

The prevalence of High-Risk and Mainstream Advertisements Targeting Canadians on Rogue Websites

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JANUARY 2014

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EXECUTIVE SUMMARY

The revenue models underpinning rogue websites have only received research attention (Taplin, 2013). The accumulation of wealth through advertising on rogue websites diverts revenues from rightsholders, who have invested in creative industries, and threatens the viability of such industries by eroding the earnings base. Yet the greatest risks from advertising on these sites are primarily financial; instead, these sites represent a clear and present danger to their users, who are often children. While users are often exposed to “mainstream” advertising – juxtaposing household company names with hardcore pornography and other illicit material – “high risk” advertising has been found to comprise the overwhelming majority of ads targeting Australians (Watters, 2013a) and Singaporeans (Watters, 2013b). In this study, we use the methodology developed by Watters (2013a) to assess the harms due to users from viewing rogue website ads. A total of 5,000 webpages sampled from Google’s ad transparency report were downloaded in Canada, and each ad banner was categorised as being High Risk or Mainstream, after each page was verified as being in breach of DMCA for movies and TV from major international studios. 11% of ads were Mainstream, 89% were High Risk. The prevalence of Mainstream ads being served to Canadians is one order of magnitude greater than similar advertising being shown to Australians, but similar to Canadians. The policy implications of this result and future research directions, including methodology enhancements, are discussed.

KEY FINDINGS:

- 11% of ads delivered to Canadians were Mainstream, 89% were High Risk.
- 43.6% of High Risk ads were in the malware category, leading to a high likelihood of viral infection while visiting rogue sites.
- 18.2% of the High Risk ads were scams, which specifically targeted Canadians, by displaying the maple leaf emblem.
- 4.2% of High Risk ads were gambling advertisements, targeting Canadians, but operating outside Canadian jurisdiction and regulations.
- With 30% of advertising on rogue sites comprising ads from the sex industry, young Canadians (including teens and pre-teens) were at very high risk of being exposed to graphic, hard core pornography after one click. Early exposure to this material has known, harmful psychological effects. Parents and teachers who are supervising internet usage of minors need to be aware that such material is automatically served up by rogue sites.

DEFINITIONS

INTERNET ADVERTISING. Ads are typically placed as “banners” on a website, which direct a user to another site when clicked. The contents of the ad are similar to a highway billboard, except that they can incorporate interactive elements such as animation. Ads on the same page are often rotated through a predetermined or random sequence, depending on the advertising plan that an advertiser has subscribed to. While some sites host and manage their own banners, most often, these are managed by a third-party advertising network. These ad networks act as an intermediary between an advertiser and many hundreds, thousands or millions of sites, allowing an advertiser to increase their reach to potential consumers while only dealing with a single agency. Advertisers typically operate either a “pay per impression” or “pay per click” model, billing an advertiser every time a user views or clicks on a banner ad respectively.

MAINSTREAM ADVERTISING. Mainstream ads are those placed by legitimate businesses that operate within the formal economy. Such businesses operate through a corporate structure and offer goods or services which fall outside the black market, grey market or underground economy.

HIGH-RISK ADVERTISING. High-Risk ads are those promoting goods or services which fall outside the legitimate economy or white market, may be illegal or restricted within certain jurisdictions but not others, or may be fake or counterfeit. Examples include the sex industry, gambling and suspicious software/malware, such as anti-virus software which actually installs a Trojan Horse on a user’s system. Many of the ads are likely to fall into scam categories described by Stabek et al (2009).

ADVERTISING NETWORK. Ad networks facilitate the placement of an advertiser’s ads on numerous websites according to a specific revenue model. Ad networks specialise in anticipating consumer’s needs and wants by building up profiles of users who click most frequently on certain ad categories on certain page themes, which can lead to more targeted, personalised, and relevant advertising. For the purposes of this paper, sites that host advertising on behalf of external / third-party advertisers are also grouped under this category, even if they only provide banners on sites within their own domain. For example, isohunt.com provided their own ad network exclusively for their own site, and not to other sites; they also hosted banners from other ad networks.

INTERNET ADVERTISER. A business, government, association or individual that desires to sell goods or services, or provide information to, a target group of consumers. Internet advertising competes with traditional advertising for marketing budgets. Canada’s online advertising market was valued at US\$3.1b in 2013 and is growing rapidly¹.

ROGUE SITE. A website which provides an index and search capability for torrents of infringing content, a “file locker” site which provides hosting for such material, or a “link site” which provides direct links to content on third party sites. The primary motivation for users visiting these websites is to access infringing content. These sites can all use advertising as either primary or secondary sources of income.

1 http://iabcanada.com/files/Canadian_Internet_Advertising_Revenue_Survey_2012-13English.pdf

INTRODUCTION

Online advertising has a 20 year long history (Medoff, 2000), progressing from simple ad banners displayed on a fixed rotation schedule, through to personalised, behavioural advertising networks, which use profiles of individual users to present the most “relevant” advertisements (McStay, 2011). Such technologies make extensive use of “tracking cookies” (Watters, 2012) and the linkages between advertising networks and cookies have recently been monitored and explored for the most popular websites in an Australian case study (Herps et al, 2013). The most interesting result from this study was that the number of cookies stored on a user’s computer from any of the Top 50 most-visited sites for Australians ranged between 0 and 86. The sophistication and the extent to which user behaviour is tracked and experiences customised is only going to increase over time, as is the overall volume of advertising. Indeed, in 2012, online advertising spending in the US reached US\$39.6b, exceeding the amount spent on traditional print advertising for the first time (eMarketer, 2012).

Furthermore, some companies are in a unique position to know “everything” about their customers. Google, for example, has the capacity to monitor almost all of the world’s information, including personal emails, YouTube movies, Android phones, news services, images, shopping, blogs and so on (Cleland, 2013). Through its acquisition of Doubleclick, Google controlled an estimated 69% of the online advertising market (Browser Media, 2008), however, the rise of social media advertising (especially through Facebook) has seen this reduce to 56% (Womack, 2013). Clearly, there is a potential confluence of capability and opportunity to maximise the number of “eyeballs” exposed to online ads.

What are the implications of this massive rise in advertising expenditure, which coincides with an increased ability for online advertising networks to be able to best “place” ads to suit specific customers? One particular type of website – those associated with file sharing of infringing content – appears to have wholeheartedly embraced advertising. Indeed, advertising revenues provide the commercial motivation for criminal syndicates to operate such ‘rogue’ web sites. While the connection between film piracy and organised crime has been explored elsewhere, in terms of direct revenues (Treverton et al, 2009), there has been far less publicity about the advertising revenues generated from sites that appear to offer infringing content for free, or at least, offer torrents that enable users to download such material. Certainly, the links between the underground economy and the internet have been criticised for facilitating sexual exploitation and human trafficking through organised crime – in the classic paper in this field, Hughes (2000) highlighted how global advertising and marketing of prostitution have led to increases in volume globally. Furthermore, Hughes identified that a lack of regulation of internet advertising was the key policy failure in preventing harm to women and children.

The Pirate Bay is one of the most popular sites for providing torrents to infringing content, and has been the subject of criminal proceedings against its operators in Sweden. In the 2009 trial of its operators, their expenses were estimated to be US\$110,000 (Olsson, 2006; Kuprianko, 2009), with advertising revenues in the order of US\$1.4m (Sundberg, 2009) – in other words, an extremely profitable business with gross margins of 1272%! A recent study (Detica, 2012) indicated that there are six different business models operating within the pirate site marketplace,

ranging from advertisement and donation funding, through to subscriptions and freemium sites, where subscribers can gain faster access to illicit content by paying a subscription fee. 83% of the sites in that study operated using a central website. Selling advertising on file locker and torrent search sites is the major source of revenue for such sites. The Pirate Bay, for example, regularly features in the Top 50 sites accessed by Canadians (as computed by alexa.com), and so it is a potentially attractive space for advertisers and ad networks, since the number of potential “eyeballs” is very high. Maximising “eyeballs” leads to clicking, which drives revenue for the ad networks (if they operate a Pay Per Click revenue model), and sales for the advertisers. A key question for advertisers and ad networks is the extent to which they wish to be associated with this type of activity; indeed, due to the complex algorithms which decide which ads to display to which users, advertisers may not be aware of every site that their ads are being displayed on.

