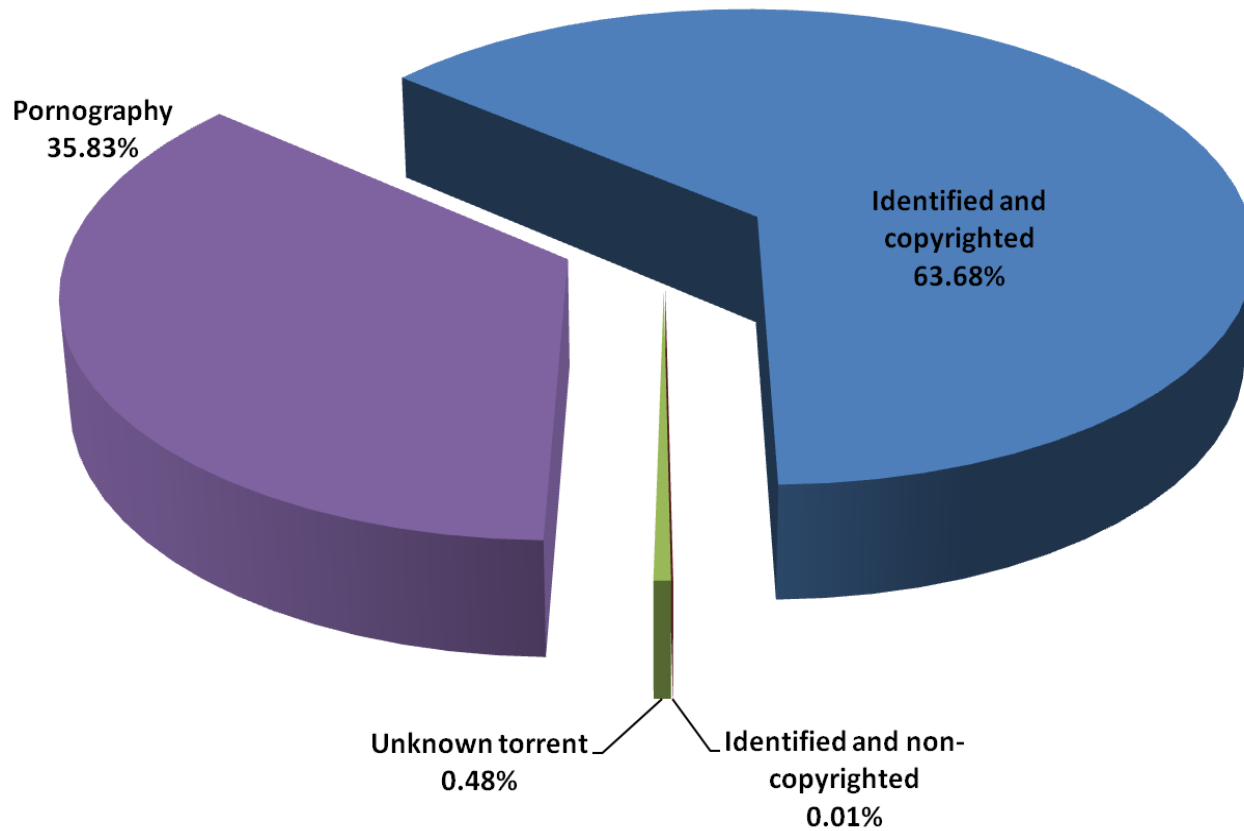
Top 10,000 torrents by content type,
PublicBT, December 2010



