CHILD SEXUAL ABUSE IMAGES

An Analysis of Websites by **cybertip!ca**®

November 2009

CANADIAN CENTRE *for*
CHILD PROTECTION™

Child Sexual Abuse Images
AN ANALYSIS OF WEBSITES BY CYBERTIP.CA

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ACRONYMS USED

3D (THREE-DIMENSIONAL): A way of simulating three dimensions in an image to make the subject appear more lifelike.

COPINE (COMBATING PAEDOPHILE INFORMATION NETWORKS IN EUROPE): The COPINE project, operated by the University College Cork in Ireland, has been researching child sexual abuse on the Internet since 1997. In 2008, its director, Ethel Quayle, moved to the University of Edinburgh and continues the research from there.

DVD (DIGITAL VERSATILE DISC): An optical digital disc used for video and data storage, especially high-resolution audio-visual material.

HTML (HYPERTEXT MARKUP LANGUAGE): The language most commonly used for webpages to describe the structure of text-based information.

IM (INSTANT MESSAGING): Real-time communication between two or more people through an electronic medium.

INHOPE (INTERNATIONAL ASSOCIATION OF INTERNET HOTLINES): INHOPE was founded in 1999 to represent Internet Hotlines (such as Cybertip.ca) all over the world and support them in their aim to respond to reports of illegal content.

IP ADDRESS (INTERNET PROTOCOL ADDRESS): A unique identifying number (also referred to as an IP) assigned to a computer(s) or other networked device(s).

ISP (INTERNET SERVICE PROVIDER): A company that provides access to the Internet.

NCECC (NATIONAL CHILD EXPLOITATION COORDINATION CENTRE): Operated by the RCMP, the law enforcement component of Canada's National Strategy to Protect Children from Sexual Exploitation on the Internet.

NCMEC (NATIONAL CENTER FOR MISSING AND EXPLOITED CHILDREN): Cybertip.ca's partner organization in the United States, operating CyberTipline.

P2P (PEER-TO-PEER): A network of two or more computers able to share files without the use of a server.

RCMP (ROYAL CANADIAN MOUNTED POLICE): The Canadian national police agency.

SHA-1 (SECURE HASH ALGORITHM): A mathematical function calculated based on the contents of a message.

SMR (SEXUAL MATURATION RATE): An estimate of a child's age range based on their physical and visible sexual development.

TLD (TOP LEVEL DOMAIN): The end of a domain name—everything after the last period.

  gTLD (GENERAL TOP LEVEL DOMAIN): TLDs with three or more characters, available to anyone for general purpose.

  ccTLD (COUNTRY CODE TOP LEVEL DOMAIN): TLDs based on two-character international country codes.

URL (UNIFORM RESOURCE LOCATOR): The address of a webpage or other Internet resource.

USB (UNIVERSAL SERIAL BUS): A way to connect external devices to computers. USB drives are mini storage devices commonly used to store, share, or back up computer files.

ACKNOWLEDGEMENTS

CANADIAN CENTRE *for* CHILD PROTECTION ™

THE CANADIAN CENTRE FOR CHILD PROTECTION is a national charitable organization dedicated to the personal safety of all children. Our goal is to reduce child victimization by providing programs and services to the Canadian public. Our mission is to:

▶ Reduce the incidence of missing and sexually exploited children

▶ Educate the public on child personal safety and sexual exploitation

▶ Assist in the location of missing children

▶ Advocate for and increase awareness about issues relating to child sexual exploitation

The Canadian Centre for Child Protection operates three core programs:

cybertip!ca®
WWW.CYBERTIP.CA

Canada's tipline for reporting online child sexual exploitation, in particular child pornography (child sexual abuse material), online luring, children exploited through prostitution, travelling sex offenders, and child trafficking.

kids in the know™
WWW.KIDSINTHEKNOW.CA

A safety education program designed to empower children and reduce their risk of victimization. The program focuses on building self-esteem by teaching critical problem-solving skills, and uses a community-based approach to heighten awareness of child safety and protection strategies. Kids in the Know includes a curriculum for teachers, as well as supplementary information on dealing with disclosure of abuse, training programs, books and puppets, games, and online activities for families.

COMMIT TO KIDS
WWW.COMMIT2KIDS.CA

A program to help child-serving organizations create safe environments for children. Commit to Kids provides strategies, policies, and step-by-step tools to help organizations reduce the risk of sexual abuse and protect children in their care.

Public awareness and education are integrated into all of the work we do. We also provide missing children services in Manitoba as Child Find Manitoba.

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cybertip!ca®
www.cybertip.ca

CYBERTIP.CA IS CANADA'S TIPLINE FOR REPORTING THE ONLINE SEXUAL EXPLOITATION OF CHILDREN. In particular, the tipline accepts reports relating to child sexual abuse material, online luring, children exploited through prostitution, travelling sex offenders, and child trafficking. Cybertip.ca was launched as a provincial pilot program in September 2002, and in May 2004, along with the RCMP's National Child Exploitation Coordination Centre, became part of the Government of Canada's National Strategy to Protect Children from Sexual Exploitation on the Internet.

In addition to accepting and forwarding child sexual exploitation reports, Cybertip.ca provides education and awareness material to help keep Canadians safe. Prevention material is developed in conjunction with public reports to the tipline and research on effective education strategies.

Cybertip.ca's mandate is to protect children from online sexual exploitation by:

▶ Receiving and analyzing tips from the public about potentially illegal material, as well as activities regarding the online sexual exploitation of children, and referring any relevant leads to the appropriate law enforcement agency.

▶ Providing the public with information and other resources, as well as support and referral services, to help Canadians keep themselves and their families safe while using the Internet.

Cybertip.ca contributes to public education and prevention through its online safety strategies and national awareness campaigns.

1 PURPOSE

This report provides an overview of the information received through reports to Cybertip.ca, with a particular focus on websites that host child sexual abuse images. An assessment of thousands of public reports submitted between September 26, 2002 and March 31, 2009 has enabled the tipline to share what it has learned about this issue. **Information is provided on the:**

▸ Types of websites that host child sexual abuse images

▸ Severity of abuse depicted in the images, as well as the age range and sex of the children

▸ Host country location of the websites and images

▸ Notable text features of the websites—alternative text, title tags, words on the page, and title bars

▸ Estimated timeframe in which the images were taken

▸ Commercial aspects of child sexual abuse and the sale of illegal images

▸ Cybertip.ca analysis process and general statistics on numbers and types of reports received by the tipline

This is the first in a series of reports that will be released by Cybertip.ca. Recommendations to stakeholders will be provided in this report as well as future research efforts. The information will be used to drive education and policy decisions.

This report focuses on tips submitted to Cybertip.ca involving **websites that host child sexual abuse images.**

2 EXECUTIVE SUMMARY

CHILD PORNOGRAPHY IS A PERMANENT RECORD OF THE SEXUAL ABUSE OF A CHILD. It can be an image, an audio recording, a video, a drawing, or a story about the sexual assault of a child. It is created deliberately and can be shared easily through the Internet, online platforms, and portable technology devices. Child sexual abuse is a crime and a significant problem that the public cannot ignore.

> 15,662 incidents relating to websites hosting child sexual abuse images and 4,110 unique images were assessed and described for this report.

This report provides an in-depth analysis of reports to Cybertip.ca, Canada's tipline for reporting child sexual exploitation. It focuses on child sexual abuse images on websites and provides an overview of the scope of the problem from the tipline's perspective. Of the 35,111 website incidents processed by Cybertip.ca, 15,662 involved sites hosting child pornography and were examined in this report. As a result of this analysis, this report also provides a series of recommendations for educators, policy makers, non-governmental organizations and other stakeholders working to reduce the online sexual abuse and exploitation of children. The twelve recommendations highlight potential improvements in the areas of education and public awareness, technical and policy development, and research opportunities.

Incidents: one public report may contain information about an email and a website. This would be considered two separate incidents, as they have to be analyzed independently. See page 79 for a more detailed explanation.

The results of this assessment provide some disturbing data on the issue of child abuse images. Most concerning is the severity of abuse depicted, with over 35% of all images showing serious sexual assaults. Combined with the age ranges of the children in the images, we see that children under 8 years old are most likely to be abused through sexual assaults. Even more alarming is the extreme sexual assaults which occur against children under 8 years old. These statistics challenge the misconception that child pornography consists largely of innocent or harmless nude photographs of children. Of particular note:

▸ **35.9%** of the images depicted sexual assaults against the child and **64.1%** depicted the children posed deliberately in a sexualized way.

▸ **77.6%** of webpages had at least one child abuse image of a child less than 8 years of age, with many showing infants or toddlers being assaulted. When the images were reviewed independently, **57.4%** depicted children under 8 years old and an additional **24.7%** depicted children between 8 and 12 years old.

▸ Images of children less than 8 years old most often depicted them being abused through sexual assaults **(37.2%)**. This is different than images of older children, which most often depicted the children posed nude or in a sexualized way.

▸ Children abused through extreme sexual assaults including bestiality, bondage, torture, and degrading acts such as defecation, mostly **(68.5%)** occurred against children under 8 years old.

▸ **83.0%** of the images were of girl children.

There appears to be a marketing component to many websites hosting child sexual abuse images. These site layouts are designed to focus on the images (39.5% thumbnail galleries, 19.7% portal pages, and 13.3% image hosting websites), and they generally (70.2%) focus on a variety of children. The messaging on these sites is overtly sexual in nature and promotes child sexual abuse. Some of the most observed words include "preteen" and "young." While we cannot include the most common phrases due to their graphic and searchable nature, an analysis of the alternative text (added intentionally to describe an image) revealed the words "lolita" and "free" over 4,000 times each. Typical examples of text used to describe images included "free rape," "nymphets land," "preteen lolita pics," and "free underage incest stories."

Special attention should be given to educating children 12 years and under on the subject of child sexual abuse. Emphasis needs to be placed on helping these young children recognize signs of abuse. Education in this area must be comprehensive, and provide children with both the skills and confidence to possibly disrupt and disclose abuse. Additionally, consideration should be given to the challenges of how to educate pre-school children on this sensitive subject matter.

An analysis of the alt text revealed the words **"lolita"** and **"free"** over 4,000 times each.

> The frequent use of legal adult pornography terminology ("hot videos," "sexy," "hardcore," "porn") and sexual marketing tactics are attempts to normalize the consumption of these child sexual abuse images.

It is not only the text on the page that appears to be marketed towards a broad audience; the text appeals to consumers with various deviant preferences. Most websites (70.2%) focused on multiple children rather than an individual child (29.8%), and had images of children of a variety of sexual maturation rates (58.6%). The number of images on the page ranged from 1 to 467 images, but pages tended to have between 20 and 30 images. This variation in the layout of child sexual abuse websites appears to also be true for commercial websites, which purportedly sell access to additional child abuse material. An examination of the 800 commercial websites reported to Cybertip.ca reveals that they tended to use one of three themes: innocence, adult sexuality and pornography, or darkness and depravity.

COMMON THEMES - COMMERCIAL WEBSITES	
INNOCENCE	Demonstrated with pastel or bright colours, toys, cartoon images and words like "angel," "innocent," "virgin," and "pure." These websites tend to have younger children, toddlers to elementary school age, and are associated with children's interests. If clothing is seen, it tends to be age-appropriate. Children tend to be posing and are less likely to be abused through sex acts.
ADULT SEXUALITY AND PORNOGRAPHY	Demonstrated with vivid colours, lewd language like "slut," "Lolita," "juicy," "tight," and "nymphet," and settings and clothing similar to what is seen in adult pornography. Clothing tends to be sexualized, with heavy make-up, lingerie and show-girl type costumes figuring prominently. These sites endeavour to portray the children as young, willing, and promiscuous. Posing is more overtly sexual, and the sites can also contain images of children being abused through sex acts.
DARKNESS AND DEPRAVITY	Uses a lot of black, grey, red, or camouflage patterns, and language like "dark desires," "pedophile," and "sick." These websites tend to have children abused through sex acts with each other or with adults. These sites may also depict extreme sexual abuse of toddlers and sometimes babies.

Since July 2007, Cybertip.ca has been tracking the payment types being advertised by commercial child sexual abuse websites. In that time, analysts noted 27 different payment types being accepted, most of which would be considered online payment systems. However, in 54.8% of instances, the websites still claimed to accept traditional credit cards for payment. The majority (85.1%) sold memberships, with recurring monthly payments ranging from $4 to $490 (average $53 per month). DVDs were also sold (5.8%) for as much as $1900, as were a variety of packages (4.7%), image sets (3.1%), videos (1.1%), and websites (0.2%). There is clearly a large consumer market for child sexual abuse images. The availability of commercial child sexual abuse websites underscores the market value and demand for this type of content.

50.2% of commercial child abuse websites purport to accept at least one form of traditional credit card payment.

Unfortunately, very few countries in the world can consider themselves exempt from the issue of online child sexual abuse. A review of the website and image host country(ies), based on a geographic IP lookup at the time of analysis, revealed that nearly 60 countries were hosting this type of content.

There are a number of technological challenges that exist in dealing with child sexual abuse images on the Internet. The reality is that illegal content is widely and publicly available and regularly moves in an effort to avoid being shut down. Constant movement and challenges in accurately identifying site operators require the need for additional solutions to better address this problem.

The majority (86.3%) of Canadian-hosted images are on one of five different host services.

Over a 48 hour period, Cybertip.ca observed one website cycle through 212 unique IP addresses, located in 16 different countries.

TABLE 2.1 Top 5 countries hosting websites with child sexual abuse images		TABLE 2.2 Top 5 countries hosting images of child sexual abuse		TABLE 2.3 Top 5 countries selling material on child sexual abuse websites	
12,696 website incidents		**4,110 unique images**		**800 commercial websites**	
1 United States	49.2%	1 United States	57.3%	1 United States	65.6%
2 Russia	20.4%	2 Canada	12.6%	2 Canada	8.7%
3 Canada	9.0%	3 Russia	7.5%	3 Russia	5.6%
4 Japan	4.3%	4 Netherlands	3.6%	4 Netherlands	2.9%
5 South Korea	3.6%	5 Spain	3.4%	5 Germany	1.8%

A review of the website and image host country(ies), based on a geographic IP lookup at the time of analysis, revealed that nearly **60 countries** were hosting this type of content.

This report highlights the seriousness of this issue while acknowledging that we still know very little about the child victims in the images that analysts see every day. While global efforts are being made to identify these children, the challenges to do so are immense. Like many other organizations working in this area, our agency is deeply concerned about the children abused within these images. Beyond the primary goal of removing children from abusive environments, there is much to be learned from identified children of sexual abuse imagery. This information is important as it would assist in providing better treatment, understanding the type and degree of harm, and knowing how best to support these victims through the criminal justice system.

This report provides numerous recommendations in all areas, including those related to Cybertip.ca operations, international collaboration, and research. One of the primary outcomes, however, is that education and public awareness need to be enhanced for all stakeholders in order to make a difference in fighting online child sexual abuse. This report is hopefully one small step toward increasing that awareness.

There is a need to coordinate with front-line professionals, such as those in child welfare, to assist in the early identification and removal of children from abusive environments.

3 CHILD SEXUAL ABUSE IMAGES

A NOTE ABOUT LANGUAGE: We recognize that the term "child pornography" may minimize the crime or give the impression that the children being abused are complicit in the abuse. As it is the term used in the Criminal Code (Canada), we will continue to use "child pornography" when it refers to Criminal Code (Canada) offences and analyst classifications based on the Criminal Code (Canada). The term "child sexual abuse images" more clearly describes the assaults taking place against children, and for the most part, will be used to describe illegal photographs depicting child sexual abuse.

3.1 Scope of the problem

Child pornography is child sexual abuse. It often involves real children, is deliberate, and rarely accidental. For it to be created, a child must be sexually abused or posed in a sexualized way. The image that is taken, especially if it is uploaded to the Internet, becomes a permanent record of the child's abuse, and can propagate indefinitely.

Accessing, creating, possessing, and distributing child pornography are not new crimes. Given the illegal nature of child sexual abuse images and society's indignation with the material, it is likely that it was historically created and kept solely by the creator or smaller groups of individuals. It is estimated that by 1977, 250 child pornography magazines were in circulation throughout the United States *(Wortley and Smallbone, 2006)*.

While the Internet did not create the problem of child pornography, its growing public accessibility in the 1990s escalated it. The Internet enabled the images to propagate internationally, perpetually, and relatively anonymously. It provided a forum to share and trade illegal images, making child sexual abuse more visible to the public and drawing attention to the issue. People still keep collections of child sexual abuse images in their homes; however, there are now also images stored in computer folders, on websites, in emails, on file trading systems, and on portable devices such as USB drives, cell phones, and music players. Child sexual abuse images are now easy to create, store, replicate, and share with very little monetary cost.

This report focuses only on the images that were observed on websites, not the other material that would be defined legally as child pornography.