Being able to quantify the scale of advertising on these sites is important, since informing and making advertisers aware of the integrity of the sites on which their ads are being displayed can then be undertaken. Advertisers will thus be able to make more informed choices about their use of online advertising networks (the companies who provide aggregation of space on web sites) who are supporting piracy by selling ad space on torrent and file locker sites. A recent set of best practice guidelines for ad networks to address piracy and counterfeiting have recently been released², and early indications are that most of the world’s major web companies will participate³.

There have been few systematic studies investigating the relationship between piracy and advertising, and most have been concerned with the impact of interventions to reduce piracy. For example, Sheehan et al (submitted) identified that increasing the perception of legal risk for college students was most likely to influence downloading behaviour, while Gopal et al (2009) weighed up the ethical predispositions of downloaders and their beliefs in justice and law to the money potentially saved by downloading infringing content. Indeed, it is this appeal to justice as the primary virtue of social behaviour (Rawls, 1999) that may concern ethical advertisers if their advertising expenditure was being used to fund illicit activities.

Recently, the USC Annenberg Lab has begun producing a report that explores the relationship between piracy sites and online advertising networks (Taplin, 2013). The USC report provides a method for revealing the advertisers whose ads are most likely to be served up on these sites, which may be occurring without the direct knowledge of the advertiser. While the objectives of USC research are significant, the monthly rankings of the “top ten” advertising networks responsible for placing the most ads on web sites that support infringing content are surprisingly variable – Google, for example, was ranked at #2 in January 2013, but did not appear at all in the February and March 2013 lists at all.

One interpretation of the result could be that the January report achieved its goal of sensitising advertising networks, and that Google subsequently withdrew from placing ads on those sites. Alternatively, the variation could be due to biases inherent in studies using an observational methodology, including:

- Selection bias, in the way that infringing sites are selected. The study uses a

2 <http://2013ippractices.com/bestpracticesguidelinesforadnetworkstoaddresspiracyandcounterfeiting.html>

3 <http://torrentfreak.com/tech-giants-sign-deal-to-ban-advertising-on-pirate-websites-130715/>

single source (the Google Transparency Report of domains with the most DMCA takedown requests), rather than using a consensus technique which combines the ranks of several different data sources to provide the most accurate ranking. This type of triangulation is commonly used in observational studies as a form of triangulation;

- Information bias, since only one technique for collecting data is used (HTML and JavaScript code scraping), where other techniques may be more accurate or representative of advertising behaviour. For example, persistent cookies have been strongly associated with behavioural advertising, and the frequency of tracking cookies being stored by ad networks could provide an alternative measure of presence of significance. Yet the USC report does not analyse cookies at all; and
- Recall bias, since the data analysed was only from English-language websites and advertising networks which may potentially have a higher level of visibility than networks which operate in other geographic zones, languages, encoding types etc

Also, the lack of detail in how measures like the “top 500” sites prevent the study results from being directly replicated, which would be the standard required for peer review by other researchers. By not providing this level of detail, the credibility of the USC report may be called into question by the very vocal critics of any research in the anti-piracy field.

In this paper, we present a more rigorous and fully replicable methodology which should provide a much clearer view of advertiser behaviour in different countries, jurisdictions, languages etc. In this initial study, we specifically target Canadian users content produced and distributed by major international Studios; the methodology itself is sufficiently general that it could be applied to any country and any category, including music, computer games, e-books etc

Two previous studies using this methodology focused on the ads being served to Australians and Singaporeans. In the Australian study, it was found that 99% of the ads from the “top 500” sites were High-Risk, while only 1% were Mainstream. In the Singaporean study, it was found that 90% of the ads from the “top 500” sites were High-Risk, while 10% were Mainstream. It is predicted that a similar proportion in the range 1-10% Mainstream ads will be found in Canada.

METHODOLOGY

The main goal of the methodology is to identify the advertising networks and advertisers from a sample of DMCA complaints, which have been ranked in terms of the number of complaints upheld by Google (through their Transparency Report).

These complaints typically relate to the availability of search results for a wide range of potentially infringing content; by only selecting the most complained about and subsequently upheld complaints as assessed by a third-party (Google), the results should be robust against criticisms that there is no proof that the sites in question were hosting torrents of infringing content or infringing content directly, in the case of a file locker site.

The methodology operates by downloading each page from the “top 500” complaints submitted to Google within the previous month, ordered by the number of upheld complaints. Since each DMCA notice can contain many thousands of individual URLs, a sampling procedure can be used to identify a representative subset of URLs, and the advertisements on each page can be downloaded along with their metadata. In the case of simple banner ads, it is then relatively easy to identify the advertisers concerned; in the case of each distinct advertisement, a rule can be generated using SQL or similar to identify all advertisements with the same metadata. However, some advertising networks use JavaScript obfuscation and a series of redirects to obscure the ultimate destination for the advertising banner; in this case, manual inspection must be performed, in the absence of a general purpose image/logo recognition system.

Furthermore, it may be of interest to separate out “Mainstream” advertisements as opposed to “High-Risk” advertising, since the Annenberg reports indicate a flight by Mainstream advertising this year from sites that host infringing content. Advertisers who may otherwise be unable to place their ads on a Mainstream site can then take advantage of increasing “eyeballs” by occupying display space. Results are thus reported for the High-Risk and Mainstream categories, with the former including categories such as:

- Sex Industry, which includes adverts for:
 - » Penis length extension medication
 - » Fake personal/dating sites
 - » Pornography of various kinds
 - » Dating and “foreign bride” sites
- Online Gambling
- Malware, including
 - » Fake software incorporating Trojan horse malware (numerous alerts were raised by anti-virus software during the data

collection process due to “drive by downloads” of malware)

- » Fake anti-virus or anti-scamware
- » Suspicious software such as fake video codecs or video players that replicate existing functions within Microsoft Windows. The purpose of such downloads is unclear, although it is possible that they could host Trojans or provide backdoor access to systems.
- Scams, as defined by Stabek et al (2010), such as:
 - » Premium rate SMS scams
 - » Fake competitions where no prizes are offered
 - » Investment scams
 - » Employment scams

The algorithm works as follows:

1. A data collection system is installed physically or logically to attract advertising for a specific geographical/country segment. For this study, Canada was selected.
2. The current Google Transparency Report⁴ is downloaded, which lists all of the DMCA requests for a specific time period⁵. This list provides one means of identifying sites involved in sharing pirated material.
3. The dataset is sorted by the number of URLs removed, retaining the “top 500” DMCA requests (the request list) by complaint category. For this study, the complaint category was movies and TV shows; other complaint categories such as pirated software, adult material, music etc were excluded.
4. For each report in the request list first 10 URLs are extracted as a representative sample of all of the URLs contained within the report. This gives a total of 5,000 web pages to be downloaded (the sample).
5. Each of the 5,000 web pages in the sample is downloaded, and a screenshot is taken, showing the ads being served. Note that pop-up ads are not captured.
6. For each web page in the sample, the code blocks that contain advertising are parsed and extracted. This can be achieved by matching against the Easy List⁶ (used by Adblock Plus for filtering), for known URL patterns and hostnames of advertisers. Some pages in the sample will have no ads, while others will have multiple ads.

4 <https://www.google.com/transparencyreport/removals/copyright/data/>

5 The DMCA list for August 2013 was used in this analysis

6 <http://easylist.adblockplus.org/en/>

7. All of the elements in a page that have a substring match within the HTML are recorded as an “advertising element” from Step 6; these include images, scripts and so on. Some pages will have relatively more elements that incorporate the matched name compared to other sites. Since a compound regex string matching system is used, it is not always possible to determine which substring triggers a match⁷.
8. For each identified advertisement, an attempt is made to identify the actual advertiser, by analysing metadata, following the link and extracting the domain of the actual advertiser, or through visual inspection. A list of all identified advertisers is then generated. Where a domain appears within an ad block, this is a technical definition as per the methodology in Steps 6 and 7, ie, if the site or known ad URL appears in the block, then it will be counted. This could include Facebook social plugins, for example, rather than Facebook ads.
9. For one “mainstream” advertising network identified as present on web page, a further 100 samples of advertising are downloaded and added to any unseen advertisers to the identified list. Whilst breadth-first searching provides insight into overall prevalence of ads of different kinds on different sites, depth-first searching reveals the variation of mainstream ads on individual sites.