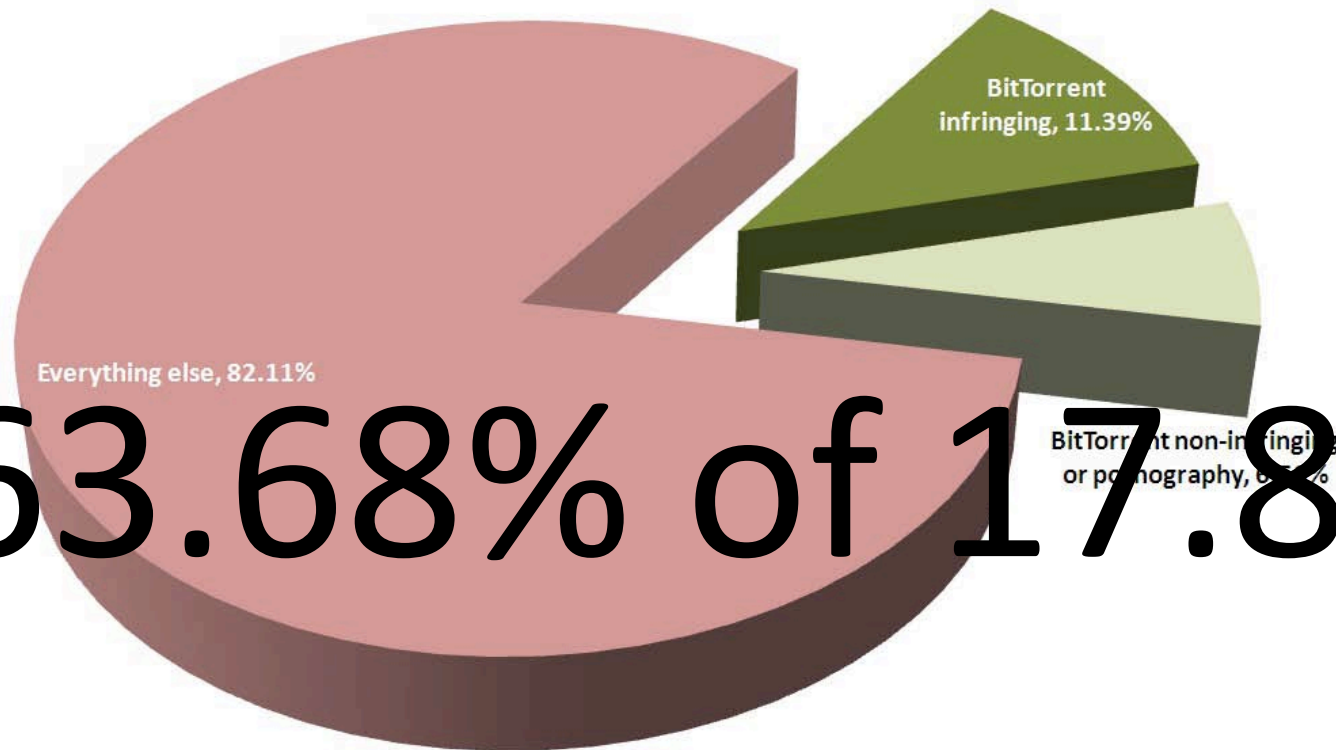




**Copyrighted material in top 10,000 torrents
tracked by PublicBT, December 2010**

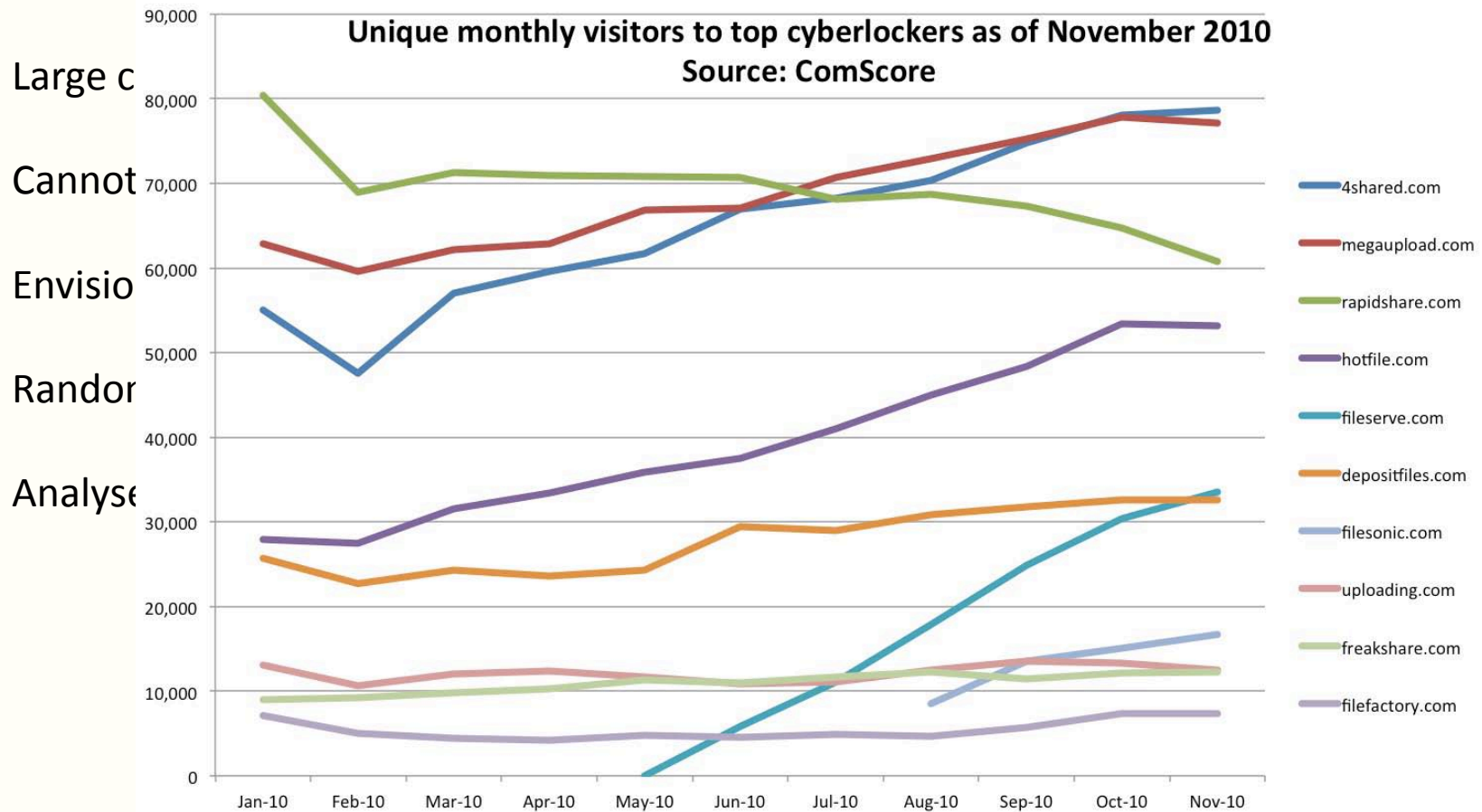


BitTorrent



= 63.68% of 17.89%

Cyberlockers: methodology



Cyberlockers: results

Content type	Links found		Copyrighted	
	#	%	#	%
Films	715	35.8%	709	99.2%
Pornography	401	20.1%	n/a	n/a
Music	201	10.1%	189	94.0%