Technology and the Internet changed child sexual abuse by enabling the images to be:

▸ Distributed widely to large audiences around the world

▸ Accessed simply, without requiring the use of physical mail or hand-delivery

▸ Taken with higher-quality, less-expensive, and more portable cameras

▸ Transported easily with the use of laptops, USB drives, cell phones, and other small storage devices

▸ Taken with devices other than traditional cameras, such as webcams, portable video cameras, cell phones, and cameras built-in to computers

▸ Accessed and distributed in a way that appears private and anonymous

▸ Altered simply and quickly with image-editing programs

▸ Reproduced endlessly

▸ Broadcast live, as the abuse is taking place

▸ Available to those who have not (or have not yet) committed a contact sexual offence against a child

▸ Used as a networking or trading tool among offenders

▸ Replaced or moved if the website or other Internet platforms are shut down or otherwise blocked

▸ Encrypted, password-protected, or otherwise hidden

▸ Created virtually

THE CRIMINAL CODE OF CANADA DEFINES "CHILD PORNOGRAPHY" AS:

a. a photographic, film, video or other visual representation, whether or not it was made by electronic or mechanical means,

    i. that shows a person who is or is depicted as being under the age of eighteen years and is engaged in or is depicted as engaged in explicit sexual activity, or

    ii. the dominant characteristic of which is the depiction, for a sexual purpose, of a sexual organ or the anal region of a person under the age of eighteen years

b. any written material, visual representation or audio recording that advocates or counsels sexual activity with a person under the age of eighteen years that would be an offence under this [Criminal Code (Canada)] Act

c. any written material whose dominant characteristic is the description, for a sexual purpose, of sexual activity with a person under the age of eighteen years that would be an offence under this [Criminal Code (Canada)] Act

d. any audio recording that has as its dominant characteristic the description, presentation or representation, for a sexual purpose, of sexual activity with a person under the age of eighteen years that would be an offence under this [Criminal Code (Canada)] Act.

The increasing popularity of portable devices like cellular telephones and music players has made it easy for anyone to quickly move images from one location to another. Images can easily and instantly be taken with the cameras that are built-in to most new cell phones. Their small size also makes it possible to take someone's photograph without her/his knowledge.

> The Canadian definition of child pornography includes images of child sexual abuse, as well as other recordings (video, film, etc.), and written and audio material. This makes it one of the broadest definitions in the world. Cybertip.ca forwards all information that would potentially constitute child pornography under Canadian legislation; however, this report just focuses on images.

Determining the extent of child sexual abuse on the Internet is difficult, as it is impossible to verify the number of websites and other platforms that distribute this type of content. The fact that these websites do not always remain online, or in the same location for long periods of time, further complicates estimates. Despite this, numerous studies point to the fact that it is a significant and increasing problem:

▸ An Interpol database of child abuse images contains more than 520,000 illegal photographs (*Elliott and Beech, 2009*).

▸ A 2002 report by ECPAT International and the Bangkok Post estimated that 100,000 child pornography websites existed on the Internet in 2001. In 2003, the National Criminal Intelligence Service in the U.K. estimated that child pornography websites had doubled worldwide (*National Center for Missing and Exploited Children, 2005*).

▸ Since 1997, the number of child pornography images on the Internet is estimated to have increased by 1,500% (*National Center for Missing and Exploited Children, 2005*).

▸ The Internet Filter Learning Center has indicated that there are 100,000 websites offering illegal child pornography and 116,000 daily Gnutella "child pornography" requests. "Teen porn" is in the top 20 of adult search requests (*Ropelato, 2007*).

▸ In the UK, an ISP blocked more than 20,000 daily attempts to access child pornography. In Norway, the estimate was 15,000–18,000 daily attempts (*Quayle et al., 2008*).

AN INTERPOL DATABASE OF CHILD ABUSE IMAGES CONTAINS **MORE THAN 520,000 ILLEGAL PHOTOGRAPHS.**

3.2 Online child pornography and sexual offences against children

Although there is no conclusive evidence or agreement that demonstrates an explicit connection between viewing child pornography and the commission of sexual offences against children, a number of studies illustrate that there may be a correlation:

▸ In a 2000 study that followed treatment of 155 offenders convicted of child pornography-related crimes, 85% admitted to hands-on sexual offences. The offenders admitted to an average of 13.6 victims each (*Bourkey and Hernandez, 2008*).

▸ Of 1,400 cases of reported child molestation in Louisville, KT, between 1980 and 1984, pornography was connected with every incident and child pornography was used in the majority of cases (*Rabun, 1984*).

▸ According to researchers at the FBI Behavioural Science Unit, preferential child molesters "almost always" collect child pornography and/or child erotica (*Lanning, 1992*).

▸ In a United States Postal Inspection Service study, 80% of purchasers of child pornography were active abusers (*Kim, 2004*).

▸ In the course of investigating 1,713 offenders of child pornography possession in the United States, 40% revealed that they had also committed a child sexual victimization offence. An additional 15% of offenders both possessed child pornography and attempted to sexually victimize children (*Wolak, Finkelhor and Mitchell, 2005*).

▸ Approximately 15% of online offenders had prior contact offences based on official records, compared to 56% based on self-reporting. This suggests that a significant portion, but not all, of online sex offenders commit hands-on offences in addition to Internet offences (*Hanson and Babchishin, 2009*).

Methodological concerns have been noted with such studies. Additionally, some have contradicted these types of findings by demonstrating only a small connection between general pornography and child victimization (*Finkelhor and Ormrod, 2004*). However, while it cannot be stated with certainty that child pornography leads to offences against children, the possibility that someone who accesses or possesses child sexual abuse images may progress towards (or may already have) committing a sexual offence is of significant concern. Individuals who work in the areas of law enforcement, justice, and child protection need to remain cognizant of this possible relationship.

In child pornography cases where the child was identified, it was found that 35% of abusers were the child's relative (26% of whom were a parent). In the majority (78%) of cases, the abuser was known to the child (e.g. as a family friend, neighbour, coach) and had legitimate and prolonged access to the child (National Center for Missing and Exploited Children, 2009).

This data represents the known relationship from 1,612 series of child abuse images (2,352 identified victims).

> Child protection is of the utmost importance given that those who produce child sexual abuse images are generally adults who care for, or have regular access to, a child. A lack of contact with a child is probably the most significant factor limiting the production of child pornography (Taylor and Quayle, 2002), making opportunity a central factor in this crime.

The need to acquire new images may result in collectors sharing images with other traders. This may then result in viewers engaging in contact offences against children to create new material. Beyond the normalization of the deviant behaviour, these trading networks provide acceptance, belonging, and a hierarchical culture that promotes this harmful behaviour (*Taylor and Quayle, 2002*).

With the propagation of child abuse images on the Internet, there is also concern about fantasy becoming reality; watching a sexual assault may normalize the behaviour and encourage a viewer to subsequently commit such an assault. The longer sexual fantasies are maintained and elaborated, the more likely it is that the behaviour will be demonstrated in real-life. Fantasy can act as a motivator and an opportunity to rehearse behaviour, as well as provide a way to overcome inhibitions (*Burke, Sowerbutts, Blundell and Sherry, 2002*). Additionally, the capacity of pictures to generate arousal appears to diminish over time through habituation. This results in the continued demand for new material, and the continued abuse of children (*Taylor, 2002*). Finally, pictures may facilitate contact offences with other children by desensitizing the children (grooming) or by providing ideas of what may be done to abuse children (*Taylor and Quayle, 2002*).

CASE EXAMPLE

Cybertip.ca received an anonymous report about a suspect who was posting and distributing child pornography images and videos. A review by Cybertip.ca analysts revealed that the suspect was abusing two children aged one and four. Through international collaboration with Interpol, the NCECC, the Sûreté du Québec, and the Toronto Police Service, a 32-year-old male was arrested and charged with multiple counts including sexual assault and possession and distribution of child pornography. Two young children were removed from the abusive environment.

None of this accounts for the ongoing victimization that is caused to the child every time an image is viewed. The "simple" accessing of these images of child sexual abuse should be recognized as further and ongoing abuse to the child.

Given the complex and illegal nature of child sexual abuse, it is very difficult to assess how the Internet has impacted child victims, offenders, and the general public. Further research is needed in this area to determine the scope of the problem, and what solutions will be most effective in reducing the distribution and propagation of child sexual abuse images.

Accessing child sexual abuse images should be seen as a crime that re-victimizes the child every time the image is viewed. The impact on the child whose abuse image has been shared online is significant and ongoing.
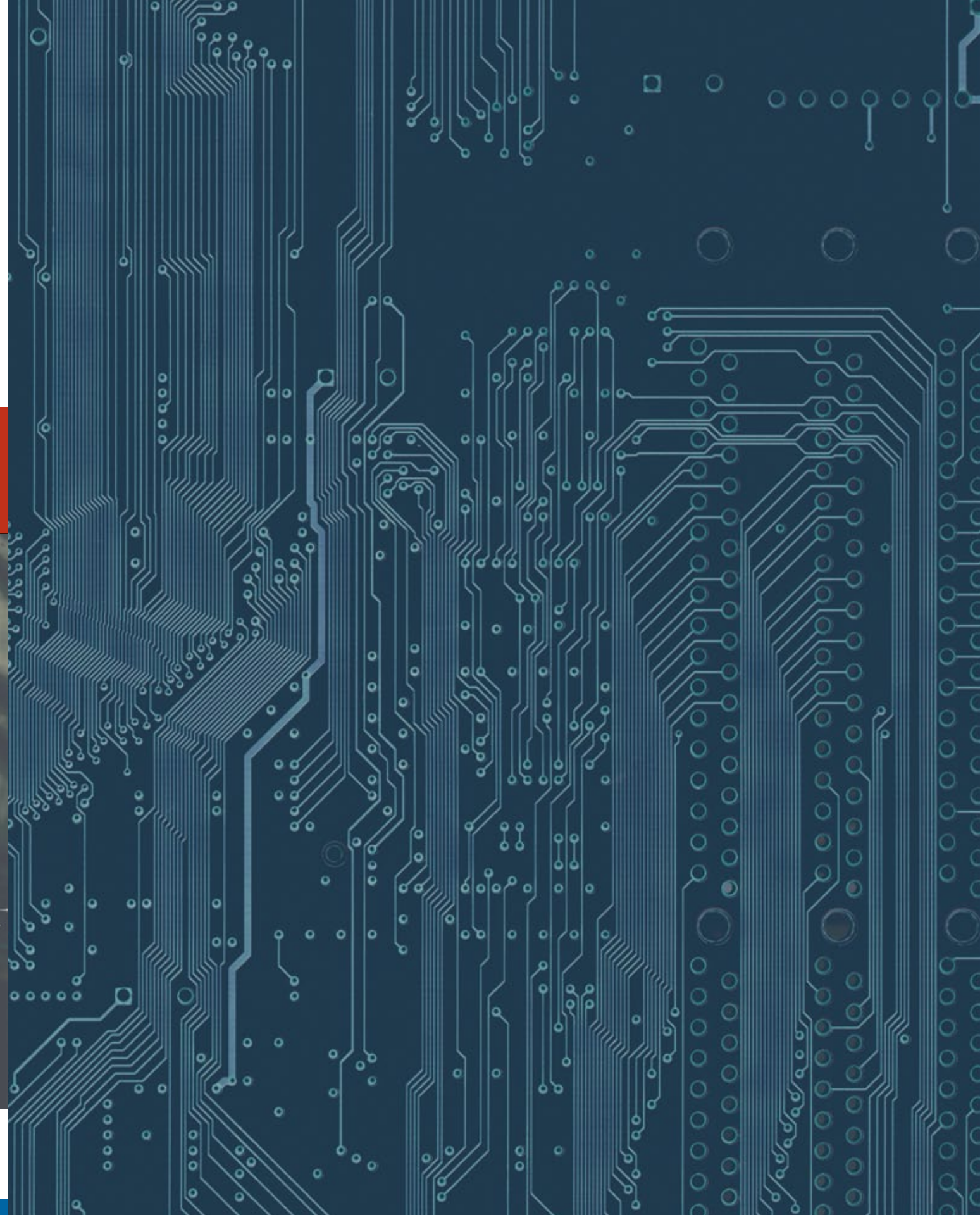
4 METHODOLOGY AND DEFINITIONS

Given the illegal and often secretive nature of online child sexual exploitation, very little information exists regarding the severity of the problem in Canada. However, as Canada's tipline for reporting child sexual exploitation, Cybertip.ca generates invaluable and unique statistics. Since its launch, the tipline has received over 30,300 voluntary reports from the public, all of which are retained by Cybertip.ca in a secure database. This comprehensive collection of information provides unique data on the scope of the problem in Canada.

This report provides an in-depth look at the reports—particularly websites hosting child sexual abuse images—received by Cybertip.ca from its launch on September 26, 2002[1] until March 31, 2009. The process involved a review of the database; all fields in the online report form were available for analysis, as well as numerous fields that are tracked internally by analysts. Methods included:

▶ Reviewing Cybertip.ca reports manually.

▶ Speaking to analysts to obtain empirical evidence and discuss observed trends.

▶ Querying the database to run frequencies and collate information.

▶ Writing scripts to parse information. These are instructions that allow a separation and extraction of relevant data from the database in categorical fields, as well as text from HTML snapshots.[2]

▶ Using commercially and publicly available database tools such as MaxMind geoIP for real-time geographic location lookups and WHOIS for domain/network registry information.

Over 30,300 voluntary public reports were submitted to Cybertip.ca between September 26, 2002 and March 31, 2009.

The Cybertip.ca database is redefined and upgraded on an ongoing basis; as new trends are identified, classifications are expanded or changed. On April 14, 2008, a major redesign of the database was launched. This new system, which automates a number of analyst tasks, also simplifies modifications to the database. This means that since April 2008, the number of fields being tracked by Cybertip.ca has increased significantly. As a result of these ongoing improvements, total numbers, as well as the time periods in which items were analyzed, may vary.

Consequently, in some instances, sample sizes may be small. In these instances, we do not intend for the results to show statistical validity, but rather possible patterns and trends in need of further inquiry. These fields will be followed closely over the upcoming years to watch for changing trends and create more robust data.

INITIAL RESEARCH QUESTIONS

1   How many websites hosting child abuse material have been reported to Cybertip.ca and what do these websites look like?

2   What is the age of victims on websites hosting child sexual abuse images and are they more likely to be images of girl or boy children?

3   What is the degree of abuse being depicted against the child, as assessed by the analyst image severity classification?

4   Can we track the geographic location of websites, including where illegal content is most likely to be hosted and how it moves between locations?

5   What can we learn about child sexual abuse by looking at the content of websites that host images (layout, text, content, title bars, etc.)?

6   Is there a difference between commercial child abuse websites and those that are available free of charge?

In some instances, sample sizes may be small. In these instances, we do not intend for the results to show statistical validity, but rather possible patterns and trends in need of further inquiry.

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1   Cybertip.ca launched as a provincial pilot program in Manitoba in September 2002. The tipline operated as such until May 2004, when the Government of Canada announced that Cybertip.ca was Canada's National Tipline. A public launch event was held in January 2005 and was followed by pan-Canadian public awareness initiatives.

2   Cybertip.ca does not store images of child sexual abuse.

4.2 Limitations

This report is limited to the information received and analyzed by the tipline. Content analysts only review and assess material that is submitted by the public; they do not actively search out content or investigate beyond what is reported. With respect to websites, it is Cybertip.ca's policy to visit the exact Uniform Resource Locator (URL) provided by the reporting person. If that URL does not contain material in contravention of the Criminal Code (Canada), analysts will click on a maximum of two additional links if available. Analysts stop their research when they encounter a first page that contains child abuse material, and forward that information to law enforcement.

Additionally, while we have no way of knowing for certain, it is possible that what is reported to Cybertip.ca is not as severe as the worst material available due to the fact that it is reported by people who come across it accidentally. Due to its illegal nature, the most severe material may be hosted in locations that are more secure or hidden, or that require individuals to commit a child abuse-related offence to gain access to the online location (e.g. sending an illegal image to receive a password). Online communities focused on child sexual abuse have been shown to not only allow trading of illegal material, but may also encourage mental distortions or provide social validation or support for offenders (*Ellerby, 2008*).

Policy considerations:

▶ Analysts do not save or otherwise store images, videos, or other child pornography material. There is no opportunity to go back and review or further analyze material that has been removed from its original location or upon law enforcement request.

▶ Analysts do not actively download, even temporarily, files containing potentially illegal material unless the file is automatically rendered in a browser window. Consequently, they may not always review the most severe content. Additionally, files shared through peer-to-peer or BitTorrent programs are never downloaded for analysis.

▶ Analysts do not purchase memberships or other material from commercial child pornography websites, which often claim to provide access to more egregious material.

See the **Image Selection and Analysis** section on page 32 for more information on how images are chosen for analysis.

> Analysts do not save or otherwise store images, videos, or other child sexual abuse material.

Image assessment considerations:

▶ When selecting images to assess, analysts first choose the image that depicts the most severe abuse against the youngest child.

▶ Child pornography websites can contain hundreds of unique images. However, given time and resource constraints, analysts describe approximately two potentially illegal images on each page. While they tend to choose images that have not been seen previously, during busy periods, analysts may opt to assess a known image rather than analyzing a new one to ensure rapid and timely forwarding of potentially illegal reports.

Technical considerations:

▶ The public may report URLs that are password-protected, or otherwise inaccessible. These are forwarded to law enforcement but were not analyzed for the purposes of this report.

▶ Assessment only occurs at a particular time, when the analyst accesses the reported URL. We recognize that content on a child pornography website can change regularly; however, that fluidity is not tracked by Cybertip.ca.

▶ Similarly, the host country(ies) of images and websites is recorded at the time of analysis. Movement is not tracked.

▶ It is possible that websites hosting child sexual abuse images are masking their host locations, using anonymous proxies, or hi-jacking servers. We have no way of knowing or tracking this.

Other considerations:

▶ The dynamic and responsive nature of Cybertip.ca's data collection means that changes are continuously being made to the database, making it difficult to make comparisons or follow trends in certain areas.