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An enhanced system could unpack each of these filters with a commensurate reduction in performance.

RESULTS

Appendix A contains a list of the DMCA notices identified in Step 3, including TV and movies from major international studios such as Fox, Warner Bros etc. From the 5,000 pages analysed in Step 4, a total of 12,190 advertising items and 3,025 visible ads were identified in Step 6⁸. Postprocessing of the identified domains were performed to ensure that all ad blocks were correctly identified, for example, by removing port numbers that were included as part of a URL. Appendix B contains a list of the most common sites analysed; Table 1 contains a list of the top ten sites analysed. The analysis is presented by reviewing the High Risk ads first, followed by the Mainstream ads.

TABLE 1. Top 10 Rogue Sites by Frequency

Website	Frequency
rapidgator.net	198
1337x.org	175
filestube.com	110
rapidshare.com	109
bitsnoop.com	88
extabit.com	72
filetram.com	70
filespar.com	66
0sce.com	65
bitshare.com	62

HIGH-RISK ADVERTISING - ALL SITES

An example of malware downloaded is from the highest frequency ad network cucirca.eu: a link from a rogue site to download a TV episode or movie is provided, eg, <http://www.cucirca.eu/2009/06/12/watch-24-online/> - once the user visits this site, and clicks on the “play” button, a new page is loaded which contains the link (http://dke.videoconverterdownloadfree.com/download/flash-hd/?ts=205&subid=20oQO13apaWR1wMv3EGDU81vrbo1000.&line_item=272727&dp=Mvw18_ckncFRp_eH5gUOutKjU8-z62Jccswiwbe-ZlmlJSld0h6t615IEJKrCvIKAmQfdhcHdtq6nyE7KqW9J0JUxsNbvytie2PVJFLItKX_Q9dqp36D_LyDMLarSgtDD_1F0tAsDvmw1v2yByfV_jG16RM9zkw6JJGbkWd6rJiu2M_IGy4veBRNKXihmdbac9wi56lIO2vDrhBuwoo7COq2cfsNg-gyMc205a3ig4GeVkrHm5JMNw42axUhO_LV4z11uoZR1y9mRbMuAZf6Jjxml0HUQtuDrfVLx10X1_GOI5Z24luKqIkC-AB12X67w2PN2psxrSEU7xKN89FCr-esXaev321cjhitjZEWd2_x_LdBcGANcrpYEs0hxYjoIMQAF&dp2=P11887105_CR12960055_CA11966097).

Upon visiting this page, a download is initiated to the user’s computer containing the file setup.exe which is 1.3M in size, as the page indicates that “video downloader” is required to view the movie or TV episode.

⁸ Advertising items include any scripts, images, spacers etc being referenced from an Adblock domain, in addition to visible ads

Running this “video downloader” file through the online scanner virscan.org – which analyses suspicious files using 36 different products – the file is verified as malware by four products:

- TROJ_GEN.F47V0902 (TrendMicro-HouseCall)
- Bundlore (fs) (VIPRE)
- PUP.Optional.Bundlelore.A (Malwarebytes)
- Adware.Downware.925 (DrWeb)

A review of the other known filenames associated with similar malware on other rogue indicates a typical strategy of associating a desirable filename with the malicious code, ie, using a filename that users desiring to download infringing content will click on, including Mortal Kombat - Komplete Edition Crack (2013) Download.exe and Transformers 3 - Dark of the Moon (2011) [1080p].exe.

Table 2 shows the breakdown of the most common ad categories for High Risk ads across all networks. Each advertisement was downloaded, visually inspected and categorised. The results indicate that the sex industry, malware, downloading sites, gambling or scams (including employment, investment and SMS premium rate) were the most popular distinct advertising types. The categories are summarised in Figure 1.

TABLE 2. Frequency by Ad category - High Risk Ads

	Sex	Malware	Download	Gambling	Scams
N	805	1172	106	113	489
%	30.0%	43.6%	3.9%	4.2%	18.2%

FIGURE 1. High-Risk Advertising

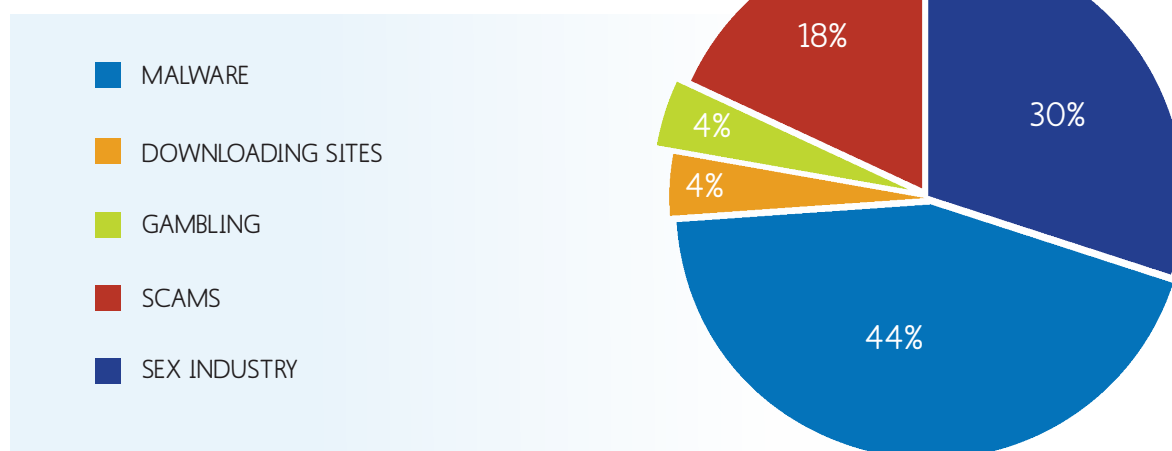


Table 2 contains a summary of the results from the Top 10 ad networks. There were 5,046 advertisements in this sub-sample of which 1,446 items were distinct. Each of these advertisements was downloaded, visually inspected and categorised. The results indicate that malware, scams (including

employment, investment and SMS premium rate), and the sex industry were the most popular distinct advertising types in Canada for the Top 10 networks.

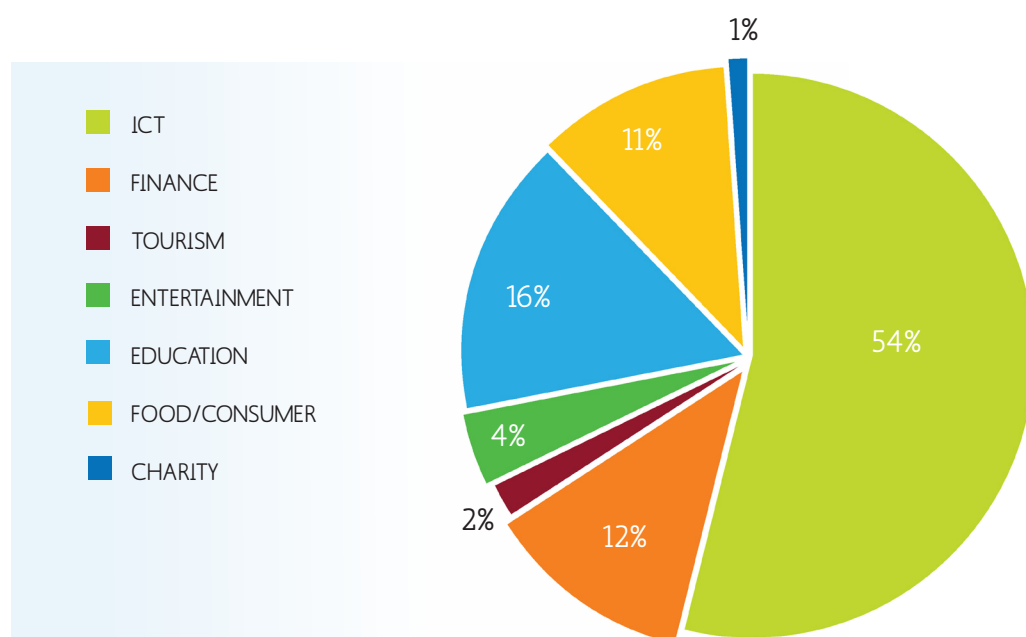
MAINSTREAM ADVERTISING - ALL SITES

Results were obtained by visually inspecting every advertisement in the sample (comprising 10 pages from each of the Google Ad Transparency Top 500 complaints) to identify whether they contained any Mainstream advertising. Typically, a rogue site will have 3-4 ad panels, and in many cases, the ads were tailored to the local geographic context. In some cases, advertisements were blocked with an image stating the site was “blocked for Canadians” indicating further evidence of geographic customisation for the advertising content. In some cases, domains associated with file sharing were “parked” and advertising displayed, even if no infringing content was actually displayed – especially where such sites had terms like “warez”, “anon” and “rapidshare” in their domain name. 340 Mainstream advertisements were detected in total.