Software	199	10.0%	180	90.5%
Games	187	9.4%	155	82.9%
Television	169	8.5%	162	95.9%
Other / unknown	76	3.8%	30	39.5%
Books / audio books	52	2.6%	38	73.1%
Total	2,000	100.0%	1,463	73.2%

Video streaming: methodology

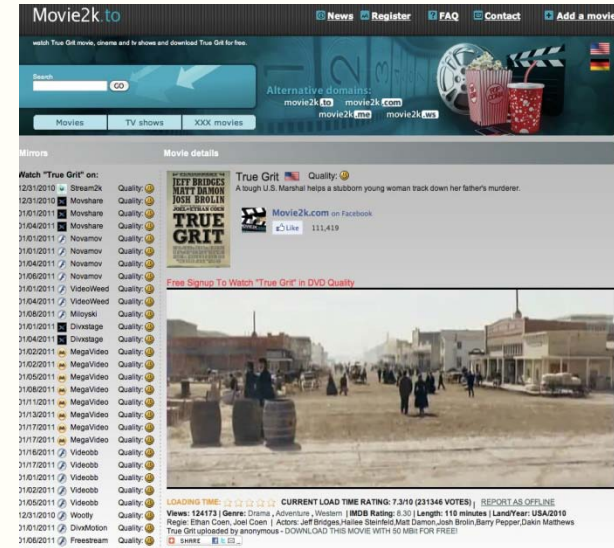
Video streaming is the fastest growing segment of internet bandwidth. 25% of all bandwidth – and growing