▶ Numerous technical solutions have been put in place to ensure analyst accuracy (data import instead of data entry, lookup tables, data entry constraints, etc.); however, this does not eliminate the possibility of human error.

▶ Due to rounding errors, totals may not add up to exactly 100%.

> Numerous technical solutions have been put in place to ensure Cybertip.ca analyst accuracy: data import instead of data entry, lookup tables, data entry constraints, etc.

4.3 Image classification—age range and severity of the abuse

Age Range

To determine the age range of a child in a sexual abuse image, the analyst considers the child's genital development, breast development (if female), and stature. The child's age range is then **estimated** based on a sexual maturation rating (SMR) system, as defined in *Medical Analysis of Child Pornography* (Cooper, 2005). This system is adapted from the Tanner Stages, but considers the fact that analysts are looking at images (and not conducting a medical exam).

The estimate of the child's SMR is based on physical development in comparison to data on the median age of each stage of development:

▸ SMR 1 is roughly equivalent to children 0 (zero) to 8 years of age.

▸ SMR 2 is roughly equivalent to children 8-11 years of age.

▸ SMR 3 is roughly equivalent to 11-12 years of age for girls and 12-14 years of age for boys.

▸ SMR 4 is roughly equivalent to 12-16 years of age for girls and 14-15 years of age for boys.

▸ Entry into SMR 5 occurs at 16-17 years of age for girls and 15-16 years of age for boys.

The cycle of puberty requires five to six years for completion. This means that if a child in an image has not reached complete adult sexual maturation, we can confirm that they are "almost certainly younger than 18 years old" (Cooper, 2005). If analysts are undecided about the child's SMR, they err on the side of caution and choose the higher SMR.

A child's age range is **estimated** based on a 5-stage sexual maturation rating (SMR) system, as defined in *Medical Analysis of Child Pornography.*

ANALYSTS CLASSIFY IMAGES OF **CONFIRMED CHILD PORNOGRAPHY** BASED ON THE CHILD'S AGE RANGE, SEX, AND THE SEVERITY OF THE ABUSE BEING PERPETRATED AGAINST HER/HIM.

Severity of the abuse

Analysts classify the severity of child abuse images based on research by the COPINE (Combatting Paedophile Information Networks in Europe)[3] project. COPINE defines ten levels of images attractive to adults with a sexual interest in children.

COPINE TYPOLOGY OF ABUSIVE IMAGES:

10 **SADISTIC/BESTIALITY:** sexual images involving pain or animals

9 **GROSS ASSAULT:** penetrative assault involving adult

8 **ASSAULT:** involving adult

7 **EXPLICIT SEXUAL ACTIVITY:** not involving adult

6 **EXPLICIT EROTIC POSING:** emphasis on genital area

5 **EROTIC POSING:** deliberate sexual provocative posing

4 **POSING:** deliberate posing suggesting sexual content

3 **EROTICA:** surreptitious images showing underwear/nakedness

2 **NUDIST:** naked or semi-naked children in legitimate settings

1 **INDICATIVE:** non-erotic/non-sexualized images

These ten COPINE classifications were further clarified by the Manitoba Integrated Child Exploitation Unit[4] based on their standards of categorizing child pornography and further reduced to four classifications used by Cybertip.ca analysts:

Cybertip.ca image severity classification	Cybertip.ca definition	Equivalent COPINE level(s)[5]
4 Extreme sexual assaults	This includes images of children abused through extreme sex acts that demonstrate sadism and violence on the part of the offender. This most severe classification could involve: · Bestiality · Bondage · Torture · Weapons[6]	10

3 Sexual assaults	Sexual assault includes images of children abused through all sex acts, ranging from masturbation to acts including other children and/or adults. For example, the children may be:
	· Forced to masturbate, sometimes with objects
	· Forced to perform sex acts with other children
	  · Mutual masturbation, sometimes with objects
	  · Abuse one another, sometimes with objects
	  · Oral-genital contact
	  · Penetrative sex in the vagina or anus
	· Abused through adult-child sex acts
	  · Masturbation, sometimes with objects
	  · Molestation or fondling, sometimes with objects
	  · Oral-genital sex
	  · Penetration of the vagina or anus, sometimes with objects
		7 – 9

2 Extreme sexual posing	Extreme sexual posing includes images of children where the primary focus is on their genitalia. The camera is aimed such that the genitals are the main focus of the image and/or there is manipulation of the buttocks or legs, exposing the anus or genitalia. Common examples include: · Close up shots, showing only the child's genitals · Child seated with legs spread, opening genitals or anus with hands · Child laying on back with camera aimed between their legs · Child laying on front with camera aimed between their legs	6
1 Sexual posing	Sexual posing includes images of children forced to pose nude or partially nude with their sexual organs exposed. The children might be posed in a sexualized way, such that they are displaying or emphasizing their genital region, but the genitals are not the focal point of the image. Common examples include: · Children standing in upright casual positions without clothing with the genitals exposed or partially exposed · Children in gymnastic or dance-type poses that expose the genitalia · Children posing with buttocks towards camera, legs spread, back arched and torso bent forward such that the genitalia is visible but not the focus of the image This may also include images taken without any direct contact between the child and offender.	3 - 5

5 WEBSITES HOSTING CHILD SEXUAL ABUSE IMAGES

Over 30,300 reports have been submitted by the public to Cybertip.ca between September 26, 2002 and March 31, 2009. When assessing the information, analysts break a report into component parts based upon the number of technology types. For example, one public report may contain information about an email and a website. This would be considered two separate incidents, as they have to be analyzed independently. Of the 35,111 website incidents processed by Cybertip.ca, 15,662 involving sites hosting child pornography were assessed for this report. Additionally, 4,110 child sexual abuse images associated to those websites were evaluated.

5.1 Website types

Table 5.1 shows the classification of all the website incidents (35,111) analyzed by Cybertip.ca.

This breakdown of technology types is not surprising given that a 2005 survey found that Canadian adults' online activities included email (91%) and general browsing (84%) (Statistics Canada, 2005). Inadvertent access to child sexual abuse material is more likely to occur through websites than when receiving email from known sources. The vast majority of email reports relate to spam, which Canadians are increasingly blocking or filtering. Since analysts do not download potentially illegal files, a P2P report would most often be considered child pornography (unconfirmed) as the content cannot be confirmed or verified.

TABLE 5.1 Types of website incidents

Child pornography	44.6% (15,662)
Adult content, nudity, and offensive material	19.3% (6,782)
Unable to access	17.2% (6,037)
Exploitative child modelling, child sexual molestation, and pedophile activity	7.2% (2,538)
Child pornography (unconfirmed)	5.8% (2,023)
Outside mandate	5.5% (1,929)
Luring	0.4% (124)
Child prostitution	0.0% (10)
Child sex tourism	0.0% (5)
Child trafficking	0.0% (1)
TOTAL	**35,111**

The public classified 89.6% of website reports as child pornography; however, based on analyst assessment and research, only 44.6% (15,662) were determined to be confirmed child pornography (88.5% of which are confirmed child pornography, while the remaining 4.2% are sub-classified as making child pornography available).[7] An additional 5.8% (2,023) were classified as unconfirmed child pornography.[8]

Websites constitute 88% (15,662 out of 17,806) of all confirmed child pornography incidents and are further broken down into the particular kind of website (see table below).

44.6% of all website incidents analyzed by Cybertip.ca pertain to child pornography.

TABLE 5.2 Confirmed child pornography incidents broken down by website type

Website type	Number of websites since consistent classification began in April 2008	Number of websites since classification began in September 2002	Date "type" was added
Thumbnail gallery	1,233 (39.5%)	1,233 (9.7%)	14-Apr-08
Portal	616 (19.7%)	616 (4.9%)	14-Apr-08
Image hosting	414 (13.3%)	414 (3.3%)	14-Apr-08
Commercial	393 (12.6%)	800 (6.3%)	9-Jul-07
Forum	198 (6.3%)	1,352 (10.6%)	26-Sep-02
Video hosting	66 (2.1%)	66 (2.1%)	14-Apr-08
Social networking	54 (1.7%)	54 (0.4%)	14-Apr-08
Unclassified[9]	25 (0.8%)	8,015 (63.1%)	26-Sep-02
Filesharing website	25 (0.8%)	48 (0.4%)	26-Sep-02
Redirect	25 (0.8%)	25 (0.2%)	14-Apr-08
Directory listing	24 (0.8%)	24 (0.2%)	14-Apr-08
Blog	17 (0.5%)	17 (0.1%)	14-Apr-08
Parent frame	17 (0.5%)	17 (0.1%)	14-Apr-08
Search engine/results	10 (0.3%)	10 (0.1%)	14-Apr-08
Gaming site	2 (0.1%)	2 (0.0%)	14-Apr-08
Education	2 (0.1%)	2 (0.0%)	14-Apr-08
Newsreader	1 (0.0%)	1 (0.0%)	14-Apr-08
Sub-Total	3,122	12,696	
Image Path[10]		2,966	
TOTAL		**15,662**	

7 **Making child pornography available** refers to a website that is hosting images from another server and/or automatically re-directing to another website hosting child pornography. It also includes websites that provide links to pages with child pornography. It is a new classification as of April 14, 2008. Before that time, these websites would have been classified as **confirmed child pornography**.

8 **Unconfirmed child pornography** refers to incidents where the analyst is unable to determine or confirm the SMR of the individual in the material, but believes it to be potentially illegal. For example, this classification would apply if the image appears to be of an underage individual, but it is difficult to analyze because of the quality of the image or the position the individual is in. These incidents are forwarded to law enforcement, but have been excluded from this report due to a lack of image information.

9 **Unclassified** refers to a website that is not further distinguished by type. **Forum** and **filesharing** were separate classifications until April 14, 2008, at which point they were moved to sub-classifications of **website.**

10 Cybertip.ca analysts will assign a website type of "Image Path" to images that are not located on the same server as the analyzed website. This is done to accurately reflect the countries that are hosting child pornography.

THUMBNAIL GALLERY

IMAGE HOSTING

Image on PC → Uploaded image can be shared

PORTAL
1 Banner link
2 Banner link
3 Banner link

COMMERCIAL
Subscription fee: $___

FORUM
Discussions | Replies
Topic of discussion | 130
Topic of discussion | 14
Topic of discussion | 25
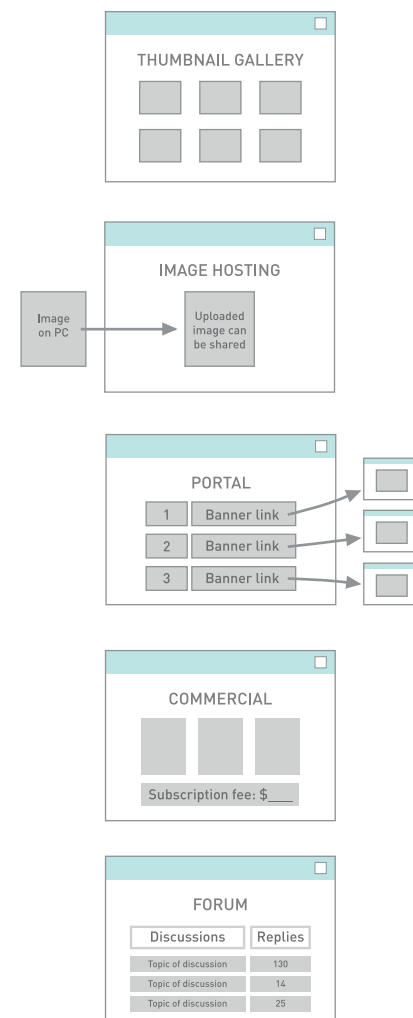
5.2 Image selection and analysis

Once a website is determined to contain child sexual abuse images, Cybertip.ca analysts review and provide a text description of an average of two illegal images on every page. The written description includes information about the child, the offender or other individuals in the image, the positioning of the individuals and/or the abuse depicted in the image, and the surroundings. Details that may assist in victim identification are also included. Finally, the child's sexual maturation is described.

There is no typical setting used for the creation of child abuse images. However, analysts commonly see images that appear to have been taken in home settings (amateur shots), such as computer rooms, bathrooms, family rooms, and bedrooms. Also commonly seen are what appear to be images taken in outdoor settings or in front of a draped cloth or painted background, disguising the actual location. Less often, images are seen that appear to have been taken in public settings, such as a classroom or gymnasium.

In July 2007, analysts began categorically recording for one image on each webpage:

▶ Severity of the image (degree of abuse against the child)

▶ SMR of the child in the image (age range of the child)

▶ Sex of the child in the image

▶ Hash value of the image

In April 2008, the database was updated to allow analysts to categorically record the same for two previously-unassessed images on a webpage. Images that have previously been analyzed are flagged in the database, so that analysts do not need to re-assess them.[11] This ensures that new images are forwarded for possible investigation, prevents analysts from having to describe the same image multiple times, and reduces the child's ongoing victimization by having their images re-viewed.

> It is not possible for analysts to assess all images on a child pornography website. An average of two images are described and associated with every potentially illegal incident.

While images are selected based on a pre-determined criteria, there is some degree of randomness as image selection depends on the individual analyst completing the description. This process only provides a snapshot of the scope of the problem.

IMAGE SELECTION CRITERIA

Images are selected for analysis based on the following criteria:

1   The image depicting the most severe abuse against a child is selected for description first.

2   If there is more than one image with equal severity, the image depicting the child with the lowest SMR is chosen.

3   If there is more than one image with equal severity and SMR, the image that most clearly displays sexual maturation characteristics is chosen. Factors such as the size, clarity, and focus can influence which image is selected for description.

4   A second image is chosen, most often depicting the youngest child or the second most severe image on the page.[12]

A concerning aspect of child sexual abuse images online is that the images are shared and proliferated indefinitely. It is common for analysts to recognize the same children in a variety of images on various websites.

On webpages depicting both girl and boy children, images of girl children are more likely to be chosen for analysis because it is generally easier to determine their age range. Primarily, this is due to the fact that girls have two areas on their bodies that provide indicators of sexual development, making it easier to determine their SMR. Also, the nature of the acts that are inflicted upon boys are more likely to conceal their genital region. Regardless of which image is selected for analysis, images of girls remain significantly more prevalent than images of boys.

Finally, while almost all images depict real children, analysts occasionally come across images that depict drawings of children being sexually abused. While these still constitute a Criminal Code (Canada) offence, analysts first choose images depicting real children for description.

> Analysts often recognize the same image or the same child on multiple websites, reported on different occasions. This demonstrates how images can be shared, copied, and distributed on the Internet.

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11   If the database recognizes a hash value of a particular image, that image is blocked from the analysts' view with the use of a marker. Information about the image (as previously described by an analyst) is provided for reference, but by default the image is not visible.

12   Consistency in the selection of the second images was not clarified until September 2008, when it was determined that the second image chosen would always reflect the youngest child on the page, regardless of the severity of abuse depicted in the image. For the scope of this report, it can be assumed that there were no reliable criteria for selecting the second image.

5.3 Child sexual abuse images described by Cybertip.ca

Although analysts have been providing written descriptions of images since September 2002, categorical assessments of image severity, SMR, and sex have only been conducted since July 2007. In total, the Cybertip.ca database has categorical assessments of 7,448 child sexual abuse images, of which 4,110 (54.9%) are unique images based on their SHA-1 value. The following section describes the **4,110 unique images.**

Severity of abuse against the child

2.7% (111) SEVERITY 4 (EXTREME SEXUAL ASSAULTS): Images of children abused through extreme sex acts that demonstrate sadism and violence on the part of the offender. This most severe classification includes bestiality, bondage, torture, or weapons.

33.2% (1,365) SEVERITY 3 (SEXUAL ASSAULTS): Images of children abused through all sex acts, ranging from masturbation to sexual assault including other children and/or adults. The children may be forced to masturbate, forced to perform sex acts with other children, or abused through sexual assaults by adults.

28.4% (1,168) SEVERITY 2 (EXTREME SEXUAL POSING): Images of children where the primary focus is on their genitalia. The camera is aimed such that the genitals are the main focus of the image and/or there is manipulation of the buttocks or legs, exposing the anus or genitalia.

35.7% (1,466) SEVERITY 1 (SEXUAL POSING): Images of children forced to pose nude or partially nude with their sexual organs exposed. The children might be posed in a sexualized way, such that they are displaying or emphasizing their genital region, but the genitals are not the focal point of the image. This also includes images taken without direct contact between the child and the offender (i.e. in a change room).

> **35.9% of images depict sexual assaults against children – sexual acts with other children or adults, sadism, bondage, bestiality, etc.**

35.9% of images depict sexual assaults against children—sexual acts with other children or adults, sadism, bondage, bestiality, etc.

Mean=2.0

Std. Dev. = 0.898

● Sexual Posing (35.7%)
● Extreme Sexual Posing (28.4%)
● Sexual Assaults (33.2%)
● Extreme Sexual Assaults (2.7%)
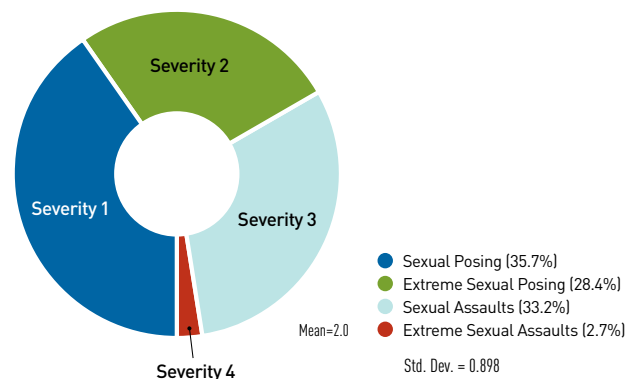
Figure 5.1: Severity of abuse depicted in 4,110 unique child sexual abuse images

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The damage inflicted by child sexual abuse on the self-image of a child can be severe. Analysts have indicated that when considering all images reviewed by Cybertip.ca since 2002, the severity of the abuse and the level of objectification and dehumanization appears to be increasing in the images. For example, analysts have more recently noted images of children with demeaning words or phrases written on their bodies. Also, children are sometimes seen holding signs with messages greeting individuals by their online pseudonyms or praising their abusers.