89% OF ADVERTISEMENTS DISPLAYED ON ILLEGAL WEBSITES ARE HIGH-RISK⁹

11% of the ads sampled consistently showed evidence of targeting Canadian users through the presentation of Mainstream advertising. For example, some ads were presented in French; others contained geographic designations, such as “Vancouver”, or were for local car dealerships (such as Timmons VW).

FIGURE 2. Mainstream Advertising



⁹ High-Risk ads are those promoting goods or services which fall outside the legitimate economy or white market, may be illegal or restricted within certain jurisdictions but not others, or may be fake or counterfeit.

Some ads and/or advertisers were only detected once. In a sense, this represents a type of leakage, since the Mainstream ads were a minority of the overall ads displayed (which were overwhelmingly High-Risk). A breakdown by industry category is shown in Figure 2.

MAINSTREAM ADVERTISING - TOP 10 ADS

Table 3 shows the frequency distribution for the most frequently detected Mainstream ads, where the results for individual ads have been grouped using the industry categories shown in Figure 2.

FIGURE 3. Mainstream Advertising - By Category

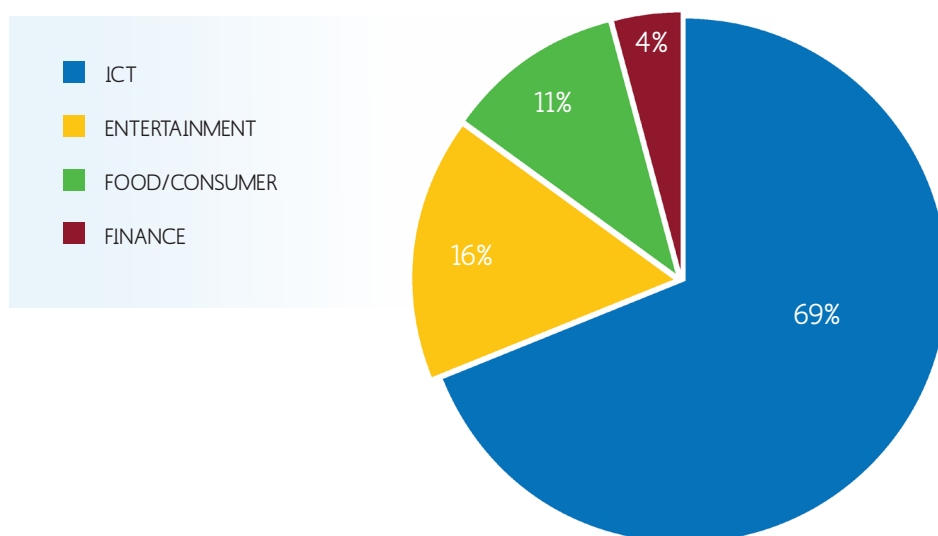


TABLE 3. Mainstream Advertisers Detected (Breadth-First)

Advertiser	Eg. Site where displayed	Frequency	% of Ads
ICT	tehparadox.com	132	69.11%
Entertainment	warezzers.com	31	16.23%
Food/Consumer	pastebin.com	20	10.47%
Finance	warezzers.com	8	4.19%

MAINSTREAM ADVERTISING - DEPTH FIRST

A depth-first search was performed on the URL <http://pastebin.com/0EHZkc5r> which was drawn from the sample used in the breadth first analysis. The advertisers were then identified from each page in the sample of 100 pages, from which only mainstream ads were retained. The results are shown in Table 4, where the results for individual ads have been grouped using the industry categories shown in Figure 2. The results are shown in Figure 4.

FIGURE 4. Mainstream Advertising - Depth-First

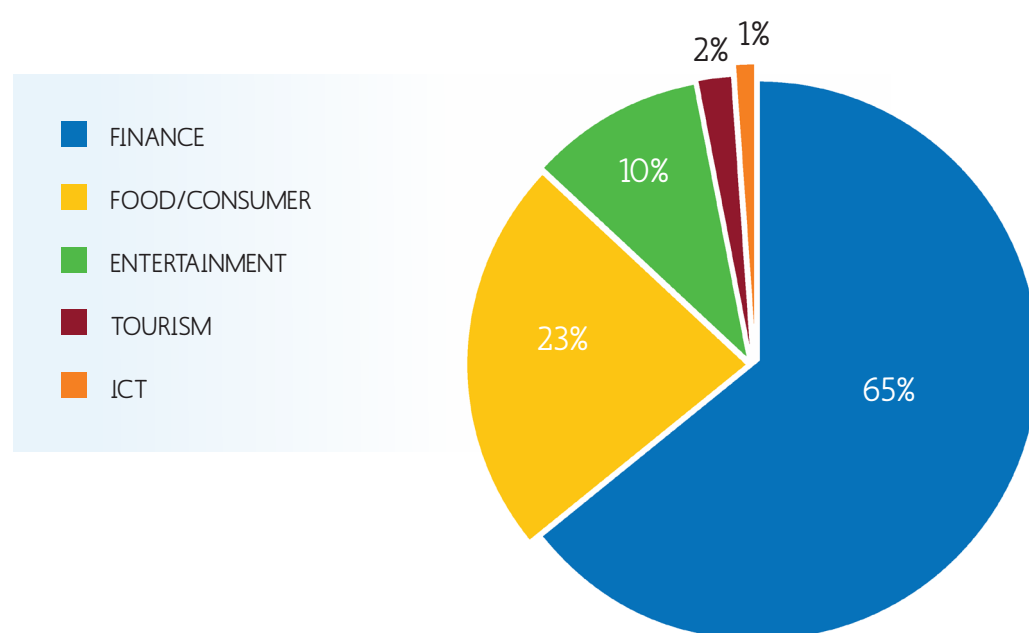


TABLE 4. Mainstream Advertising Categories (Depth-First Search)

Category	N	Percentage %
Finance	102	64.97%
Food/Consumer	36	22.93%
Entertainment	16	10.19%
Tourism	2	1.27%
ICT	1	0.64%

CONCLUSION

High Risk ads comprise the dominant form of advertising on rogue sites as viewed by Canadians. Canadians are at a very high risk of being exposed to advertisements for the sex industry, malware, scams and gambling if they visit rogue websites. Such advertisements pose a real risk to the mental wellbeing of Canadians, and appear to be inconsistent with Canada's social policies.

Mainstream ads were present at a much higher than a comparable study for Australia, with ad banners often customised to suite local tastes and interests. Other household names across many different industries such as banking, transport and leisure were prominently displayed. Even if only a single ad was displayed in this sample, such an occurrence would correspond to a prevalence rate of 1 in 5,000 for all ad impressions.

The key findings from the analysis of the first Canadian data set are discussed below:

- 89% of the ads were High-Risk; only 11% were Mainstream.
- In the High-Risk ads, 43.6% were for malicious or suspected malicious code, while 30% were for the sex industry. A further 18.2% were for scams of various kinds, including premium rate SMS, investment and employment scams, and gambling ads were 4.2%. While these were broadly comparable to the Singaporean and Australian data, variations may be due to the implementation of ISP or government filtering regimes. For example, all visually-explicit content was blocked in Singapore, but sex industry ads in Canada appeared to quite explicit images.
- A significant number of household name brands in Canada choosing to advertise on sites and their pages which are promoting the distribution of infringing content (movies and TV shows). Further investigation is needed to uncover the mechanics of how these ads are selected to appear; are advertisers engaging directly with ad networks, or are ad networks operating at a wholesale level and distributing ads to other networks through a resale programme? Who, eventually, has control over the display of this type of advertising space?
- Household names from the top Mainstream advertisers included industries such as ICT, Finance, Tourism, Entertainment, Education, Government, Food/Consumer and Charity.