Most usage? Benign – but not difficult to find pirated titles

Comparison made of popular video link portal sites with bittorrent portal sites

Estimated pirated data usage of video streaming as a percentage of all video streaming traffic: **5.34%**

Estimated pirated data usage of video streaming sites as a percentage of all internet traffic: **1.42%**



Other file sharing arenas: methodology

eDonkey: searches made for a large number of copyrighted and non-copyrighted files

eDonkey as % of all internet traffic:	1.84%
Estimate of copyrighted content:	98.8%
... and as % of all internet traffic:	1.82%

Gnutella: search queries of users analysed

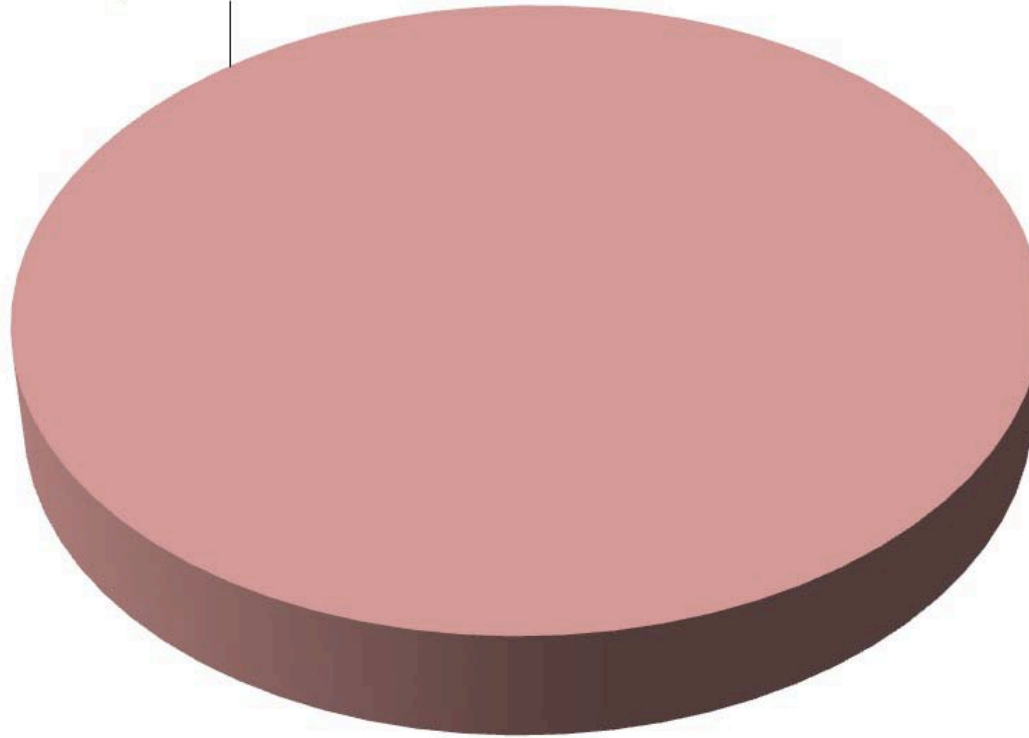
Gnutella as % of all internet traffic:	2.33%
Estimate of copyrighted content:	66.9%
... and as % of all internet traffic:	1.56%