Approximate age of child in the image

▸ **57.4% (2,359) SMR 1:** under 8 years old

▸ **24.7% (1,017) SMR 2:** between 8 and 11 years old

▸ **13.3% (547) SMR 3:** 11-12 years old for girls, 12-14 years old for boys

▸ **4.3% (175) SMR 4:** 12-16 years old for girls, 14-15 years old for boys

▸ **0.3% (12) SMR 5:** 16-17 years old for girls and 15-16 years old for boys

> **82.1% of children in the images are estimated to be younger than 12 years old.**
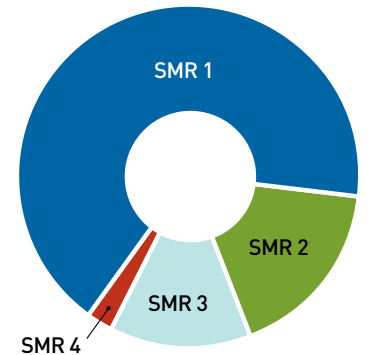
Std. Dev. = 0.782

Figure 5.2: Approximate age range of the children in the sexual abuse images based on their sexual maturation rate

① **RECOMMENDATION:** With the majority of child sexual abuse images depicting children 12 years old and under, sexual abuse education is critical for this age group. Education should be provided to help these young children recognize signs of the abuse process and disclose to a trusted adult if they are being abused or photographed inappropriately. This is particularly important for pre-school children because it is less likely that they will recognize that the behaviour is not normal (they do not have much experience outside of the home and can be convinced easily). This point is underscored by the age of the children viewed by Cybertip.ca analysts in the vast majority of child sexual abuse images. Clearly, parents, grandparents, child care workers, neighbours, medical professionals, and other adults also need to learn to recognize possible signs of abuse. Education in this area has to be comprehensive and build life skills in the children. Tools should be provided to caregivers in the areas of healthy parenting and understanding and recognizing signs of sexual abuse.

> Analysts have more recently noted images of children with demeaning words or phrases written on their bodies.

The average SMR of children in the assessed images is SMR 1.7. However, the average age is likely much younger than that, as the images that are classified as SMR 1 comprise any image where the child shows no evidence of sexual maturation. As a result, sexual abuse images of babies and toddlers are included in the SMR 1 classification. Cybertip.ca analysts have noticed that images of babies and toddlers have become increasingly prevalent over the past two years. Of concern is the decreased likelihood that this abuse will be discovered, as these children have less developed verbal skills and limited contact with adults outside of their homes. Additionally, this raises concerns surrounding the demand for sexual abuse images involving very young children.

> **2** **RECOMMENDATION:** Collaboration between hotlines around the world to begin tracking infants and toddlers in child abuse imagery. This will provide a better breakdown of the age of the children in images and assist in providing accurate numbers about whether there is a growing audience for images of very young children being abused. This could prompt important dialogue regarding prevention strategies to better protect pre-school children.

The Criminal Code (Canada) defines a "child" as anyone under the age of 18 years; however, it is difficult to assess the approximate age of children who have reached sexual maturity, which tends to happen before the child reaches 18 years. The classification of SMR 5 is rarely applied, as it refers to an individual who is sexually mature. This classification is only used when the victim is known to be underage. For example, this would be applied if a 17-year-old contacted Cybertip.ca with information about illegal images of her/himself that were being distributed.

Due to this difficulty in assigning an age range to sexually mature children, it is likely that the tipline does not assess all images of children under 18 years as *child pornography*. Unless "underage" is demonstrated by the sexual development of the individual pictured, analysts will not make assumptions as to their real age. As a result, these images may be forwarded to law enforcement or INHOPE hotlines as *child pornography unconfirmed*.

CASE EXAMPLE

Cybertip.ca received an online report from an anonymous reporting person. The reporting person indicated that they had received numerous emails from a suspect selling pornographic DVDs. One of the emails referred to a girl who was known to have been exploited through the production of hundreds of abusive videos while she was under the age of 18. Analysts confirmed information in the report and forwarded it to the Toronto Police for possible investigation. A male was arrested and charged with possession of child pornography, two counts of making child pornography, and two counts of distributing child pornography.

TABLE 5.3 Comparison of the age of children and degree of abuse depicted in the child sexual abuse images analyzed

	Sexual posing	Extreme sexual posing	Sexual assaults	Extreme sexual assaults	TOTAL
SMR 1	32.3%	27.2%	37.2%	3.3%	2,359
SMR 2	36.0%	30.2%	31.6%	2.3%	1,017
SMR 3	45.3%	30.2%	22.9%	1.6%	547
SMR 4	46.9%	29.7%	22.3%	1.1%	75
SMR 5	58.3%	16.7%	25.0%		12
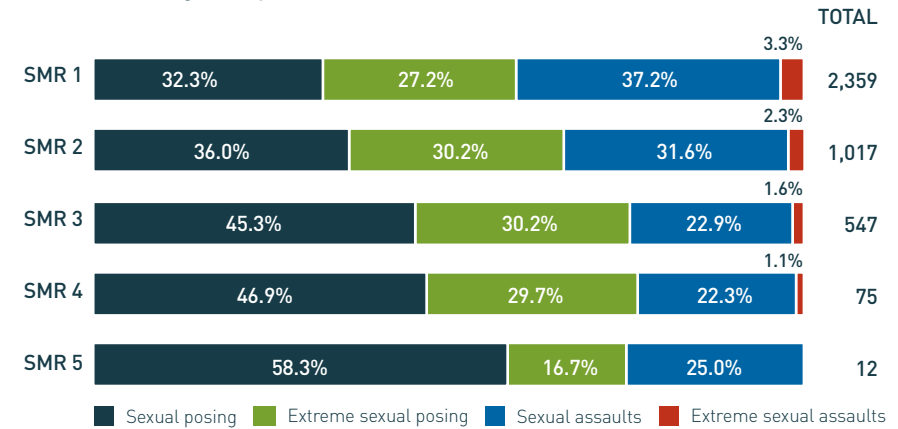
Images of children less than 8 years of age (SMR 1) most often depict children being abused through sexual assaults (37.2%). This is different than images of older children (SMRs 2, 3, 4), which most often depict the children posing nude or in a sexualized way (36.0%, 45.3%, and 46.9% respectively). This may speak to demand by those who produce or access child abuse images, or may simply reflect what the reporting public is coming across.

Images depicting extreme sexual assaults against children (based on 111 images of severity 4)

- Children abused through extreme sex acts most often (68.5%) occur against children under 8 years old.
- Where it is known, 9.8% of the images depict babies or toddlers.
- Compared to image severity 1, 2, and 3, it is more likely that severity 4 images have adults visible in the pictures; 41.3% have at least 1 adult visible.
- Many of the images depict bondage (75.5%), with others showing bestiality, torture, urination, defecation, or necrophilia (some in combination).
- 13.8% of the images classified are hosted on commercial websites, with the remaining found in thumbnail galleries (41.4%), forums (16.1%), on image hosting websites (11.5%), on a portal page (8.0%), on a social networking website (6.9%), or on a blog (2.2%).
- 45.1% of these websites were hosted in the United States, 17.6% were hosted in Thailand, 12.1% in Russia, and 4.4% in Canada. The remaining were divided among 7 different countries.
- 14 are drawn or cartoon images, at least 2 of which appear to be the same image.

Sex of child in the image (4,110 images)

▸ **83.0%** (3,412) of images depict **girl children**

▸ **14.6%** (599) of images depict **boy children**

▸ **1.2%** (50) of images depict **children of indistinguishable sex**

▸ **1.2%** (49) of images depict **both girl and boy children**

The category of "indistinguishable sex" is applied when the child is clearly being abused, but the child's genitals are not pictured. Images that fall into this category generally show only a portion of the child in the image, and consequently are analyzed based on relative stature. The images must explicitly show that the victim's size in relation to the adult's is unquestionably that of a child; the child would then have to be significantly smaller than the adult pictured. As such, the victims in this category are likely under 12 years of age (SMR 1 and 2), and where information is provided in the image description, 25% were infants and 63% were toddlers being abused through sex acts.

1.2% Both — 1.2% Indistinguishable — ♂ 14.6% — ♀ 83.0%

Std. Dev. = 2.0

Figure 5.3: Sex of the child in the image

3 **RECOMMENDATION:** Consideration should be given to gender-related education. With an over-representation of girl children in sexual abuse images, supplementary prevention material should be created for them, and should specifically target girl-centered environments (i.e. Girl Guides). This may help in the effort to educate girls about sexual abuse, how to recognize it and to report abusive behaviour.

TABLE 5.4 Comparison of the sex of the children and degree of abuse depicted in the child sexual abuse images analyzed

Child's sex					TOTAL
Girl	38.7%	30.2%	28.3%	2.7%	3,412 images
Boy	22.2%	21.7%	53.9%	2.2%	599 images
Indistinguishable	4.0%	4.0%	84.0%	8.0%	50 images
Both	18.4%	8.2%	71.4%	2.0%	49 images

■ Sexual posing (Total: 1,466) ■ Sexual assaults (Total: 1,365)
■ Extreme sexual posing (Total: 1,168) ■ Extreme sexual assaults (Total: 112)

5.4 Page analysis

In addition to classifying images, every webpage analyzed is assigned a classification based on the youngest child depicted in the child pornography on the page. Since February 27, 2006, the lowest age range (with an SMR rating) has been recorded, regardless of the severity of the image or the sex of the child in the image. Of the 8,632 incidents with SMR information,[13] the average lowest SMRs viewed on analyzed webpages is SMR 1.3. This would normally reflect a child of approximately 8-9 years old; however, as mentioned previously, the average age of the youngest child is likely much younger than 8 years old.

77.6% (6,698) SMR 1: under 8 years old

12.5% (1,075) SMR 2: between 8 and 11 years old

8.4% (729) SMR 3: 11- to 12-year-old girls, 12- to 14-year-old boys

1.5% (130) SMR 4: 12- to 16-year-old girls, 14- to 15-year-old boys

77.6% of webpages classified as child pornography depict abuse images of children younger than 8 years old. 90.1% of these webpages have images of children under 12 years old being sexually abused.

These are images of very young children being sexually abused or posed deliberately in a sexualized way with the image focusing on their genitalia. These children, including babies and toddlers, are being raped and sexually abused. There is no mistaking the severity of many of these images.

13 Analysts were able to add SMR information to incidents beginning in December 2005.

Among the website types that have been classified, some types are more likely to host images of younger children than others. That difference is reflected in table 5.5 below (associated with table 5.2).

TABLE 5.5 Percentage of websites depicting children younger than 8 years old	
Directory listing	94.7%
Portal	81.6%
Image hosting	74.6%
Forum	74.6%
Commercial	74.3%
Thumbnail gallery	72.4%
Filesharing	72.2%
Social networking	55.8%
Video hosting	50.3%

Most of the time, there are child abuse images of more than one child on a page (70.2%), with only 29.8% of child pornography websites focused on an individual child. This is quite different from reports relating to exploitative child modelling (offensive and exploitative images of children, but not those that would meet the Criminal Code (Canada) definition of child pornography), in which 42.4% focus on an individual child.

The most common instances of a single child on a confirmed child pornography website include:

1 A website hosting numerous images considered to be exploitative child modelling and/or adult pornography, with only a single image (or multiple images of the same individual) classified as child pornography. These websites often appear more "professional" and tend to be geared toward a preference for the "petite" or "young teen" look.

2 Websites—most commonly forums or image hosting websites—with only one image on the page. These seem to be images of younger children, taken in a less-professional manner. It is likely that most of these images are posted by the offender him/herself.

3 Websites selling child sexual abuse images.

29.8% of child sexual abuse websites focus on an individual child rather than various children.

More recently, analysts have been recording the age range of the children depicted on child pornography webpages.[14] The majority of child pornography websites have images of children of a variety of ages. On 58.6% of websites, there is a range of SMR classifications on the page.

TABLE 5.6 SMR range of the children on child sexual abuse websites	
Only SMR 1	21.1%
Only SMR 2	12.4%
Only SMR 3	5.9%
Only SMR 4	2.1%
SMR 1-2	11.9%
SMR 1-3	13.6%
SMR 1-4	9.5%
SMR 1-5	7.0%
SMR 2-3	4.6%
SMR 2-4	2.5%
SMR 2-5	1.5%
SMR 3-4	4.8%
SMR 3-5	2.6%
SMR 4-5	0.6%

Although there is a wide variety of material represented by the numbers in table 5.6, there are some trends that may provide further explanation:

▶ Commercial websites tend to cater to a specific group of offenders, with images grouped in specific or narrow age ranges. A minority of commercial sites cater to individuals with a sexual interest in very young children, showing mainly infants and toddlers.

▶ Image hosting sites, where individuals with a sexual interest in children can upload images, may reflect the specific interests of the collector/uploader. For example, some collectors will only have children of a single sex and narrow age range, or even just activity-based photos (e.g. prepubescent boys wrestling).

▶ Some thumbnail galleries do not focus on a particular age range, but instead depict images of all ages, including images of both children and adults. These webpages may be comprised of images that deal with extreme and/or potentially illegal themes, suggesting that the taboo itself is the basis of the interest, rather than a specific age range of children.

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14 SMR range was added to the Cybertip.ca database on June 17, 2008. There are 3,270 incidents with an associated age range.

Drawings, 3D images & cartoons

While Cybertip.ca analysts do review drawings and cartoon images of child sexual abuse, these represent less than 3.5% of all unique images that have been analyzed by the tipline. Drawings, however, are more prevalent than that number would suggest. Analysts prioritize the analysis of images involving real child victims, as they recognize that the potential harm is greater when child pornography is an image of an actual child being abused.

Many jurisdictions outside Canada do not recognize drawings as illegal.

Drawings of child sexual abuse are also harmful. Individuals with a sexual interest in children may use drawings as a way to explore fantasies of children being sexually abused *(Salter, 2004)*. Technological advances in three-dimensional illustration now allow the production of images that are so realistic they are sometimes difficult to distinguish from real photographs. Websites with drawings often show comic-book-type panels with narratives detailing the progression of sexual abuse against a child.

Drawings are occasionally found alongside images of real children in collections, in addition to websites depicting adult pornography. It could also be the image of a real child that has been manipulated into a cartoon or drawing format, either still or animated. The image could appear to be a fantasy drawing, but it is actually a record of child abuse. Sometimes, these are representations of well-known children or fictional characters; often child actors or singers can become the objects of sexual abuse fantasies online.

Many of the drawings seen by analysts depict severe abuse against a child—although the sample size is small, 75.2% of drawn or cartoon images depict sexual assaults against children (compared to 35.9% of all child pornography images).

▸ **75.2% depict sexual assaults against children**

▸ **69.2% depict drawn or cartoon girls, 21.8% depict boys**

▸ **93.2% depict children under 12 years old**

CASE EXAMPLE

In May 2006, Cybertip.ca received a report about a forum on a comedy website. The reporting person indicated that someone had posted links in the forum to graphic images of cartoon children being sexually assaulted. The analyst reviewed the information and visited the website, which was hosted in the United States. Confirming that the images were of cartoon toddlers being sexually abused, the analyst conducted various searches and determined that the female suspect also appeared to be providing access to illegal images from her profile page. The report, along with a possible name, address, phone number, and online profile of the suspect, were forwarded to law enforcement for possible investigation.

Countries hosting child sexual abuse images

Cybertip.ca analysts record the country where the image is hosted at the time of analysis. This is done automatically through online tools that connect the image to a likely physical server location. Figure 5.4 shows that not all images on a website are necessarily hosted in the same location as each other or as the webpage.

EXAMPLE: website hosted in Canada

Image 1: Hosted in Canada

Image 2: Hosted in US & Spain

Image 3: Hosted in Russia
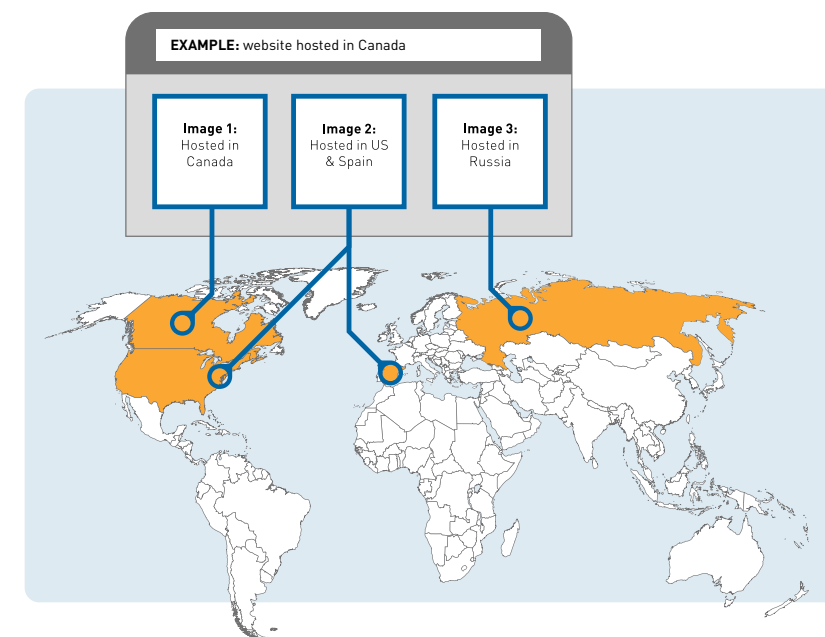
Figure 5.4 Webpages hosted on multiple servers

There are an infinite number of possibilities as to where and how websites are hosted. It is possible to have the website and all its images hosted on a single server. However, Figure 5.4 shows that it is also possible to host websites and images on multiple servers within a single country or in a variety of countries.