Drawing together these findings, some key lessons can be drawn:

- Canadians have a greater chance of viewing Mainstream ads compared to Australians or Singaporeans, but the overwhelming majority of ads served by rogue sites are High Risk and pose a real danger to viewers.
- While Singaporean High Risk ads appeared to be filtered to some extent, with many "blank" ads appearing in screenshots where an ad should have been visible, this was not the case in Canada, although technical controls to block text ad content could be explored (eg, Ho & Watters, 2004).

- Advertisers need to have better mechanisms to control where their ads are eventually displayed on ad networks. Better systems for operational assurance and detection of misplaced ads need to be considered, whether they operate using a whitelist or a blacklist (Ho & Watters, 2005).
- Regulatory approaches need to be considered to control the revenue flowing to rogue websites, and to minimise harm to users. A proposed code of conduct (Dredge, 2013) would be a first step to isolating rogue websites. Advertisers recently succeeded in pressuring Facebook, for example, to remove offensive by threatening to remove ads (as a group; Cellan-Jones, 2013).
- Other types of rogue content have been managed effectively by legal sanctions in the past. For example, search results for pharmaceuticals without prescriptions (O'Donnell, 2013) were removed by Google after they paid a very significant fine, given that illicit drug distribution is a growing problem online (Watters & Phair, 2012). A number of fake “Viagra” and “Cialis” ads were detected; what would be the consequences of citizens ordering and consuming such fake medicines?
- Since cyber criminals are very effective at exploiting jurisdictional differences, a global, industry wide code may have a greater impact on revenue flows for rogue websites. However, industry codes need to engage with ad networks that are placing ads for High Risk advertisers. At this stage, none of the top advertising networks supporting rogue websites appear to be involved in the proposed code of conduct¹⁰. Also, no additional burden should be placed on rightsholders to police the internet for offensive material.

10 <http://www.bbc.co.uk/news/technology-23325627>

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APPENDIX A- TOP 500 DMCA NOTICES, FILM & TV SHOWS

URL

Complainant

http://www.chillingeffects.org/notice.cgi?sID=1049509	Paramount
http://www.chillingeffects.org/notice.cgi?sID=834193	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=751596	Fox
http://www.chillingeffects.org/notice.cgi?sID=751602	Fox
http://www.chillingeffects.org/notice.cgi?sID=751592	Fox
http://www.chillingeffects.org/notice.cgi?sID=424017	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1014294	Fox
http://www.chillingeffects.org/notice.cgi?sID=751600	Fox
http://www.chillingeffects.org/notice.cgi?sID=420695	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=914092	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=912393	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=914087	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=484692	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=909946	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=917867	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=917865	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=931220	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=840130	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=909951	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=624985	Fox
http://www.chillingeffects.org/notice.cgi?sID=697197	Fox
http://www.chillingeffects.org/notice.cgi?sID=745698	Fox
http://www.chillingeffects.org/notice.cgi?sID=744418	Fox
http://www.chillingeffects.org/notice.cgi?sID=744440	Fox
http://www.chillingeffects.org/notice.cgi?sID=735345	Fox
http://www.chillingeffects.org/notice.cgi?sID=735343	Fox
http://www.chillingeffects.org/notice.cgi?sID=709974	Fox
http://www.chillingeffects.org/notice.cgi?sID=589279	Fox
http://www.chillingeffects.org/notice.cgi?sID=626647	Fox
http://www.chillingeffects.org/notice.cgi?sID=806571	Fox
http://www.chillingeffects.org/notice.cgi?sID=806574	Fox
http://www.chillingeffects.org/notice.cgi?sID=800603	Fox
http://www.chillingeffects.org/notice.cgi?sID=807911	Fox
http://www.chillingeffects.org/notice.cgi?sID=807914	Fox
http://www.chillingeffects.org/notice.cgi?sID=810817	Fox
http://www.chillingeffects.org/notice.cgi?sID=833528	Fox
http://www.chillingeffects.org/notice.cgi?sID=796306	Fox

http://www.chillingeffects.org/notice.cgi?sID=796304	Fox
http://www.chillingeffects.org/notice.cgi?sID=1075083	Fox
http://www.chillingeffects.org/notice.cgi?sID=1141488	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=839851	Fox
http://www.chillingeffects.org/notice.cgi?sID=807886	Fox
http://www.chillingeffects.org/notice.cgi?sID=1032190	Fox
http://www.chillingeffects.org/notice.cgi?sID=696774	CBS
http://www.chillingeffects.org/notice.cgi?sID=802140	Fox
http://www.chillingeffects.org/notice.cgi?sID=610308	Fox
http://www.chillingeffects.org/notice.cgi?sID=797962	Fox
http://www.chillingeffects.org/notice.cgi?sID=593586	Fox
http://www.chillingeffects.org/notice.cgi?sID=1024874	Fox
http://www.chillingeffects.org/notice.cgi?sID=797955	Fox
http://www.chillingeffects.org/notice.cgi?sID=569793	Fox
http://www.chillingeffects.org/notice.cgi?sID=748973	Fox
http://www.chillingeffects.org/notice.cgi?sID=887683	Fox
http://www.chillingeffects.org/notice.cgi?sID=796761	Fox
http://www.chillingeffects.org/notice.cgi?sID=839848	Fox
http://www.chillingeffects.org/notice.cgi?sID=810838	Fox
http://www.chillingeffects.org/notice.cgi?sID=806570	Fox
http://www.chillingeffects.org/notice.cgi?sID=748976	Fox
http://www.chillingeffects.org/notice.cgi?sID=875523	Fox
http://www.chillingeffects.org/notice.cgi?sID=802150	Fox
http://www.chillingeffects.org/notice.cgi?sID=617970	Fox
http://www.chillingeffects.org/notice.cgi?sID=630405	Fox
http://www.chillingeffects.org/notice.cgi?sID=1024868	Fox
http://www.chillingeffects.org/notice.cgi?sID=622843	Fox
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http://www.chillingeffects.org/notice.cgi?sID=1040842	Fox
http://www.chillingeffects.org/notice.cgi?sID=802148	Fox
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http://www.chillingeffects.org/notice.cgi?sID=809517	Fox
http://www.chillingeffects.org/notice.cgi?sID=797964	Fox
http://www.chillingeffects.org/notice.cgi?sID=797969	Fox
http://www.chillingeffects.org/notice.cgi?sID=854107	Fox
http://www.chillingeffects.org/notice.cgi?sID=805038	Fox
http://www.chillingeffects.org/notice.cgi?sID=1076976	Fox
http://www.chillingeffects.org/notice.cgi?sID=809480	Fox
http://www.chillingeffects.org/notice.cgi?sID=1012435	CBS
http://www.chillingeffects.org/notice.cgi?sID=807899	Fox
http://www.chillingeffects.org/notice.cgi?sID=761110	Fox
http://www.chillingeffects.org/notice.cgi?sID=759956	Fox
http://www.chillingeffects.org/notice.cgi?sID=802147	Fox