Usenet: 100 random newsgroups, 100 last messages

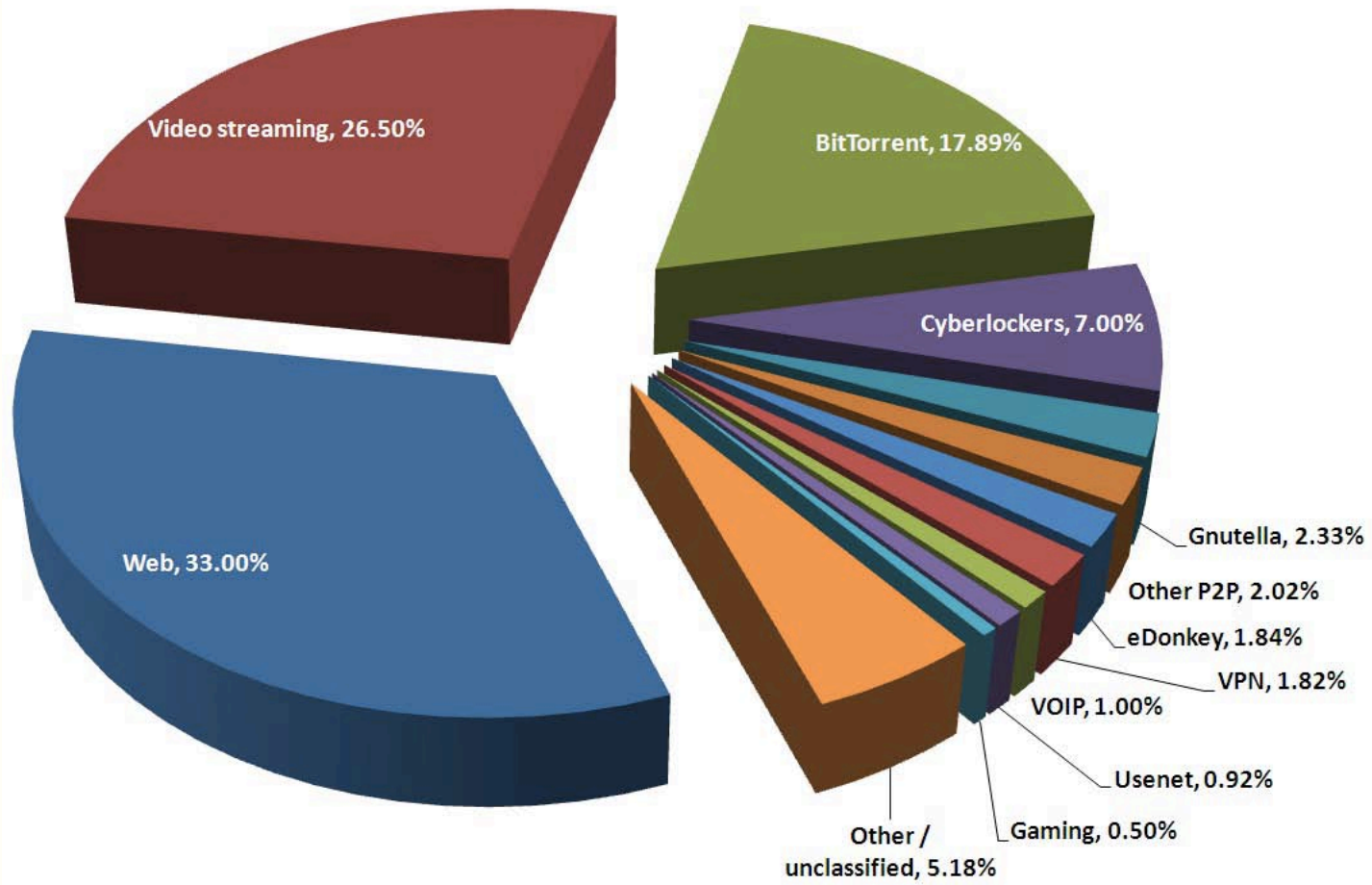
Usenet as % of all internet traffic:	0.92%
Estimate of copyrighted content:	93.4%
... and as % of all internet traffic:	0.86%