When a website and its images are spread across different servers and jurisdictions, takedown of material becomes a more difficult and time consuming task. Shutting down only the website could leave images remaining online.

UNITED KINGDOM 1.0%
0.6%

RUSSIA 7.5%
20.4%

NETHERLANDS 3.6%
3.4%

GERMANY 1.7% 1.1%

CANADA 12.6%
9.0%

SPAIN 3.4%
0.8%
1.1%

CZECH REPUBLIC 1.0%

FRANCE 0.6%

SOUTH KOREA 0.9%
3.6%

JAPAN 1.2%
4.3%

CHINA 2.1%
1.1%

UNITED STATES 57.3%
49.2%

PORTUGAL 0.6%

THAILAND 3.0%
0.4%

HONG KONG 0.7%

BELIZE 0.3%

PANAMA 0.7%
0.6%

TABLE 5.7 Top 15 image and website hosting countries

It is possible for the host country of an image or a website to change over time. For example, an image hosted in Canada at the time of analysis could be seen hosted in the United States one week later. Cybertip.ca does not follow this movement; only the host at the time of analysis is recorded by the tipline.

TOP 15 IMAGE HOST COUNTRIES	
United States	57.3% (4,222)
Canada	12.6% (929)
Russia	7.5% (550)
Netherlands	3.6% (264)
Spain	3.4% (250)
Thailand	3.0% (220)
China	2.1% (156)
Germany	1.7% (122)
Japan	1.2% (88)
United Kingdom	1.0% (72)
Czech Republic	1.0% (71)
South Korea	0.9% (63)
Panama	0.7% (48)
Portugal	0.6% (47)
France	0.6% (44)

TOP 15 WEBSITE HOST COUNTRIES	
United States	49.2% (6,359)
Russia	20.4% (2,636)
Canada	9.0% (1,165)
Japan	4.3% (557)
South Korea	3.6% (471)
Netherlands	3.4% (444)
Germany	1.1% (145)
China	1.1% (143)
Spain	0.8% (108)
Hong Kong	0.7% (85)
Panama	0.6% (81)
United Kingdom	0.6% (78)
France	0.5% (63)
Thailand	0.4% (57)
Belize	0.3% (43)

Cybertip.ca has collected host country information for the images and the webpages that have been analyzed. This information is based on geographic IP lookups. The images analyzed were hosted on at least 7,367 IP addresses[15] and the 12,696 website incidents have 10,436 entries for host country information.[16]

15 These unique images are based on unique SHA-1 values. Beginning in July 2007, when analysts started capturing SHA-1 values, host country information was input manually based on the first IP address noted. In April 2008, the database began pulling host country information automatically based on IP addresses and geographic lookups. Multiple host countries were input (if appropriate) from that time forward.

16 Cybertip.ca analysts manually input host country information for websites beginning early in 2003, with a maximum of one country added for each website. Since April 2008, host country information for websites has been automatically pulled by the database, allowing multiple options to be recorded beyond that date. There are 416 website incidents without country information.

64.5% of Canadian-hosted images depict children under 8 years old. This is somewhat younger than the overall average, in which 57.4% of all child sexual abuse images are of children under 8 years old.

4 **RECOMMENDATION:** Explore additional opportunities to work with law enforcement and Internet service and content providers to remove illegal content from Canadian servers.

Focus on Canada (929 images)

The 929 images hosted on unique IP addresses in Canada can be broken down as follows:

A **47.1% (438)** were hosted by a website designed specifically to allow public hosting of images. Almost all of the images on this website were unique based on the SHA-1 value; only three of the images were observed twice, on different IP addresses.

B **24.8% (230)** were hosted on a website that changes content on a regular basis. It is most often in the form of a portal page that sells memberships or provides links to websites hosting child abuse images. An additional **1.6% (15)** of images are hosted on a different service but, based on published information about the owners of the sites, appear to be owned by the same provider.

C **8.2% (76)** of the images appear to be made available in Canada on a website that allows users to create personalized social networking websites. The images and videos on these personalized pages were made available through a content delivery network.

D **4.6% (43)** of the images were hosted by a webhost and colocation provider. They appear on a wide variety of websites, without a typical layout or content.

E The remaining **13.7% (127)** of images were hosted in Canada on at least 13 different services.
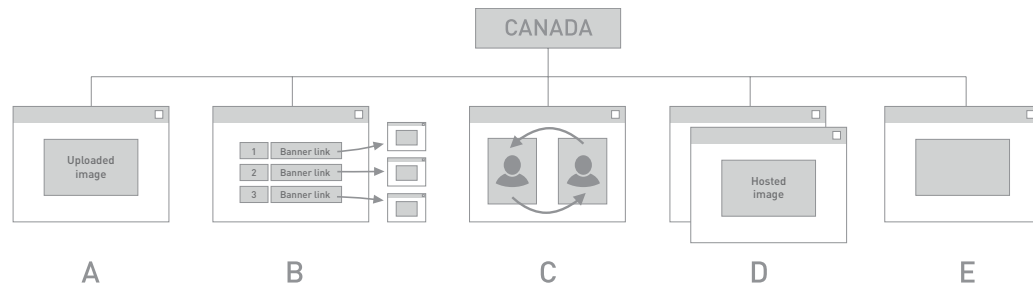
Reports pertaining to Canadian-hosted images may be over-represented due to the fact that the majority of the tipline's INHOPE partner hotlines, who are trained to assess illegal content in their respective jurisdictions, submit reports to Cybertip.ca if the content they receive appears to be hosted in Canada. This increases the overall proportion of Canadian-hosted content that is reported to Cybertip.ca. *Of the 515 confirmed child pornography websites submitted to Cybertip.ca by the Internet Watch Foundation in the United Kingdom, 95.3% (491) were hosted in Canada at the time of analysis.*

86.3% of unique images hosted in Canada were found on only one of five Internet services.

Some webpages are hosted on multiple IP addresses. These can be hosted in the same country (as is most often the case) or in any different number of countries. Since Cybertip.ca began tracking and recording multiple IP addresses,[17] 3,109 webpages hosting child sexual abuse images have been analyzed, 2,809 (90.3%) of which have only been hosted on a single IP address. Of the remaining (300), the number of hosts ranges from 2 to 19.

TABLE 5.8 Number of IP addresses associated with each webpage	
2	57.7% (173)
3	4.0% (12)
4	4.7% (14)
5	0.7% (2)
6	2.7% (8)
7	0.7% (2)
8	1.7% (5)
9	0.7% (2)
10	5.0% (15)
11	10.3% (31)
12	5.0% (15)
13	3.7% (11)
14	1.7% (5)
15	0.3% (1)
16	0.3% (1)
18	0.3% (1)
19	0.7% (2)
TOTAL	**300**

Average: 5.0 IP addresses
Standard deviation: 4.0

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17   Recording multiple IP addresses was an option added to the Cybertip.ca database on April 14, 2008.

Top Level Domains

A website's top level domain (TLD) refers to the end of the domain name. For example, in http://www.cybertip.ca, the domain name is www.cybertip.ca. The top level domain is "ca"; it includes everything after the last period. TLDs fall into one of three categories:

1 **GENERIC TLD (gTLDS):** refer to TLDs that have three or more characters and can be used by anyone for a general purpose. *.com* was originally designed to be used by commercial enterprises, but has since become the most popular domain for all websites, particularly those hosted in the United States. Other common examples include: *.edu* for educational institutions, *.gov* for government entities, and *.mobi* for websites designed for viewing on mobile phones.

2 **COUNTRY CODE TLDS (ccTLDS):** refer to TLDs that are based on two-character international country codes. Generally speaking, ccTLDs are only used by websites that are hosted in a particular country. Country code managers, however, do not follow a consistent set of standards. For example, in Canada you have to prove that you reside in the country to purchase a *.ca* domain, but you do not have to be a resident of the Christmas Islands to purchase a *.cx* domain. This complicates tracking and website take-down policies. Some common ccTLDs examples include: *.cn* for China, *.ru* for Russia, and *.es* for Spain.

3 **IP HOSTED SPACE:** refer to URLs that are represented by numbers, rather than text. For example, typing http://205.200.235.228 into a browser's address bar will access the www.cybertip.ca website.

There are 73 different TLDs represented among 12,696 child pornography websites reported to Cybertip.ca. 96.9% (12,305) consist of the 17 most prominent TLDs, six of which are gTLDs and 10 of which are ccTLDs. The remainder consists of IP hosted domain space:

gTLDs	85.3% (10,833)
ccTLDs	13.0% (1,647)
IP Host	1.7% (216)

TABLE 5.9 The most common TLDs on child pornography websites	
.com	56.9% (7,225)
.net	9.6% (1,219)
.info	9.1% (1,161)
.biz	6.0% (763)
.org	3.2% (407)
.ru	3.0% (380)
.to	1.8% (229)
IP Host	1.7% (216)
.jp	1.3% (164)
.us	0.8% (106)
.cn	0.8% (99)
.es	0.5% (63)
.de	0.5% (59)
.name	0.4% (56)
.ro	0.4% (55)
.bz	0.4% (53)
.ws	0.4% (49)
56 Remaining TLDs	3.1% (391)
TOTAL	12,696

> **5** **RECOMMENDATION:** Establish international standards for the personal information a registrant is required to provide when registering a new domain name. This could include proof of name and address, residency in a particular country, and contact information. This information could be valuable in the event of an investigation, assisting in determining the owner of a child pornography website, and potentially rescuing children from ongoing sexual abuse. This would require collaboration with the Internet Corporation for Assigned Names and Numbers.

It is not surprising that *.com* and *.net* are the most widely used top level domains for child abuse images—they are the most popular TLDs overall (*Wikipedia, 2009*). It is interesting, however, that *.info* is third on the list of TLDs hosting child pornography, as it is not a widely used TLD overall and was not available for registration until 2001. While the tipline suspects that some child pornography domain names are purchased as "throw-aways" (the owner purchases them only expecting them to be up for a short period of time, possibly revoked by the registry, or registrar), it is not possible to investigate this through the Cybertip.ca database.

> **6** **RECOMMENDATION:** Partner with domain name registrants to have domains hosting illegal content discarded from use. This would prevent new website owners from purchasing domains known to host child pornography and reusing them for the same purpose. Due to the fact that the domain names become important marketing tools, and become well-known to consumers of child abuse images, steps need to be taken to remove them permanently from circulation.

Images reported many times

Analysts see the same child sexual abuse images over and over again. Based on a comparison of SHA-1 values, 29.2% of images reported to Cybertip.ca have been analyzed on more than one occasion. The number of reports associated with an image ranges from 1 to 52 (52 reports of websites hosting the particular image). **The average number of times an image has been reported is 1.8 times.**

Multiple image reports can occur because:

▶ Numerous people are reporting the image in the same location

▶ A site is mirrored on several URLs

▶ An image has been taken from one site and posted on another

These multiple reports of images underscore the reproducibility and permanence of images on the Internet, which can be distributed indefinitely. This ongoing viewing of images means that the abuse of the child has no real end. If the child is aware that her/his image remains online, there can be particular harm in knowing that individuals continue to view the image for sexual gratification.

7 **RECOMMENDATION:** Further research is needed on the impact of child sexual abuse on victims and whether the Internet has changed the nature and extent of their trauma and their healing process. Are victims impacted differently if they know photographs have permanently recorded their abuse? What if they are aware that the images are being distributed and propagated on the Internet? Understanding the impacts could provide better treatment for victims, and guide how victims should be supported and managed through the criminal justice system.

8 **RECOMMENDATION:** Further collaboration and data sharing is needed between organizations dealing with this content area. Assessment of images by tiplines is likely duplicated given the high percentage of child sexual abuse images analyzed on more than one occasion. A collaborative database of SHA-1 values (centralized or decentralized) could have a significant impact on reducing resource requirements and exposure to imagery.

CASE EXAMPLE

Cybertip.ca has received 52 reports of websites hosting the same image, as well as numerous additional reports (at least 43) of email spam containing the image. This particular image is of a girl under the age of 8 years being abused through sex acts. Her face is not visible in the image. The URL usually provides access to a commercial website that sells a large selection of DVDs of very young children being sexually abused. The multiple reports of this image demonstrate the durability and permanence of the image; this website and spam emails with links to the image have been reported to Cybertip.ca regularly for several years. The image has been noted in the following countries: the United States (71.2%), Canada (20.3%), Australia (3.4%), United Kingdom (1.7%), Lithuania (1.7%), Russia (0.8%), and Ukraine (0.8%).

5.5 The marketing of children

Alternative Text: Image alt and title attributes

Alt attributes are added to HTML documents to provide short textual replacements (generally less than 5 words) when images cannot be displayed in the web browser. The "alt text" was originally intended to describe images for slow or text-based browsers or for people with visual impairments. Title tags, sometimes used interchangeably in browsers with alt tags, appear as "tooltips" when a user's mouse hovers over an image.

Alternative text is *intentionally* added to describe an image. With the confirmed child abuse images Cybertip.ca has seen, the alt text for these photos tends to be sexually explicit language. This shows the intentional and overt nature of the individual who is uploading the image, and improves image searching.

▶ Of the images assessed by the tipline, the majority (69.1%) of images do not have associated alt attributes

▶ Of the images containing alt attributes, 32.5% were noted on more than one occasion (are duplicate), and 67.5% were unique

Cybertip.ca conducted an analysis of the most common alt attributes, all of which have been observed more than 500 times. The longest attribute was only 27 characters; however, when we entered these phrases in popular search engines, they led to potentially illegal content. These short, simple phrases with commonly used words provided an amateur roadmap to child sexual abuse images. For this reason, they have been excluded from this report. Among the alt attributes, the words "free" and "lolita" were observed over 4,000 times each. Typical examples include "free rape," "nymphets land," "preteen lolita pics," "lust collection," and "free underage incest stories." These attributes could not be mistaken for legal material or adult pornography.

Image title attributes are less common than alt attributes and tend to be much less descriptive of the image. The top five observed attributes include:

1 "*****" (just a star, no words)

2 "Click to Upgrade to Favorite"

3 "Open Gallery"

4 "Young"

5 "Live Internet"

The sentence in this tag is an example of a title attribute.

A

Among the alt attributes, **the words "free" and "lolita" were observed over 4,000 times.**

All of the images with a "*" title attribute were observed on two different domains. A review of the page descriptions leads us to believe that these are the same webpages, with hundreds of small images of both real and illustrated children being sexually assaulted.

Words on a page

The number of words on a child abuse website page ranges from zero to a maximum of 36,484 words, with an average word count of 297.9 words per page.

▸ "Zero words" would normally refer to a page with images but no text. This occurs on nearly 500 webpages with confirmed child sexual abuse images.

▸ Images are not always labelled in websites as such. For example, a page with 16 images can appear as if it has 16 images, 1 image (displayed as a collage), or zero images. If it is zero images, the site has used obfuscation techniques to intentionally conceal its images.

TABLE 5.10 20 most observed words on child sexual abuse websites			
1	pics	11	pussy
2	free	12	new
3	gallery	13	best
4	young	14	nude
5	lolita	15	teens
6	lolitas	16	sexy
7	pictures	17	click
8	hot	18	hardcore
9	video	19	preteen
10	porn	20	models

9 RECOMMENDATION: Further research is needed to determine how words are being used on websites hosting child sexual abuse images. Websites containing child abuse material could be automatically identified using this word data set and a probabilistic algorithm. This data set could also be queried for new and emerging terms/words used amongst individuals who seek or trade child sexual abuse content.

Title bars

Title bars, which appear in the browser's top left corner, are intentionally written into HTML documents by a website's author.
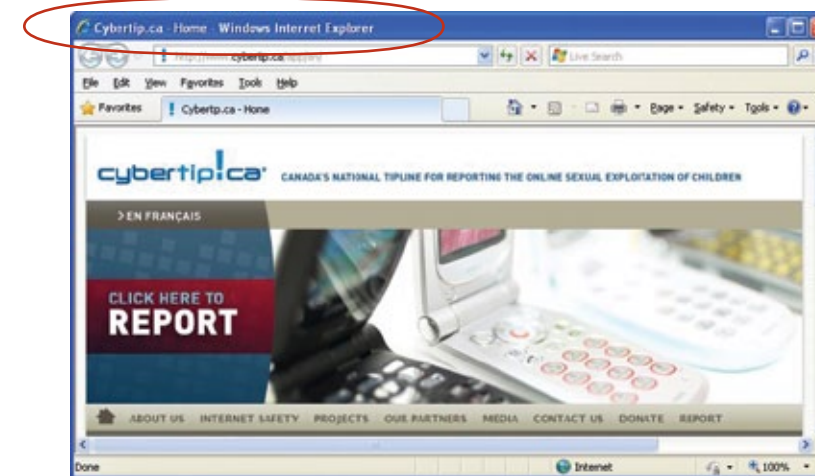
Figure 5.5 A webpage's title is found in the browser's top left corner (see circled text).