http://www.chillingeffects.org/notice.cgi?sID=800623	Fox
http://www.chillingeffects.org/notice.cgi?sID=671841	Fox
http://www.chillingeffects.org/notice.cgi?sID=877350	Fox
http://www.chillingeffects.org/notice.cgi?sID=699788	CBS
http://www.chillingeffects.org/notice.cgi?sID=691667	CBS
http://www.chillingeffects.org/notice.cgi?sID=608195	Fox
http://www.chillingeffects.org/notice.cgi?sID=710006	Fox
http://www.chillingeffects.org/notice.cgi?sID=839850	Fox
http://www.chillingeffects.org/notice.cgi?sID=740277	Fox
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http://www.chillingeffects.org/notice.cgi?sID=803668	Fox
http://www.chillingeffects.org/notice.cgi?sID=690628	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=833525	Fox
http://www.chillingeffects.org/notice.cgi?sID=877348	Fox
http://www.chillingeffects.org/notice.cgi?sID=832527	CBS
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http://www.chillingeffects.org/notice.cgi?sID=1134248	NBCUniversal
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http://www.chillingeffects.org/notice.cgi?sID=850444	CBS
http://www.chillingeffects.org/notice.cgi?sID=424016	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=786160	Fox
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http://www.chillingeffects.org/notice.cgi?sID=869277	Fox
http://www.chillingeffects.org/notice.cgi?sID=1121626	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=641975	Fox
http://www.chillingeffects.org/notice.cgi?sID=833661	CBS
http://www.chillingeffects.org/notice.cgi?sID=1012510	Fox
http://www.chillingeffects.org/notice.cgi?sID=839858	Fox
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http://www.chillingeffects.org/notice.cgi?sID=484691	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1134250	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=761107	Fox
http://www.chillingeffects.org/notice.cgi?sID=768110	Fox
http://www.chillingeffects.org/notice.cgi?sID=741636	Fox
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http://www.chillingeffects.org/notice.cgi?sID=768071	Fox
http://www.chillingeffects.org/notice.cgi?sID=1150322	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1150325	NBCUniversal
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http://www.chillingeffects.org/notice.cgi?sID=362855	NBCUniversal
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http://www.chillingeffects.org/notice.cgi?sID=912400	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=963791	NBCUniversal
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http://www.chillingeffects.org/notice.cgi?sID=870415	Fox
http://www.chillingeffects.org/notice.cgi?sID=711684	Fox
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http://www.chillingeffects.org/notice.cgi?sID=1131026	Fox
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http://www.chillingeffects.org/notice.cgi?sID=345876	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=771329	Fox
http://www.chillingeffects.org/notice.cgi?sID=736623	Fox
http://www.chillingeffects.org/notice.cgi?sID=743035	Fox
http://www.chillingeffects.org/notice.cgi?sID=857430	Fox
http://www.chillingeffects.org/notice.cgi?sID=769283	Fox
http://www.chillingeffects.org/notice.cgi?sID=758548	Fox
http://www.chillingeffects.org/notice.cgi?sID=680984	CBS
http://www.chillingeffects.org/notice.cgi?sID=849785	Fox
http://www.chillingeffects.org/notice.cgi?sID=780612	Fox
http://www.chillingeffects.org/notice.cgi?sID=1134223	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=783435	Fox
http://www.chillingeffects.org/notice.cgi?sID=872058	Fox
http://www.chillingeffects.org/notice.cgi?sID=769284	Fox
http://www.chillingeffects.org/notice.cgi?sID=821874	Fox
http://www.chillingeffects.org/notice.cgi?sID=711703	Fox
http://www.chillingeffects.org/notice.cgi?sID=765677	Fox

http://www.chillingeffects.org/notice.cgi?SID=839867	Fox
http://www.chillingeffects.org/notice.cgi?SID=857386	Fox
http://www.chillingeffects.org/notice.cgi?SID=1012507	Fox
http://www.chillingeffects.org/notice.cgi?SID=907972	Fox
http://www.chillingeffects.org/notice.cgi?SID=377126	NBCUniversal
http://www.chillingeffects.org/notice.cgi?SID=770322	Fox
http://www.chillingeffects.org/notice.cgi?SID=860925	Fox
http://www.chillingeffects.org/notice.cgi?SID=639228	Fox
http://www.chillingeffects.org/notice.cgi?SID=866177	Fox
http://www.chillingeffects.org/notice.cgi?SID=870436	Fox
http://www.chillingeffects.org/notice.cgi?SID=770330	Fox
http://www.chillingeffects.org/notice.cgi?SID=840116	NBCUniversal
http://www.chillingeffects.org/notice.cgi?SID=740272	Fox
http://www.chillingeffects.org/notice.cgi?SID=858553	Fox
http://www.chillingeffects.org/notice.cgi?SID=788356	Fox
http://www.chillingeffects.org/notice.cgi?SID=827152	Fox
http://www.chillingeffects.org/notice.cgi?SID=353265	NBCUniversal
http://www.chillingeffects.org/notice.cgi?SID=780613	Fox
http://www.chillingeffects.org/notice.cgi?SID=788366	Fox
http://www.chillingeffects.org/notice.cgi?SID=826055	Fox
http://www.chillingeffects.org/notice.cgi?SID=996031	Fox
http://www.chillingeffects.org/notice.cgi?SID=741621	Fox
http://www.chillingeffects.org/notice.cgi?SID=776911	Fox
http://www.chillingeffects.org/notice.cgi?SID=769273	Fox
http://www.chillingeffects.org/notice.cgi?SID=864650	Fox
http://www.chillingeffects.org/notice.cgi?SID=901228	Fox
http://www.chillingeffects.org/notice.cgi?SID=718450	Fox
http://www.chillingeffects.org/notice.cgi?SID=248513	NBCUniversal
http://www.chillingeffects.org/notice.cgi?SID=761112	Fox
http://www.chillingeffects.org/notice.cgi?SID=789956	Fox
http://www.chillingeffects.org/notice.cgi?SID=690635	NBCUniversal
http://www.chillingeffects.org/notice.cgi?SID=789690	Fox
http://www.chillingeffects.org/notice.cgi?SID=862837	Fox
http://www.chillingeffects.org/notice.cgi?SID=788360	Fox
http://www.chillingeffects.org/notice.cgi?SID=826044	Fox
http://www.chillingeffects.org/notice.cgi?SID=735380	Fox
http://www.chillingeffects.org/notice.cgi?SID=909595	Fox
http://www.chillingeffects.org/notice.cgi?SID=1133306	CBS
http://www.chillingeffects.org/notice.cgi?SID=799167	Fox
http://www.chillingeffects.org/notice.cgi?SID=827160	Fox
http://www.chillingeffects.org/notice.cgi?SID=826058	Fox
http://www.chillingeffects.org/notice.cgi?SID=869209	Fox
http://www.chillingeffects.org/notice.cgi?SID=893980	Fox

http://www.chillingeffects.org/notice.cgi?sID=859637	Fox
http://www.chillingeffects.org/notice.cgi?sID=234361	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=867768	Fox
http://www.chillingeffects.org/notice.cgi?sID=869223	Fox
http://www.chillingeffects.org/notice.cgi?sID=835144	Fox
http://www.chillingeffects.org/notice.cgi?sID=955096	Fox
http://www.chillingeffects.org/notice.cgi?sID=768111	Fox
http://www.chillingeffects.org/notice.cgi?sID=762202	Fox
http://www.chillingeffects.org/notice.cgi?sID=821882	Fox
http://www.chillingeffects.org/notice.cgi?sID=780616	Fox
http://www.chillingeffects.org/notice.cgi?sID=802142	Fox
http://www.chillingeffects.org/notice.cgi?sID=1143069	CBS
http://www.chillingeffects.org/notice.cgi?sID=901222	Fox
http://www.chillingeffects.org/notice.cgi?sID=687762	Fox
http://www.chillingeffects.org/notice.cgi?sID=858554	Fox
http://www.chillingeffects.org/notice.cgi?sID=639220	Fox
http://www.chillingeffects.org/notice.cgi?sID=827162	Fox
http://www.chillingeffects.org/notice.cgi?sID=922295	Fox
http://www.chillingeffects.org/notice.cgi?sID=1012493	Fox
http://www.chillingeffects.org/notice.cgi?sID=857383	Fox
http://www.chillingeffects.org/notice.cgi?sID=857412	Fox
http://www.chillingeffects.org/notice.cgi?sID=364668	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=963794	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=857407	Fox
http://www.chillingeffects.org/notice.cgi?sID=1002082	Fox
http://www.chillingeffects.org/notice.cgi?sID=1131025	Fox
http://www.chillingeffects.org/notice.cgi?sID=784940	Fox
http://www.chillingeffects.org/notice.cgi?sID=862832	Fox
http://www.chillingeffects.org/notice.cgi?sID=770333	Fox
http://www.chillingeffects.org/notice.cgi?sID=860897	Fox
http://www.chillingeffects.org/notice.cgi?sID=820289	CBS
http://www.chillingeffects.org/notice.cgi?sID=821866	Fox
http://www.chillingeffects.org/notice.cgi?sID=947386	Fox
http://www.chillingeffects.org/notice.cgi?sID=1040832	Fox
http://www.chillingeffects.org/notice.cgi?sID=937751	Fox
http://www.chillingeffects.org/notice.cgi?sID=930905	Fox
http://www.chillingeffects.org/notice.cgi?sID=859623	Fox
http://www.chillingeffects.org/notice.cgi?sID=947362	Fox
http://www.chillingeffects.org/notice.cgi?sID=383230	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=942997	Fox
http://www.chillingeffects.org/notice.cgi?sID=827089	Fox
http://www.chillingeffects.org/notice.cgi?sID=1002078	Fox
http://www.chillingeffects.org/notice.cgi?sID=779625	Fox