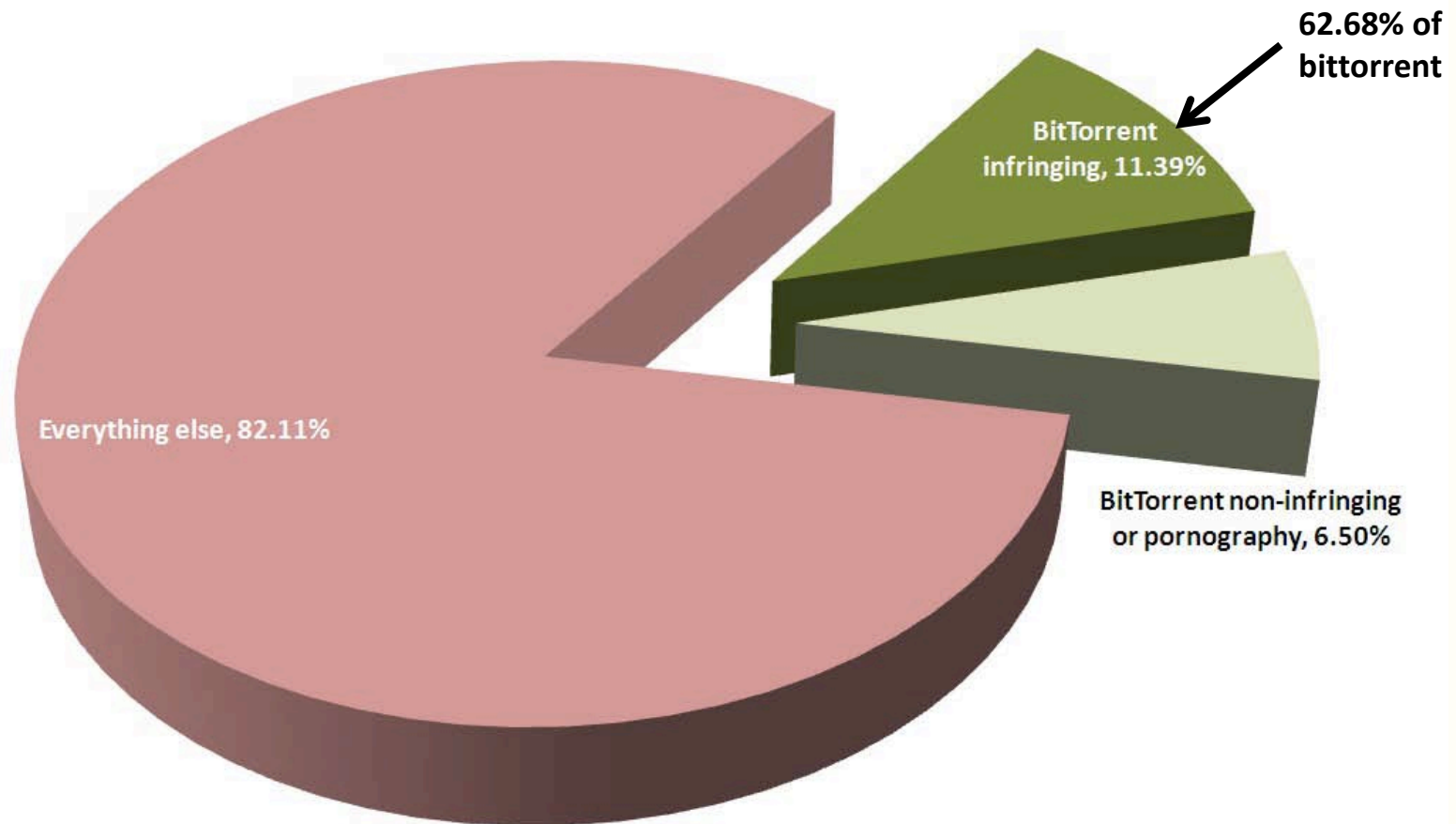
Estimate of global internet bandwidth use