▸ 44.9% of the title bars were seen more than one time, the most popular of which was observed 96 times

▸ 53.9% of the titles were unique (only seen one time)

▸ 1.2% of title bars were left blank (there was no title specified)

Some of the unique titles are similar enough, that although they are not an exact match, would lead one to believe that they are the same page. For example:[18]

▸ XXX.childonly photos – FREE

▸ XXX.childonly.ca photos – FREE

▸ X.childonly photos – FREE

Some titles are so unique, that if a duplicate title bar is found, there is a high probability that the website is being run or was designed by the same individual.

10 RECOMMENDATION: Carefully track the use of unique title bars on websites hosting child abuse images. Following the movement of these websites will provide a clearer picture of how content moves on the Internet.

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18   These are fictitious title bars created to demonstrate the fact that title bars can be similar.

Similar to websites overall, title bars are more likely to use certain words than others. The most popular words include:

▶ "Lolita" or some variation of the word

▶ References to children or young age

▶ Words that commonly refer to sex, pornography, or nudity

▶ References to pictures or movies

▶ Indications that the website or images are "free"

▶ Some variation of the word "pedophilia" or "pedo"

Number of images on a page

Recently, analysts began providing an approximate number of child pornography images on a webpage. The number ranges from one image to 467 images on a page, with an average of 23.5 images. Not all images would necessarily be considered potentially illegal child pornography.

Image date

Image dates range from 1998 to 2009, with photos more likely to have been taken recently.

TABLE 5.11 Image date ranges	
1998	3.8% (22)
1999	1.0% (6)
2000	0.3% (2)
2001	0.9% (5)
2002	1.9% (11)
2003	4.1% (24)
2004	8.9% (52)
2005	5.8% (34)
2006	11.0% (64)
2007	16.3% (95)
2008	43.5% (254)
2009[19]	2.6% (15)
TOTAL	**155**

Average: 2006
Standard deviation: 2.5

▶ The fastest time noted in reporting an image to Cybertip.ca (1 day or 24 hours) speaks to the speed at which child sexual abuse images can be taken, uploaded, and shared on the Internet. It took less than two days for that particular image to be circulated and reported to the tipline.

▶ The longest time noted in reporting an image to Cybertip.ca (11 years or 96,672 hours) speaks to the permanence of the child abuse record and the fact that these images can be exchanged online indefinitely. This image, taken in 1998, may have been taken with one of the first digital consumer cameras sold.

19   The 15 images taken in 2009 were current to March 31, 2009.

6 THE "BUSINESS" OF CHILD SEXUAL ABUSE

The sale of child sexual abuse images is not new—for many years, child pornography has been available to consumers through physical mail in the form of magazines, videos, and printed photographs. With the advent and international adoption of the Internet, child pornography has become digital. Child abuse images, videos, audio clips, and written material can be purchased on the Internet. It has been estimated that online child pornography is a multi-billion dollar enterprise, among the fastest growing "businesses" on the Internet.

While Cybertip.ca analysts have been assessing commercial websites hosting child sexual abuse since the tipline was first established in September 2002, there has been a recent increase in the number of these websites. In July 2007, Cybertip.ca began explicitly tracking whether there was a commercial component to a reported URL. As of March 31, 2009, 800 websites had been classified as commercial.[20] This constitutes approximately 12.6% of all child pornography websites.

We can assume that this number is a gross underestimate of the amount of child sexual abuse images that are offered for a monetary price. Often, one or several webpages with child sexual abuse images are offered free of charge (as a "free tour") before the website will require payment for additional images. Cybertip.ca analysts do not search or "investigate" a website. They assess the first page they see with potentially illegal material, never clicking more than two links into a website. As such, analysts may not reach the point at which the sites are selling memberships or material. Cybertip.ca analysts also do not engage with potential suspects, and therefore would not classify a website as commercial in instances where a potential client must contact the website owner to determine whether there are child abuse images for sale.

Finally, many sites that do not have their own commercial component exist for the purpose of promoting commercial sites. In providing links, re-directs, or advertisements for distinct commercial websites, these sites may receive payment or reciprocal linking for making child pornography available. These websites are indirectly profiting from the sale of child abuse images. All of this results in an underestimate of commercial child pornography.

In July 2007, Cybertip.ca began explicitly tracking whether there was a commercial component to a reported URL.

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20 Commercial websites include all sites that request payment in order to access, view, or obtain additional potentially illegal content.

The nature of the Internet usually means that when one website is shut down, a similar website will often appear later under a different name, on a different domain, or hosted on a different server. Analysts often see identical sites hosted on different URLs simultaneously. This is one of the main reasons why it is so important to understand the "business" of child sexual abuse images—by following the money and getting to the root of the problem (the person(s) operating the business, rather than the server hosting the information), there is a greater opportunity to disrupt its profitable nature. Ultimately, this will reduce the likelihood that the website will appear elsewhere on the Internet, reducing the availability and demand for child abuse material.

11 RECOMMENDATION: Establish a coalition of stakeholders, similar to the Financial Coalition in the US, to develop solutions to the commercial aspects of child sexual abuse images. This would involve working with partners in law enforcement, the financial industry, and Internet service and content providers to follow the websites to their source and eradicate the problem.

Unlike child pornography websites that do not have a commercial component, sites that profit from child abuse images generally have a theme and begin with a homepage collage of images and text. There are normally text links to sample child abuse material, which connects to a members-only section, and an area where one can apply for membership to the website. Often the collage is followed by a thumbnail gallery, a collection of small images set in rows, labeled as a "free tour" of the website. There are usually 20-60 images in the free tour section. The sites generally advertise large collections of high quality images and videos that are only available to members.

COMMON THEMES	
INNOCENCE	Demonstrated with pastel or bright colours, toys, cartoon images and words like "angel," "innocent," "virgin," and "pure." These websites tend to have younger children, toddlers to elementary school age, and are associated with children's interests. If clothing is seen, it tends to be age-appropriate. Children tend to be posing (severities 1 and 2), and are less likely to be abused through sex acts.
ADULT SEXUALITY AND PORNOGRAPHY	Demonstrated with vivid colours, lewd language like "slut," "Lolita," "juicy," "tight," "nymphet" and settings and clothing similar to what is seen in adult pornography. Clothing tends to be sexualized, with heavy make-up, lingerie and show-girl type costumes figuring prominently. These sites endeavour to portray the children as young, willing, and promiscuous. Posing is more overtly sexual, and the sites can also contain images of children being abused through sex acts.
DARKNESS AND DEPRAVITY	Uses a lot of black, grey, red, or camouflage patterns, and language like "dark desires," "pedophile," and "sick." These websites tend to have children abused through sex acts with each other or with adults. These sites may also depict extreme sexual abuse of toddlers and sometimes babies.

Although the commercial websites are reasonably professional in design, the individual images are not necessarily professionally taken. Sometimes the images included in the collages or thumbnail galleries appear to be lower quality—that is, images with low light, low resolution, poor focusing, or poor sight lines. Images sometimes appear to have been taken by the abuser. Analysts believe that the images on commercial sites are not exclusively images that have been produced for the site, but rather any image that a site's creator thinks will be of interest to potential customers. The lower quality images tend to use younger children and/or display more severe abuse.

Table 6.1 shows the severity of abuse depicted on commercial child pornography websites, with 29.7% (800) of images depicting children being sexually assaulted. This can be compared to only 35.9% of all child abuse images analyzed.

TABLE 6.1 Severity of abuse depicted in child sexual abuse images analyzed on commercial websites

Severity of the abuse depicted in the images	Images on commercial child abuse websites	Images on all child sexual abuse websites
Sexual posing	42.5%	35.7%
Extreme sexual posing	27.8%	28.4%
Sexual assaults	26.4%	33.2%
Extreme sexual assaults	3.3%	2.7%

> The degree of abuse being perpetrated against children on commercial child pornography websites is less severe than on child pornography websites where there is no commercial component. 29.7% of images on commercial websites depict children being sexually assaulted.

TABLE 6.2 Age range of children in sexual abuse images on commercial sites

Age of the child in the image	Child abuse images on commercial websites	Images on all websites hosting child sexual abuse images
SMR 1: children under 8 years old	66.8%	57.4%
SMR 2: children between 8 and 11 years old	22.6%	24.7%
SMR 3: girls 11–12 years old, boys 12–14 years old	9.0%	13.3%
SMR 4 : girls 12–16 years old, boys 14–15 years old	1.4%	4.3%
SMR 5 : girls 16–17 years old, boys 15–16 years old	0.3%	0.3%
Average SMR	**1.5**	**1.7**

Websites with a commercial component are more likely to be hosting images with a lower SMR — 66.8% of images analyzed on commercial websites are of children of SMR 1 (under 8 years old) compared to 57.4% of all child abuse images assessed. See table 6.2.

> 89.4% of analyzed child sexual abuse images on commercial websites show children under 12 years old.

Commercial websites are more likely to host images of girl children. Table 6.4 shows the breakdown of the sex of children in the images.

While commercial child pornography websites do contain images assessed as SMR 4 and 5, there tend to be fewer images on the page that would be considered "grey" (sexually mature individuals who may be underage). Commercial child pornography websites are more likely to contain *only* child pornography images.

Websites selling child sexual abuse images have an average of 22.0 images per page. The range on commercial child pornography websites is much smaller than overall child pornography websites (1-467), with a maximum of 132 images on a page.

> 97.9% of commercial websites focus on multiple children rather than on an individual child (compared to 70.2% of all child pornography websites).

TABLE 6.3 Age range of children in commercial child sexual abuse images

Only SMR 1	5.8%
Only SMR 2	1.2%
Only SMR 3	0.6%
Only SMR 4	0.3%
SMR 1-2	16.3%
SMR 1-3	18.5%
SMR 1-4	13.2%
SMR 1-5	7.1%
SMR 2-3	0.9%
SMR 3-4	1.8%
SMR 2-5	2.2%
SMR 3-4	28.6%
SMR 3-5	3.1%
SMR 4-5	0.3%

10.5% of commercial websites include— among images of younger children— images classified as SMR 5. This is lower than the 33.6% of all websites hosting child sexual abuse images that have images of sexually mature individuals.

TABLE 6.4 Sex of the child in sexual abuse images on commercial websites

Sex of the child in the image	Images on commercial websites	Images on all child pornography websites
Girl(s)	90.2%	83.0%
Boy(s)	6.8%	14.6%
Indistinguishable	2.2%	1.2%
Both girl(s) and boy(s)	0.8%	1.2%

6.3 Where are commercial websites hosted?

The 800 commercial websites were hosted on 1,091 unique IP addresses at the time of analysis. The unique images analyzed on these websites were hosted on 1,067 unique IP addresses. See table 6.5 for a breakdown of host countries based on a geographic IP lookup.

TABLE 6.5 Host location of commercial child sexual abuse images and websites based upon a geographic IP lookup

Host country	Host countries of **images** on commercial child sexual abuse websites	Host countries of commercial **websites** (unique IP addresses)	Percentage of all child pornography websites in the country that are commercial
United States	70.5% (752)	65.6% (716)	13.3%
Canada	8.2% (87)	8.7% (95)	8.2%
Russia	3.7% (39)	5.6% (61)	2.3%
United Kingdom	2.8% (30)	1.5% (16)	20.5%
Germany	1.9% (20)	1.8% (20)	13.8%
Spain	1.7% (18)	1.6% (17)	15.7%
France	1.7% (18)	0.8% (9)	7.7%
Australia	1.0% (11)	1.1% (12)	38.7%
Netherlands	0.9% (10)	2.9% (32)	7.2%
Italy	0.8% (9)	0.5% (5)	54.5%
Panama	0.7% (8)	0.9% (10)	12.3%
Japan	0.7% (8)	0.4% (4)	0.7%
Poland	0.7% (7)	0.4% (4)	80.0%
Ukraine	0.7% (7)		9.1%
Belgium	0.6% (6)	0.3% (3)	75.0%
Turkey	0.5% (5)	3.3% (36)	57.1%
Lithuania	0.5% (5)		40.0%
China	0.4% (4)	0.7% (8)	5.6%
Singapore	0.4% (4)	0.7% (8)	61.5%
Hong Kong	0.4% (4)	0.5% (5)	5.9%
Thailand	0.3% (3)	0.5% (5)	8.8%
Czech Republic		0.4% (4)	15.4%
One or two instances*	1.1% (12)[21]	2.1% (23)[22]	
TOTAL	**1,067**	**1,091**	

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21 Argentina, Austria, Switzerland, Czech Republic, Malaysia, Israel, and Mexico

22 Austria, Switzerland, Denmark, Israel, Lithuania, Ukraine, Argentina, Chile, Estonia, South Korea, Mexico, Malaysia, Portugal, and South Africa

The percentage of child sexual abuse websites classified as commercial varies widely from country to country. In many countries where child sexual abuse websites have been noted, there is no indication of a commercial component. However, as many as 80.0% of child pornography websites noted in Poland were commercial. 8.2% of child pornography websites hosted in Canada have a commercial component.

Since it has been recorded, 9.7% of commercial websites were hosted on multiple IP addresses at the time of analysis. The most frequent occurrence is 10 IP addresses (28.9%), followed by 2 IP addresses (21.2%) and 12 IP addresses (13.2%).

Movement of commercial child sexual abuse websites

Although it is not explicitly tracked, Cybertip.ca suspects that some websites hosting child sexual abuse images operate on fast flux networks. Fast flux domains use nameservers that supply IP addresses that change quickly and constantly. Typically these are IP addresses of compromised residential computers that are serving the content of the webpage or acting as a proxy to the content hosted at another location. This means that a geographic lookup conducted on a website may provide a different result depending on when it is conducted—even if the lookups occur 10 minutes apart.

The 87 commercial images hosted in Canada have been observed on 6 different services, with 50.6% found on a portal page that changes content on a regular basis and an additional 24.7% found on a page that appears to host much of the same content.

To review this, Cybertip.ca tracked the IP addresses of one randomly selected commercial child pornography website fast flux domain hosting child abuse imagery in November 2008. The website, which contained 12 images of girls of SMR 1-3 (all 12 years and under), depicted sexual assaults, extreme sexual posing, and sexual posing. Memberships to the website, which promised more illegal content, were selling for a one-time payment of $128.

Over a 48-hour period, Cybertip.ca observed one website cycle through 212 unique IP addresses, located in 16 different countries (see table 6.6). These appeared 10 at a time and would change approximately every three minutes.

Fast flux is a method used to make the taking down of a website more difficult. This is accomplished using DNS and a constantly changing set of compromised hosts.

TABLE 6.6 Movement of a single commercial child sexual abuse website over a 48-hour period

The unique IP addresses were hosted as follows:	
United States	156 (73.6%) unique IPs hosted by 22 different providers
United Kingdom	20 (9.4%) unique IPs hosted by 5 different providers
India	8 (3.8%) unique IPs hosted by 1 provider
Australia	6 (2.8%) unique IPs hosted by 3 different providers
Canada	5 (2.4%) unique IPs hosted by 3 different providers
Poland	3 (1.4%) unique IPs hosted by 2 different providers
Puerto Rico	2 (0.9%) unique IPs hosted by 1 provider
Philippines	2 (0.9%) unique IPs hosted by 1 provider
Mexico	2 (0.9%) unique IPs hosted by 1 provider
Hong Kong	2 (0.9%) unique IPs hosted by 1 provider
Sweden	1 (0.5%) unique IP
Romania	1 (0.5%) unique IP
Portugal	1 (0.5%) unique IP
Spain	1 (0.5%) unique IP
Austria	1 (0.5%) unique IP
Argentina	1 (0.5%) unique IP
TOTAL	212 unique IP addresses

Residential computers are a large segment of the hosts being used in fast flux networks. Educating the public on personal computer security practices such as a firewall, regularly updated operating systems, and current antivirus software can play a large role in reducing content made available through this technique.

12 RECOMMENDATION: When a site has been identified as fast flux, it is possible to determine which IP addresses are being used to serve the content. Tiplines around the world could work with Internet service providers to notify them of compromised computers on their network. An Internet service provider could choose to suspend the customer's service until the infected machine is fixed.

6.4 How are the images purchased?

When the business of child sexual abuse images moved to the Internet, it diversified the ways in which people could pay for child sexual abuse images. The use of credit cards, online payment tools, and new currencies have made it easy to purchase child pornography. As of March 31, 2009, Cybertip.ca had observed 27 different payment methods being advertised on commercial child pornography websites.

The 800 commercial child sexual abuse websites purportedly accept 1,007 different forms of payment,[23] as seen in table 6.7.

TABLE 6.7 Form of payment purportedly accepted on commercial child sexual abuse websites		
Traditional credit card payment	568	**56.4%**
Online payment system	335	**33.3%**
Cash transfer from a traditional bank or institution	61	**6.1%**
Other or specific type unknown (e.g. email request)	41	**4.1%**
Telephone or text message	2	**0.2%**
TOTAL	**1,007**	

23.8% of commercial child pornography websites indicate that they accept multiple payment methods. As many as six options are provided for payment, but this only occurs in two instances. For those that accept multiple payment methods, the average number is 2.4 payment types.