http://www.chillingeffects.org/notice.cgi?sID=781977	Fox
http://www.chillingeffects.org/notice.cgi?sID=1130857	CBS
http://www.chillingeffects.org/notice.cgi?sID=780621	Fox
http://www.chillingeffects.org/notice.cgi?sID=481995	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=909606	Fox
http://www.chillingeffects.org/notice.cgi?sID=789462	Fox
http://www.chillingeffects.org/notice.cgi?sID=753958	Fox
http://www.chillingeffects.org/notice.cgi?sID=226404	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=353264	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=848938	Fox
http://www.chillingeffects.org/notice.cgi?sID=849795	Fox
http://www.chillingeffects.org/notice.cgi?sID=879400	Fox
http://www.chillingeffects.org/notice.cgi?sID=848937	Fox
http://www.chillingeffects.org/notice.cgi?sID=508875	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=866184	Fox
http://www.chillingeffects.org/notice.cgi?sID=362870	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=997424	CBS
http://www.chillingeffects.org/notice.cgi?sID=821876	Fox
http://www.chillingeffects.org/notice.cgi?sID=675492	Fox
http://www.chillingeffects.org/notice.cgi?sID=997769	Fox
http://www.chillingeffects.org/notice.cgi?sID=827170	Fox
http://www.chillingeffects.org/notice.cgi?sID=997805	Fox
http://www.chillingeffects.org/notice.cgi?sID=826052	Fox
http://www.chillingeffects.org/notice.cgi?sID=717409	Fox
http://www.chillingeffects.org/notice.cgi?sID=925025	Fox
http://www.chillingeffects.org/notice.cgi?sID=1014235	Fox
http://www.chillingeffects.org/notice.cgi?sID=913780	Fox
http://www.chillingeffects.org/notice.cgi?sID=949940	Fox
http://www.chillingeffects.org/notice.cgi?sID=857431	Fox
http://www.chillingeffects.org/notice.cgi?sID=788381	Fox
http://www.chillingeffects.org/notice.cgi?sID=851073	Fox
http://www.chillingeffects.org/notice.cgi?sID=864652	Fox
http://www.chillingeffects.org/notice.cgi?sID=901212	Fox
http://www.chillingeffects.org/notice.cgi?sID=901227	Fox
http://www.chillingeffects.org/notice.cgi?sID=820353	Fox
http://www.chillingeffects.org/notice.cgi?sID=771324	Fox
http://www.chillingeffects.org/notice.cgi?sID=875568	Fox
http://www.chillingeffects.org/notice.cgi?sID=827082	Fox
http://www.chillingeffects.org/notice.cgi?sID=848941	Fox
http://www.chillingeffects.org/notice.cgi?sID=824712	Fox
http://www.chillingeffects.org/notice.cgi?sID=683800	CBS
http://www.chillingeffects.org/notice.cgi?sID=827167	Fox
http://www.chillingeffects.org/notice.cgi?sID=859638	Fox

http://www.chillingeffects.org/notice.cgi?sID=1010609	Fox
http://www.chillingeffects.org/notice.cgi?sID=747404	Fox
http://www.chillingeffects.org/notice.cgi?sID=465529	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=833514	Fox
http://www.chillingeffects.org/notice.cgi?sID=756884	Fox
http://www.chillingeffects.org/notice.cgi?sID=713013	Fox
http://www.chillingeffects.org/notice.cgi?sID=1034398	Fox
http://www.chillingeffects.org/notice.cgi?sID=907977	Fox
http://www.chillingeffects.org/notice.cgi?sID=964679	Fox
http://www.chillingeffects.org/notice.cgi?sID=922247	Fox
http://www.chillingeffects.org/notice.cgi?sID=848942	Fox
http://www.chillingeffects.org/notice.cgi?sID=826059	Fox
http://www.chillingeffects.org/notice.cgi?sID=718467	Fox
http://www.chillingeffects.org/notice.cgi?sID=753950	Fox
http://www.chillingeffects.org/notice.cgi?sID=701158	CBS
http://www.chillingeffects.org/notice.cgi?sID=931193	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=756631	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1040841	Fox
http://www.chillingeffects.org/notice.cgi?sID=1047188	Fox
http://www.chillingeffects.org/notice.cgi?sID=225205	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1040849	Fox
http://www.chillingeffects.org/notice.cgi?sID=909573	Fox
http://www.chillingeffects.org/notice.cgi?sID=808588	Fox
http://www.chillingeffects.org/notice.cgi?sID=887687	Fox
http://www.chillingeffects.org/notice.cgi?sID=718468	Fox
http://www.chillingeffects.org/notice.cgi?sID=907983	Fox
http://www.chillingeffects.org/notice.cgi?sID=870424	Fox
http://www.chillingeffects.org/notice.cgi?sID=825796	Fox
http://www.chillingeffects.org/notice.cgi?sID=869282	Fox
http://www.chillingeffects.org/notice.cgi?sID=1131027	Fox
http://www.chillingeffects.org/notice.cgi?sID=879407	Fox
http://www.chillingeffects.org/notice.cgi?sID=826056	Fox
http://www.chillingeffects.org/notice.cgi?sID=851082	Fox
http://www.chillingeffects.org/notice.cgi?sID=907041	Fox
http://www.chillingeffects.org/notice.cgi?sID=823370	Fox
http://www.chillingeffects.org/notice.cgi?sID=909579	Fox
http://www.chillingeffects.org/notice.cgi?sID=1024866	Fox
http://www.chillingeffects.org/notice.cgi?sID=1024871	Fox
http://www.chillingeffects.org/notice.cgi?sID=903386	Fox
http://www.chillingeffects.org/notice.cgi?sID=1131039	Fox
http://www.chillingeffects.org/notice.cgi?sID=850854	Fox
http://www.chillingeffects.org/notice.cgi?sID=901229	Fox
http://www.chillingeffects.org/notice.cgi?sID=756633	NBCUniversal

http://www.chillingeffects.org/notice.cgi?sID=917859	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=1012514	Fox
http://www.chillingeffects.org/notice.cgi?sID=867822	Fox
http://www.chillingeffects.org/notice.cgi?sID=866182	Fox
http://www.chillingeffects.org/notice.cgi?sID=866190	Fox
http://www.chillingeffects.org/notice.cgi?sID=864665	Fox
http://www.chillingeffects.org/notice.cgi?sID=1052259	Fox
http://www.chillingeffects.org/notice.cgi?sID=756904	Fox
http://www.chillingeffects.org/notice.cgi?sID=827166	Fox
http://www.chillingeffects.org/notice.cgi?sID=512017	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=933115	Fox
http://www.chillingeffects.org/notice.cgi?sID=996009	Fox
http://www.chillingeffects.org/notice.cgi?sID=1002085	Fox
http://www.chillingeffects.org/notice.cgi?sID=873846	Fox
http://www.chillingeffects.org/notice.cgi?sID=869227	Fox
http://www.chillingeffects.org/notice.cgi?sID=1121629	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=997802	Fox
http://www.chillingeffects.org/notice.cgi?sID=889856	Fox
http://www.chillingeffects.org/notice.cgi?sID=762170	Fox
http://www.chillingeffects.org/notice.cgi?sID=1012515	Fox
http://www.chillingeffects.org/notice.cgi?sID=820368	Fox
http://www.chillingeffects.org/notice.cgi?sID=741620	Fox
http://www.chillingeffects.org/notice.cgi?sID=833533	Fox
http://www.chillingeffects.org/notice.cgi?sID=907979	Fox
http://www.chillingeffects.org/notice.cgi?sID=1062483	Fox
http://www.chillingeffects.org/notice.cgi?sID=1131040	Fox
http://www.chillingeffects.org/notice.cgi?sID=756628	NBCUniversal
http://www.chillingeffects.org/notice.cgi?sID=999830	Fox
http://www.chillingeffects.org/notice.cgi?sID=1042610	Fox
http://www.chillingeffects.org/notice.cgi?sID=848936	Fox
http://www.chillingeffects.org/notice.cgi?sID=893991	Fox
http://www.chillingeffects.org/notice.cgi?sID=997801	Fox
http://www.chillingeffects.org/notice.cgi?sID=843249	Fox