The Internet, 100.00%



Estimate of global internet bandwidth use





Estimate of infringing use of global internet bandwidth

Non-infringing /
pornography, 76.24%

Infringing other
P2P, 1.60%

Infringing
Usenet, 0.86%

Infringing
eDonkey, 1.82%

Infringing
gnutella, 1.56%

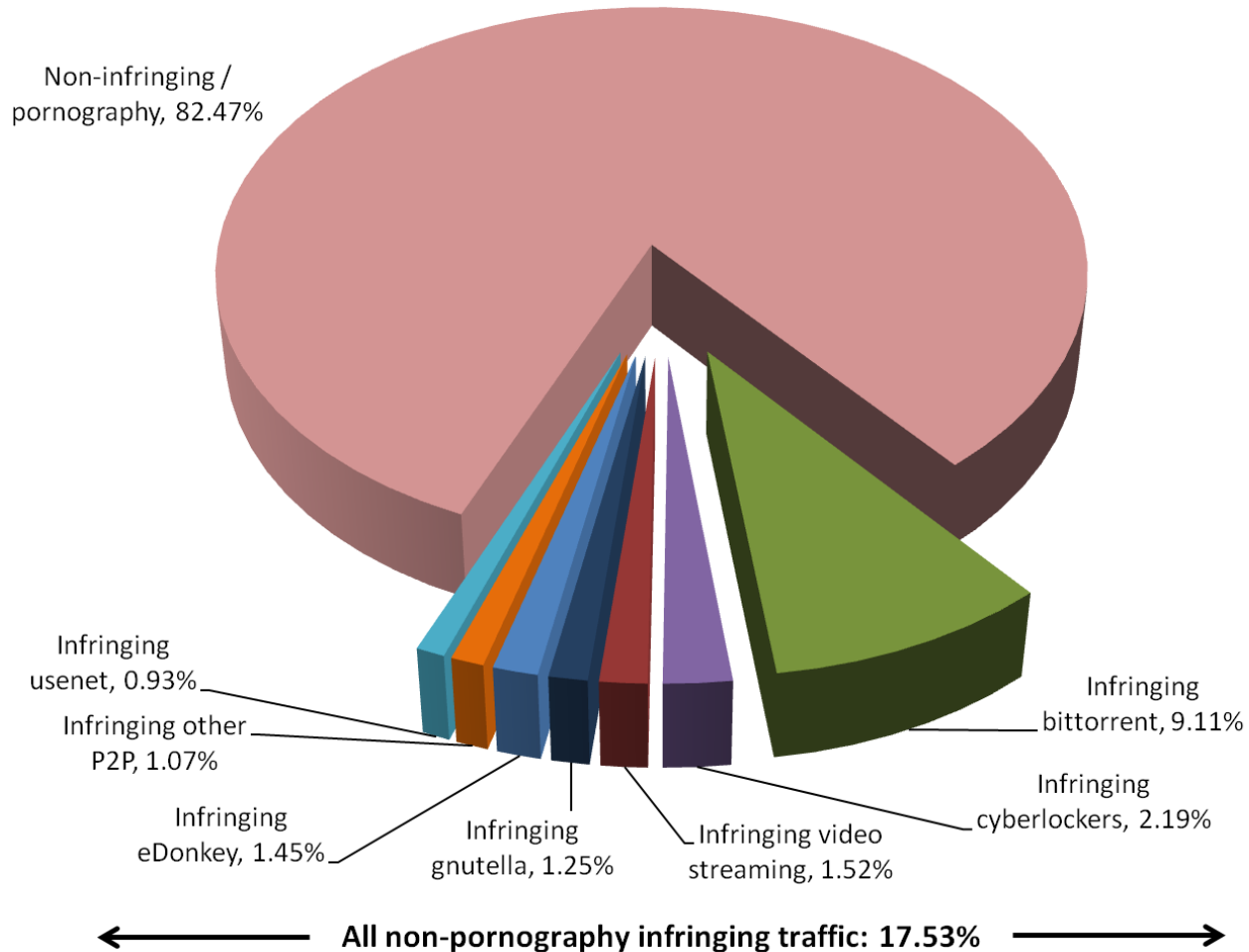
Infringing video
streaming, 1.42%

Infringing
cyberlockers, 5.12%

Infringing
bittorrent, 11.39%

← All non-pornography infringing traffic: 23.76% →

Estimate of infringing use of United States internet bandwidth



Links...

Report summary:

<http://bit.ly/bandwidth-summary>

Full report:

<http://bit.ly/bandwidth-report>