There appears to be a trend towards an increasing number of payment type options for those looking to purchase child abuse images. In the past six months, nine new payment options have been observed by analysts on commercial child pornography websites. All these new additions would be considered online payment systems, allowing customers to transfer money directly to the merchant without the use of a traditional bank or payment trail. This is not surprising given that there is a lack of regulation outside the traditional banking system; these companies are not required to operate by the same standards as financial institutions for knowing who their customers are. Evidence of new currencies (i.e. token systems with links to real money) has been observed recently.

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50.2% of commercial child abuse websites purport to accept at least one form of traditional credit card payment.

23   Multiple options for payment type could be input in the Cybertip.ca database as of April 14, 2008.

6.5 What is for sale?

Commercial child sexual abuse websites have been noted selling the following items:

‣ Memberships to access further material on the website, often promoted as "better" or "higher quality" content (85.1%). Memberships can be broken down into 2 categories:

    1. Memberships obtained with recurring payments (84.2%): payment intervals range from every 30 days to every 365 days. If the membership is broken down into a monthly rate, the average price is approximately $53 per month (monthly range of $4 to $490).

    2. Memberships obtained for a one-time fee (15.4%): the price of these ranges from $30 to $1,990, with an average cost of $249.

‣ DVDs or videos (5.8%). All of the noted DVDs were sold as a one-time payment. The cost ranged from $7 to $1,900, with an average cost of $687.

‣ Access to sets of images (3.1%) or videos (1.1%)

‣ Ability to purchase a website (0.2%)

‣ Packages (4.7%), which may consist of any combination of the above, most often access to images and videos. These sell for between $10 and $200, with an average one-time cost of $66.

> Commercial child pornography is extremely lucrative and extremely damaging. A great deal of money is being made selling the memorialization of child sexual abuse, creating a demand for more material.

CASE EXAMPLE

Cybertip.ca received an online report in February 2007 from an anonymous reporting person. The report provided information about a suspect who was allegedly running a pedophile forum as well as selling memberships to a secret child pornography club. Over the next year, an additional four reports were submitted to Cybertip.ca with similar information, but containing varying amounts of detail. One report suggested that child modelling images were being used as the front page for access to child abuse images. The reports were forwarded to law enforcement, who conducted an undercover investigation and arrested a male offender. The individual was charged with two counts of possession of child pornography, with further charges possibly pending.

7 CONCLUSION AND RECOMMENDATIONS

This report has provided an in-depth analysis of the child sexual abuse images and websites that have been reported to Cybertip.ca, Canada's tipline for reporting the online sexual exploitation of children. The information provides important insight about the child pornography reports analyzed by Cybertip.ca and sheds some light on the nature and scope of the problem.

The reality is that 82.1% of the images analyzed by Cybertip.ca depict very young, pre-pubescent children under 12 years old. This statistic does not distinguish the many images depicting the sexual assaults of infants and toddlers and raises concerns surrounding the demand for sexual abuse images involving very young children.

There needs to be a shift in the way we view the problem and solutions of child abuse images on the Internet. The truth is that sexual abuse begins in the offline world. Efforts should be focused on preventing child sexual abuse from occurring in homes and communities. By doing so, we reduce the likelihood of these images circulating on the Internet. For this to occur, adults around children need to be educated about the abuse process, how to recognize inappropriate behaviour, interrupt sexual abuse, and facilitate disclosures by children. Efforts should be targeted toward those who work with children outside of the home environment. For example, teachers, child care/child welfare workers, and those groups offering extra-curricular activities should be trained on the issue of child sexual abuse. Finally, organizations and professionals working in this area should realize that by co-mingling Internet safety advice with the issue of child pornography (child sexual abuse) we are doing a disservice to the recipients of this education.

While preventing child sexual abuse through education is essential, so too are strategies to address illegal images once they become available on the Internet.

Not only do these sites impact the child victims within the imagery, but they also assist in creating a market for this type of material. These sites negatively impact societal beliefs and attitudes towards children by showcasing them as sexual objects. Constant movement and challenges in accurately identifying site operators require the need for additional solutions to better address this problem. Some disruption examples include:

▶ Working with ICANN and others to adopt standards for ensuring the validity of a registrant's personal information

▶ Working with domain registrars internationally to have domains known to host illegal content discarded from use

▶ Examining notice and takedown options

▶ Working with payment providers and financial institutions to track and eliminate payment options

▶ Working with stakeholders to internationally share data (i.e. title bar information, SHA-1 values, common domain names hosting illegal content)

In conclusion, the issue of child abuse images needs to remain a national priority. All components—from the social aspects to the technical ones—must be considered when developing effective strategies and solutions. Cybertip.ca will continue to collect data and publish research on the scope of the problem from the tipline's perspective. With more information, we hope to further clarify the issue and provide constructive recommendations, ultimately protecting children by preventing sexual abuse. We remain optimistic that this is possible.

"Child pornography not only harms its immediate victims, the children whose abuse is at its center, but also harms other children through the actions and attitudes of its consumers." (King, 2008)
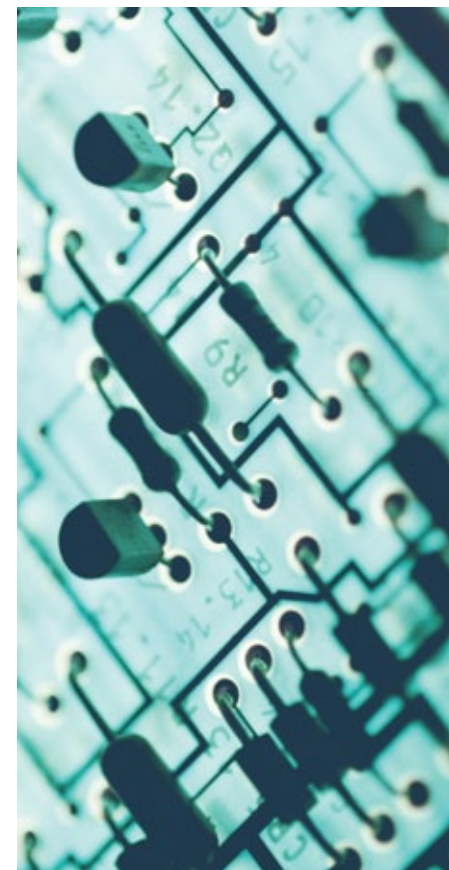
The following twelve recommendations provide suggestions for advancement in the areas of education and public awareness, technical and policy development, and research opportunities.

1 With the majority of child sexual abuse images depicting children 12 years old and under, sexual abuse education is critical for this age group. Education should be provided to help these young children recognize signs of the abuse process and disclose to a trusted adult if they are being abused or photographed inappropriately. This is particularly important for pre-school children because it is less likely that they will recognize that the behaviour is not normal (they do not have much experience outside of the home and can be convinced easily). This point is underscored by the age of the children viewed by Cybertip.ca analysts in the vast majority of child sexual abuse images. Clearly, parents, grandparents, child care workers, neighbours, medical professionals, and other adults also need to learn to recognize possible signs of abuse. Education in this area has to be comprehensive and build life skills in the children. Tools should be provided to caregivers in the areas of healthy parenting and understanding and recognizing signs of sexual abuse.

2 Collaboration between hotlines around the world to begin tracking infants and toddlers in child abuse imagery. This will provide a better breakdown of the age of the children in images and assist in providing accurate numbers about whether there is a growing audience for images of very young children being abused. This could prompt important dialogue regarding prevention strategies to better protect pre-school children.

3 Consideration should be given to gender-related education. With an over-representation of girl children in sexual abuse images, supplementary prevention material should be created for them, and should specifically target girl-centered environments (i.e. Girl Guides). This may help in the effort to educate girls about sexual abuse, how to recognize it and to report abusive behaviour.

**4** Explore additional opportunities to work with law enforcement and Internet service and content providers to remove illegal content from Canadian servers.

5 Establish international standards for the personal information a registrant is required to provide when registering a new domain name. This could include proof of name and address, residency in a particular country, and contact information. This information could be valuable in the event of an investigation, assisting in determining the owner of a child pornography website, and potentially rescuing children from ongoing sexual abuse. This would require collaboration with the Internet Corporation for Assigned Names and Numbers.

6 Partner with domain name registrants to have domains hosting illegal content discarded from use. This would prevent new website owners from purchasing domains known to host child pornography and reusing them for the same purpose. Due to the fact that the domain names become important marketing tools, and become well-known to consumers of child abuse images, steps need to be taken to remove them permanently from circulation.

7 Further research is needed on the impact of child sexual abuse on victims and whether the Internet has changed the nature and extent of their trauma and their healing process. Are victims impacted differently if they know photographs have permanently recorded their abuse? What if they are aware that the images are being distributed and propagated on the Internet? Understanding the impacts could provide better treatment for victims, and guide how victims should be supported and managed through the criminal justice system.

8 Further collaboration and data sharing is needed between organizations dealing with this content area. Assessment of images by tiplines is likely duplicated given the high percentage of child sexual abuse images analyzed on more than one occasion. A collaborative database of SHA-1 values (centralized or decentralized) could have a significant impact on reducing resource requirements and exposure to imagery.

9 Further research is needed to determine how words are being used on websites hosting child sexual abuse images. Websites containing child abuse material could be automatically identified using this word data set and a probabilistic algorithm. This data set could also be queried for new and emerging terms/words used amongst individuals who seek or trade child sexual abuse content.

10 Carefully track the use of unique title bars on websites hosting child abuse images. Following the movement of these websites will provide a clearer picture of how content moves on the Internet.

11 Establish a coalition of stakeholders, similar to the Financial Coalition in the US, to develop solutions to the commercial aspects of child sexual abuse images. This would involve working with partners in law enforcement, the financial industry, and Internet service and content providers to follow the websites to their source and eradicate the problem.

12 When a site has been identified as fast flux, it is possible to determine which IP addresses are being used to serve the content. Tiplines around the world could work with Internet service providers to notify them of compromised computers on their network. An Internet service provider could choose to suspend the customer's service until the infected machine is fixed.

While there are a multitude of challenges in addressing Internet-facilitated child sexual exploitation, this report specifically deals with the aspect of online child sexual abuse images. As such, the following recommendations focus predominantly on education strategies for tackling and disrupting the availability of these images on the Internet. Most notably, education and awareness building are suggested in the following areas:

Priorities for education	
Children and Youth	Educating children on sexual abuse and how to recognize inappropriate behaviour
	Promoting disclosure to trusted adults
	Knowing the difference between healthy and unhealthy relationships
	Understanding the permanence of images distributed online or through other means (cell phones, web cameras, thumb drives, etc.)
Parents	Learning how to educate children about sexual abuse and promoting disclosures
	Recognizing the signs of child sexual abuse
	Reinforcing the obligation to report suspected abuse
	Encouraging early intervention with experts if their child has been abused
Adults who work with children (teachers, child care workers, community clubs, etc.)	Learning about child sexual abuse and how to recognize inappropriate adult behaviour
	Learning how to educate children about sexual abuse
	Creating environments that promote child disclosures and adult reporting of abuse and inappropriate behaviour
	Incorporating tools over and above criminal record and child abuse registry checks
Child welfare agencies	Recognizing how child sexual abuse has broadened in scope through the use of the Internet
	Exploring the connection between offenders who access or possess child abuse images and the commission of sexual offences against children
	Adapting sexual abuse interviews with children to determine whether the abuse has been recorded (i.e. photographs, videos, audio)
Industry	Financial: Understanding the financial aspects of child sexual abuse and how money can be exchanged between offenders
	Internet: Establishing standards for the registration of Internet domain names
	Internet: Expanding and enhancing technical or collaborative solutions to remove illegal content from the Internet
	Academia and research: Conducting and sharing research on exploitative child modelling and its potential connection to child sexual abuse images
General public	Understanding what child pornography is—the harm, the permanence, the age of the children, and the fact that it is a record of child sexual abuse
	Dispelling myths about the harm of child sexual abuse images and stereotypical sex offenders (tying a person's character to whether or not s/he may or may not have a sexual interest in children)
	Separating Internet safety education from child sexual abuse prevention
	Recognizing the importance of reporting suspected child sexual exploitation, particularly as it relates to possible offenders or child victims
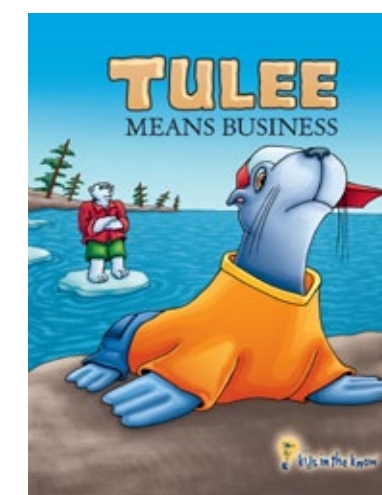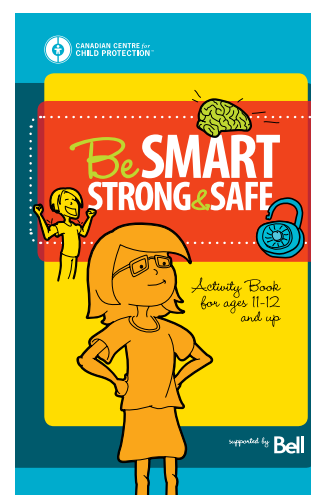
The above are some examples of educational material produced by the Canadian Centre for Child Protection for children, parents and teachers.

8 CYBERTIP.CA

8.1 Cybertip.ca history

1999 In 1999, the Canadian Centre for Child Protection (formerly known as Child Find Manitoba) recognized a gap in the area of child protection. The Internet was becoming increasingly popular, but there was no simple mechanism for Canadians to report potentially illegal activity they encountered online. As a result, the Canadian Centre set out to establish a tipline to accept reports relating to online child sexual exploitation.

Before establishing Cybertip.ca, the Canadian Centre for Child Protection did extensive research into effective program design. In particular, Cybertip.ca modelled its early operations on the National Center for Missing and Exploited Children's CyberTipline in the United States (established in 1998) and the Internet Watch Foundation in the United Kingdom (established in 1996). Cybertip.ca also worked in consultation with the Government of Manitoba, the Children Online Protection Committee, the Government of Canada, a National Law Enforcement Advisory Committee, Federal Task Force and Steering Committees, a Technical Committee, and an Educational Standards Task Force.

2002 On September 26, 2002, Cybertip.ca was officially launched as a Manitoba pilot project.[24] In its first couple of years, the tipline's technical capacity and operations were refined, and public awareness activities were undertaken with a mostly provincial focus. Throughout this time, the tipline was also working on establishing relationships with other provincial governments, law enforcement agencies, and private sector companies. Letters of support for Cybertip.ca were sent from every province and territory to the federal government.

2004 In May 2004, the Government of Canada recognized and announced Cybertip.ca as Canada's national tipline for the public reporting of online child sexual exploitation. It was one of three components of the National Strategy to Protect Children from Sexual Exploitation on the Internet, along with funding for public awareness and the RCMP's National Child Exploitation Coordination Centre (NCECC), which coordinates and supports national child sexual exploitation investigations.

Shortly thereafter, Cybertip.ca coordinated a meeting with Internet service providers, federal and provincial departments, and law enforcement agencies to discuss a coordinated, voluntary, and broad-based strategy to address, in particular, child pornography. The meeting resulted in the formation of the Canadian Coalition Against Internet Child Exploitation (CCAICE), which has since expanded to include members from non-governmental organizations and the financial and search engine sectors. Some key CCAICE initiatives include: public awareness, Cleanfeed Canada, email spam blocking, and information sharing between partners.

2005 Cybertip.ca was officially launched nationally at a press conference in Ottawa on January 24, 2005.[25] The announcement also kicked off a pan-Canadian public awareness campaign to connect child pornography to child abuse and increase reporting to the tipline. Since that time, numerous public awareness campaigns have been conducted.

The tipline has continued to grow and improve its operations since its public launch. In 2005, Cybertip.ca was voted in as a member of the International Association of Hotline Providers (INHOPE), building partnerships with similar hotlines around the world and facilitating the sharing of potentially illegal information. Similarly, Cybertip.ca continues to work with law enforcement agencies across Canada to ensure that child exploitation reports are forwarded to the correct jurisdiction. To date, 59 different agencies have received reports.

As new trends and patterns of sexual exploitation are identified, the tipline creates material to address the changing needs and safety strategies of online Canadians. New education programs for children, parents, industry, and community are being developed on an ongoing basis. Additionally, technical solutions are being implemented to reduce Canadians' exposure to child pornography material. The Canadian Centre for Child Protection will continue to build upon the success of Cybertip.ca and work toward ensuring that children are protected and safe.

2009 On February 10, 2009, the Government of Canada announced the renewal of its National Strategy for the Protection of Children from Sexual Exploitation on the Internet, which includes renewable funding for Cybertip.ca. This continued partnership and the generous support of the federal government will help reduce child victimization and ensure all Canadians have access to our programs and services.

Government of Canada Gouvernement du Canada

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24 A press conference was held at RCMP D Division headquarters to announce the launch of Cybertip.ca. Speakers included: Lianna McDonald, Executive Director of the Canadian Centre for Child Protection; the Honourable Gord Mackintosh, Provincial Minister of Justice and Attorney General of Manitoba; the Honourable Martin Cauchon, Federal Minister of Justice and Attorney General of Canada; the Honourable Rey Pagtakhan, Secretary of State for Science, Research and Development Canada; Gerry Braun, Commanding Officer of RCMP D Division; Jack Ewatski, Chief of Police of Winnipeg Police Service; and Roger Balance, Vice President of Marketing from private sector partner MTS.