APPENDIX B- FULL LIST OF ROGUE SITES DETECTED

Site	Frequency
rapidgator.net	198
1337x.org	175
filestube.com	110
rapidshare.com	109
bitsnoop.com	88
extabit.com	72
filetram.com	70
filespar.com	66
Osce.com	65
bitshare.com	62
hotfile.com	60
netload.in	57
torrentroom.net	46
filesonicsearch.com	42
freefileforums.com	35
filefactory.com	34
rapidlibrary.com	34
turbobit.net	33
warez-bb.org	33
yourbittorrent.com	33
thathustle.com	32
lumfile.com	31
isohunt.com	30
movie4k.to	30
vk.com	30
freakshare.com	29
uploaded.net	29
bittorrent.am	28
forumwizard.net	27
fenopy.eu	26
megasearchupload.com	26
fileshut.com	25
piratebayalternative.me	25
tpb.ninja.so	25
tweax.nl	25
depositfiles.com	24
kat.ph	24

movie2k.to	24
piratebaysafe.me	24
tpb.alpha7f.com	24
180upload.com	23
kuiken.co	23
letitbit.net	23
limetorrents.com	23
pirati.rs	23
pobieramy24.pl	23
torrentz.eu	23
bt-chat.com	22
pirateproxy.net	22
1linkz.info	21
ks2.kaze.ch	21
piratebay.keep.se	21
torrentreactor.net	21
tpb.chezber.org	21
tpb.firstnetserv.co.uk	21
tpb.seysayux.net	21
fenopyproxy.co	20
tpb.hidde.se	20
tpb.mafia.so	20
hydra.beesybe.es	19
server-2.vincent-shorette.com	19
tpb.anonhi.de	19
tpb.noflag.org.uk	19
tpb.occupyuk.co.uk	19
tpb.piraten.lu	19
ahashare.com	18
ba-k.com	18
lanunbay.org	18
películaswarez.com	18
piratebaycopy.in	18
piratebayunblocked.me	18
tpb.andthenyoudie.fr	18
tpb.partipirate.org	18
7dayz.org	17
bayproxy.org	17
filejungle.com	17
labaia.ws	17
malaysiabay.org	17
piratebaymirror.me	17
piratebayredirect.so	17

tpb.dark-mirror.com	17
tpb.drumscum.be	17
novamov.com	16
piratebay.h4ck.la	16
piratesniper.net	16
thepiratebaymirror.tk	16
theproxybay.net	16
tpb.ezvpn.co.uk	16
tpb.jaygroves.co.uk	16
tpb.voxanon.org	16
0dayarchive.net	15
piratebay.me.uk	15
pirateshit.com	15
sumotorrent.com	15
tpb.par-anoia.net	15
anonymnet.org:81	14
newtorrents.info	14
pastebin.com	14
thepiratebay.se.coevoet.nl	14
torlock.com	14
tpb.5gg.biz	14
tpb.foileaks.org	14
tpb.k0nsl.org	14
91.121.194.115:82	13
btloft.com	13
downtr.co	13
final4ever.com	13
irc.hackervoice.co.uk:82	13
monova.org	13
picofiles.com	13
proxybay.net	13
tehparadox.com	13
torrentcrazy.com	13
torrentportal.com	13
torrzilla.com	13
tpb.usr.sh	13
tpbproxy.nl:81	13
btmon.com	12
discusioneze.com	12
ryushare.com	12
thepiratebay.se	12
tpb.evrl.com:8080	12
tpb.fast-hosting.net	12

2shared.com	11
bestrapidsharesearch.org	11
bts.ph	11
downocean.com	11
general-files.com	11
gratispeliculas.org	11
ineedfile2.com	11
jiwang.org	11
onlinepk.net	11
putlocker.com	11
sharpfile.com	11
torrentfunk.com	11
torrentjo.com	11
zimabdk.com	11
999torrents.com	10
alborotados.com	10
bitzone.eu	10
cucirca.com	10
dlto.be	10
downloading.ws	10
downturk.net	10
econo-soft14.org	10
extratorrent.com	10
filesdrop.com	10
fileshare.in.ua	10
fluket.com	10
freelibrty.com	10
frmpc.com	10
fulldivxm.com	10
gigdl.com	10
hotfilerock.org	10
ka.tt	10
mafia-bb.com	10
mez0.com	10
myvi.ru	10
releasethread.ws	10
sharingfiles.co	10
torcache.net	10
tormagic.org	10
torrentdownloads.be	10
torrentdownloads.net	10
torrentloft.com	10
torrentr.eu	10

torrents.thepiratebay.se	10
tunisia-forum.com	10
tv5-homeland.com	10
warezlobby.org	10
wupload.com	10
zdown.org	10
aodown.com	9
awesomedl.com	9
downarchive.com	9
filesocan.net	9
katzzz.com	9
kenitra.biz	9
shareflare.net	9
torrents.com	9
argentinawarez.com	8
asp-gfx11.org	8
btscene.org	8
downtt.com	8
egofiles.com	8
fastshare.cz	8
katmirror.com	8
kickass.to	8
movshare.net	8
torrentcrazy.in	8
torrents.net	8
w2.megarapid.net	8
downbyte.net	7
downze.net	7
nowvideo.eu	7
onlyonlinemovies.com	7
posteando.com	7
targame.com	7
torrentbit.net	7
torrenthound.com	7
warezshares.com	7
warezusa.org	7
4s.org	6
bxbr.net	6
crocko.com	6
downws.com	6
en.todoroms.com	6
fenopy.se	6
fileserv-movies.com	6

iuvip.com	6
majaa.net	6
uploaded.to	6
1channel.ch	5
download.cz.hellshare.com	5
expressshare.com	5
extratorrent.ee	5
postdaily.net	5
sharingforums.net	5
softsclub.com	5
torrentdownloads.me	5
tpb.ipredator.se	5
ulozto.net	5
300mblinks.com	4
all-shares.com	4
anydl.org	4
box.net	4
chomikuj.pl	4
derinport.in	4
downeu.net	4
download.191.vn	4
filedefend.com	4
filemix.eu	4
filesonic.com	4
forum.atlasmoon.com	4
forums.hotfilejungle.com	4
hackerz-bb.info	4
hq-scenes.com	4
linktury.com	4
nangchieucali.com	4
rapidfiledownload.com	4
rapidmoviez.com	4
softs5.net	4
szparka.net	4
thehotfilesearch.com	4
torrentpimp.com	4
torrentproject.com	4
ultramegabit.com	4
warezzers.com	4
watch-free-movie-online.net	4
1-link.org	3
amaderworld.com	3
astroddl.com	3

bayfiles.com	3
byhero.biz	3
conway-sports.com	3
dbbians.com	3
divxhanemiz.net	3
dlwarez.in	3
doridro.com	3
dr54.info	3
edisk.cz	3
elakiri.com	3
eztv.it	3
fazyforum.com	3
file7file.com	3
filepost.com	3
forum.artonad.com	3
forum.bestsoftfull.com	3
hdvietnam.com	3
masterentertainment.org	3
mechodownload.com	3
mydownload2u.org	3
peb.pl	3
rardl.com	3
rnbload.com	3
sharedir.com	3
telecharger-tout.com	3
thepiratebay.ee	3
tigerdl.com	3
torrentcrazy.ee	3
torrentz.cd	3
turktek.net	3
tv-release.net	3
warez-files.com	3
a7laqalb.com	2
allsoftmac.com	2
allulook4.com	2
alquz.com	2
animesnipe.com	2
apnatvforum.com	2
arntmkv.com	2
bollycorner.com	2
buscadorpeliculas.com	2
com2dl.com	2
community.warezme.org	2

crackerrevolution.com	2
d01.megashares.com	2
darkwarez.pl	2
desirewarez.pl	2
dirtywarez.com	2
divxsaati.com	2
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ACKNOWLEDGEMENTS

The ICSL receives funding from Westpac, IBM, the Australian Federal Police & Attorney General's Department. Study supported by MPA Canada and Cyber Inc.