25 The launch event was held at the Chateau Laurier in Ottawa, Ontario. Speakers included: Lianna McDonald, Executive Director of the Canadian Centre for Child Protection; Signy Arnason, Director of Cybertip.ca; the Honourable Anne McLellan, Deputy Prime Minister and Minister of Public Safety and Emergency Preparedness; the Honourable Irwin Cotler, Minister of Justice and Attorney General; the Honourable Gord Mackintosh, Manitoba Minister of Justice and Attorney General; the Honourable Monte Kwinter, Ontario Minister of Community Safety and Correctional Services; the Honourable Michael Bryant, Ontario Attorney General; and Giuliano Zaccardelli, Commissioner of the RCMP.

8.2 Analyst training

Cybertip.ca has been recognized by the federal government, provincial governments, and domestic law enforcement agencies for its expertise in assessing the illegality of online content. Analysts are trained on an ongoing basis, through a program developed in consultation with law enforcement, justice officials, and child development experts. Topics of particular focus include:

▸ Assessing the approximate age (through sexual maturation rate) of child victims in abuse images

▸ Online technology and Internet platforms

▸ Understanding child sexual exploitation

▸ Complaint analysis, triaging, and report preparation

All analysts obtain Special Constable Status for the purpose of carrying out their duties, as well as attend the Canadian Centre for Child Protection's annual Missing and Exploited Children Conference and other specialized training conferences. Approved by the National Law Enforcement Committee, Cybertip.ca's Policy and Procedure Manual serves as a principal operating and training guide for management and staff.[26]

All analysts obtain Special Constable Status for the purpose of carrying out their duties.

26   Officers with the RCMP D Division and Winnipeg Police Service are encouraged to conduct reviews to ensure that Cybertip.ca's handling of reports complies with the tipline's Policy and Procedure Manual.

8.3 How Cybertip.ca works

Cybertip.ca's mandate is two-fold. In addition to receiving and addressing child sexual exploitation reports from the public, the tipline also responds to direct requests for educational material. As of March 31, 2009, Cybertip.ca had provided information to 4,181 families who called the tipline's toll-free line or submitted a request through the online report form. The information for families is based on trends and patterns observed by Cybertip.ca and research into preventative education.[27] There is also educational material available at www.cybertip.ca, where 294,986 safety sheets have been downloaded.

TABLE 8.1 Cybertip.ca flowchart of reported information

	An individual comes across information or possible evidence of online child sexual abuse.
	They go to **www.cybertip.ca** or phone **1-866-658-9022** to report the sexual exploitation. Reports can be submitted anonymously.
	The Cybertip.ca webserver receives the information in a secure fashion.
	A report is prioritized for analysis based on the information it contains and then according to the order it was received. If it contains information about a child victim or suspect, the report is given priority for analysis.
	The analyst breaks the report into its component parts based on the number of technology types in a report. For example, one public report may contain information about an email and a website. This would be considered two separate incidents, as they have to be analyzed independently.
	Each incident is assigned a secondary (Cybertip.ca) classification based on the Criminal Code (Canada). This is either a confirmation or a correction of the public classification.
	The analyst validates the reported incidents and supplements the information through Internet searches and technology tools. All aspects of the incident are described.
	If the incident is a website with child sexual abuse images, the analyst describes the image and assigns a rating based on the severity of the abuse depicted (from 1 to 4), the sexual maturation (from 1 to 5) to provide an approximate age range, and the sex.
	If the incident relates to potentially illegal material, it is sent to the appropriate law enforcement jurisdiction and/or INHOPE partner hotline. Reports that involve a child in possible need of protection are also forwarded to child welfare agencies in Canada.

Over 30,300 public reports have been submitted to Cybertip.ca as of March 31, 2009.

Cybertip.ca has analyzed 46,331 incidents, an average of 1.5 per public report.

17,806 (38.4%) incidents were classified by analysts as confirmed child pornography.

15,662 incidents related to websites hosting child pornography.

4,110 unique images with associated severity and sexual maturation as well as the sex of the child are described in this report.

22,500 incidents were forwarded to law enforcement and/or international hotline partners for possible investigation.

27 The Canadian Centre for Child Protection's educational program, Kids in the Know, uses information identified in Cybertip.ca reports to develop comprehensive prevention strategies for children and families. Kids in the Know includes lesson plans and interactive activities for teachers of students in kindergarten through high school, including books and puppets, online activities for families, and training for educators and communities. For more information, please visit **www.kidsintheknow.ca**.

8.4 Cybertip.ca reports

Between September 26, 2002 when Cybertip.ca was launched as a provincial pilot program and March 31, 2009, the tipline received 30,373 reports from the public.

While the majority (93.6%) of reports are submitted online at **www.cybertip.ca/report**, 3.7% of reports have been submitted by email from designated law enforcement agencies and public entities. Cybertip.ca analysts are also available 24 hours a day to accept public reports through a toll-free telephone line (2.4%).

- Child pornography (89.6%)
- Luring (7.9%)
- Child prostitution (1.5%)
- Child sex tourism (0.9%)
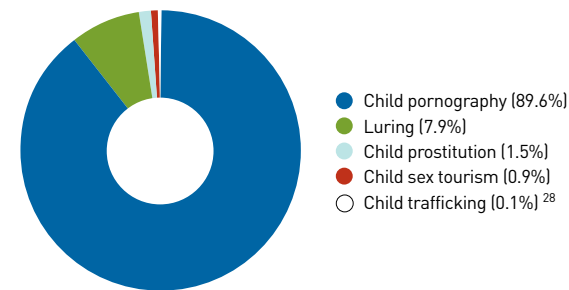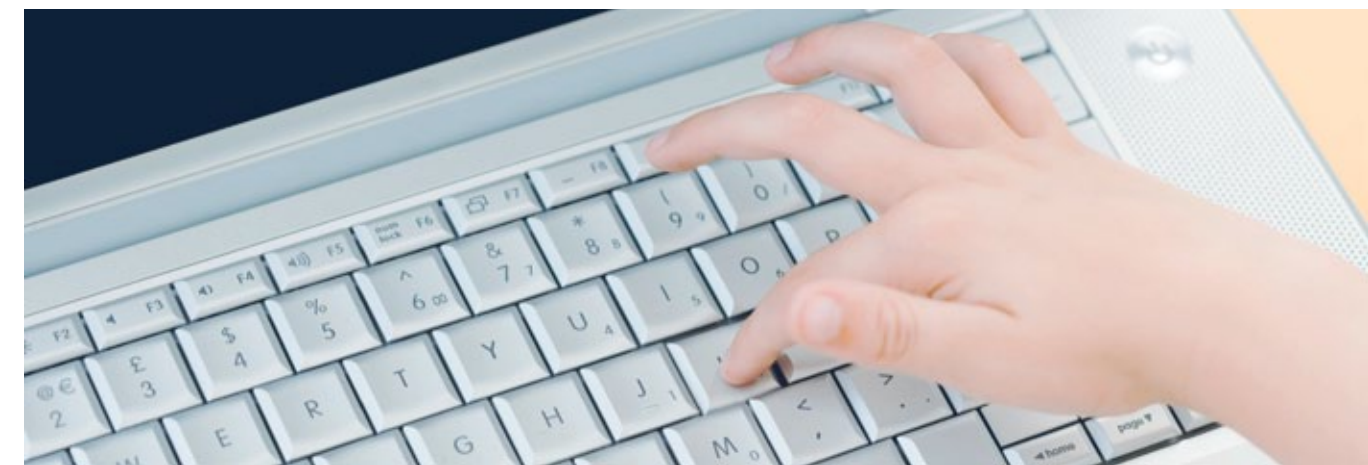- Child trafficking (0.1%) [28]

Figure 8.1: Type of reports submitted to Cybertip.ca (as classified by the reporting person)

1 in 10 reports was submitted in French.

28   Child trafficking was added to the report form on October 30th, 2008.

8.5 Report triaging and analysis

Reports submitted online are automatically triaged by the Cybertip.ca system depending on the information they contain. Reports indicating that a child may be in imminent danger or those providing suspect or victim information are considered a higher priority and are processed first. Cybertip.ca analysts are mandated to analyze and forward potentially illegal reports to law enforcement within a 48 hour time frame. Reports that identify a child potentially in need of protection are forwarded immediately.

Information provided by the reporting person is not altered in any way; analysts supplement reports through additional information, but do not change what was submitted. However, after prioritizing reports, analysts review and validate the information that has been provided. On occasion, if the reporting person has identified themselves, an analyst may contact them for clarification or further details if the report does not contain enough information to indicate an offence may have occurred.

Analysis and confirmation of the information provided is done using many different resources. For example, analysts use Cybertip.ca tools to track location (geographical, Internet protocol (IP) address and uniform resource locator (URL)), and associated Internet service providers of online material. The Cybertip.ca system also catalogues the hash values (see below) associated with any images, and provides a count of previously analyzed images based on known hash values.[29]

SHA-1 Hash Value

SHA-1 hash is a mathematical function that is calculated based on the contents of a message (text string, image, file, etc.). It is a fixed-length code that, like a human fingerprint, is unique to a particular message. If the message is modified in any way (e.g. an image is re-sized, cropped, renamed, or saved in an image-editing program), the SHA-1 will change to a completely different value.

For example:

The SHA-1 for ¨**Cybertip.ca**¨ is: 402A1623480C3A178AF06063AB47C1C0F439AAC0
The SHA-1 for ¨**www.cybertip.ca**¨ is: 7DFC47130B773D3A3AC12D90B0ADEC5929E31283

It is not possible to reconstruct or view an original message based on its SHA-1 value. However, given the impossibility[30] of finding two SHA-1 values that are exactly the same, Cybertip.ca uses hash functions to determine whether child abuse images have been analyzed previously. The tipline is then able to store and transmit (to law enforcement) SHA-1 values rather than the illegal images themselves. If a hash value is recognized as having been analyzed previously, it can be temporarily blocked from the analysts' view by the Cybertip.ca system. This allows for a more thorough analysis of child abuse images while preventing the re-victimization of children in the images through the repeated viewing of their abuse.

If suspect information is provided, analysts use a variety of approaches to confirm or augment this information. All past reports are compared for similarities. Analysts check whether email addresses are valid, and verify or add to name, address, telephone contact information, and online pseudonyms using various online directories. These varied searches consider the different areas of the Internet such as forums, newsgroups, and subculture-based social networking or blog websites.

8.6 Classifying reports

While verifying and supplementing reports, analysts consider the classification given by the reporting person, and either confirm or amend the classification based on an extended list of options. A number of the analyst classifications are further refinements of the public's classifications and are linked to specific Criminal Code (Canada) violations. The remaining categories specify material that is not considered illegal, is outside of Cybertip.ca's mandate, or cannot be accessed. See figure 8.3 for an outline of how analyst classifications are assigned.

Having a secondary Cybertip.ca classification allows analysts to be more specific with the reported incident(s). This more accurately reflects what the public is reporting to Cybertip.ca, as well as provides law enforcement with further information about potential crimes being committed and/or concerning activity. Additionally, by sub-classifying reports, analysts are able to break public reports down, thereby providing a clearer picture of the independent incidents. The 30,373 public reports to Cybertip.ca resulted in 46,331 analyst-classified incidents, an average of 1.5 incidents per report.

1. A member of the public comes across what they believe to be child pornography. When s/he submits a report to Cybertip.ca, s/he provides a classification and a technology type. There are 5 report classifications and 10 technology classifications available to the public.

Classification:	Child pornography
Technology:	Email

2. Cybertip.ca analysts review the reported information, break it into component parts, and assign a classification and technology type to each incident. Each incident is then analyzed separately.

Incident 1:	Child pornography confirmed
Technology:	Email, spam
Info:	Contains links to 2 websites

Incident 2:	Child pornography unconfirmed
Technology:	Website
Type:	Portal

Incident 3:	Child pornography confirmed
Technology:	Website
Type:	Thumbnail gallery

Figure 8.2 Analyst reclassification of reports into Cybertip.ca incidents. In this example, the email report contains links to two websites, resulting in three analyzed incidents.

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29   The Cybertip.ca database is currently capturing SHA-1, SHA-256, and MD5 hash values for all images, however, for the purposes of this report, we will be referring to the SHA-1 as the image hash value.

30   The likelihood of finding two naturally-occurring SHA-1 hashes that are identical is 2^{80}.

ANALYST DECISION TREE: DETERMINING THE CLASSIFICATION OF WEBSITE INCIDENTS

Has the reporting person provided enough information?
— YES →
Can the website be accessed?
— YES →
Does the website contain pornography?
— YES →
Does the website contain potentially illegal images of children?
— YES →
Child Pornography (Confirmed)

Has the reporting person provided enough information? — NO →
Not Enough Information

Can the website be accessed? — NO →
Unable To Access or Account Locked Out

Does the website contain pornography? — NO →
Does it contain images of children?
— YES →
Are the children in a nudist/naturalist context on a nudist/naturalist website?
— YES →
Nudity

Does the website contain potentially illegal images of children? — NO →
Adult Content

Are the children in a nudist/naturalist context on a nudist/naturalist website? — NO →
Are the children portrayed as "models"?
— YES →
Exploitative Child Modelling

Does it contain images of children? — NO →
Does the website contain links to child abuse images and/or material?
— YES →
Child Pornography (Making Available)

Are the children portrayed as "models"? — NO →
Other Material

Does the website contain links to child abuse images and/or material? — NO →
Does the page claim to provide child abuse images for download?
— YES →
Child Pornography (Unconfirmed)

Does the page claim to provide child abuse images for download? — NO →
Is there text on the page related to the sexual exploitation of children?
— YES →
Is the text advocating the sexual exploitation of children?
— YES →
Child Pornography (Written)

Is there text on the page related to the sexual exploitation of children? — NO →
Outside Mandate or Offensive Material

Is the text advocating the sexual exploitation of children? — NO →
Does the text describe sexual activity with a child?
— YES →
Child Pornography (Written)

Does the text describe sexual activity with a child? — NO →
Pedophile Activity

Is the website located in Canada?
— YES →
Does the report contain suspect and/or victim information?
— YES →
Send report to the appropriate law enforcement and/or child welfare agencies*

Does the report contain suspect and/or victim information? — NO →
Can it be determined where in Canada the website is located?
— YES →
Send report to the appropriate Canadian law enforcement agency*

Can it be determined where in Canada the website is located? — NO →
Send report to the NCECC*

Is the website located in Canada? — NO →
Does the report contain suspect and/or victim information?
— YES →
Send report to the NCECC*

Does the report contain suspect and/or victim information? — NO →
Is the website located in a country with an INHOPE hotline?
— YES →
Send report to the appropriate INHOPE hotline

Is the website located in a country with an INHOPE hotline? — NO →
Send report to the NCECC*

Legend
- Analyst classification
- Decision
- Analyst action

This decision tree pertains to website reports that potentially relate to child pornography material. Separate decision trees would be applied to reports that may have the following classificiations: online luring, children exploited through prostitution, travelling sex offenders, child trafficking, and child sexual molestation.

* Any incidents involving identified Canadian children potentially in need of protection are forwarded to the appropriate child welfare agency.

Figure 8.3 Decision tree to assist analysts in assigning a secondary (Cybertip.ca) classification to website incidents that may relate to child pornography material.

TABLE 8.2 Secondary (Cybertip.ca) classification of analyzed incidents

Table 8.2 shows the way in which analysts classified incidents reported to Cybertip.ca. Not only does this re-classification correct errors that the public may have made, but it also provides further detail about the independent incidents taking place.

CHILD PORNOGRAPHY (CONFIRMED) – includes all child pornography material per the Criminal Code (Canada) definition including child abuse images, written material, audio recordings, and providing access to child pornography.	17,806	38.4%
CHILD PORNOGRAPHY (UNCONFIRMED) – applied when material believed to be child abuse images is being made available, but the material is not accessible to analysts. It also applies to images that are suspicious, but not of sufficient quality or accessibility to make a certain evaluation as to the material's potential illegality. These are still forwarded to law enforcement.	3,456	7.5%
ONLINE LURING – pertains to reports where a child has been coerced online to create child pornography, engage in physical sexual activity, or meet for a sexual purpose.	493	1.1%
CHILDREN EXPLOITED THROUGH PROSTITUTION – applied when reports include information relating to any of the child prostitution offences – soliciting, procuring, and living off the avails.	39	0.1%
TRAVELLING SEX OFFENDERS – pertains to reports involving individuals who have travelled or are planning to travel to a foreign country in order to sexually exploit children.	24	0.1%
CHILD TRAFFICKING – includes reports where an individual recruits, transports, transfers, receives, holds, conceals, or harbours a child, or exercises control, direction, or influence over the movements of a child for the purpose of exploiting them or facilitating their exploitation. This can occur within Canada or within or among other countries.	1	0.0%
EXPLOITATIVE CHILD MODELLING – includes images where children are posed provocatively in various outfits; however, genitals are not exposed in the images. Analysts assess and record any commercial aspects to such sites, which may lead to illegal child pornography material.	1,925	4.2%
CHILD SEXUAL MOLESTATION – pertains to reports involving a child victim who has been allegedly sexually abused and the victim and/or a suspect is named in the report. Child protection agencies may also be notified on these reports.	165	0.4%
PEDOPHILE ACTIVITY[31] – includes reports where an individual has demonstrated or has claimed to have a sexual interest in children, but has not committed a known offence under the Criminal Code (Canada). It also pertains to websites or other media that refer to pedophilic activity or child sexual exploitation but fall short of committing an offence.	704	1.5%
ADULT CONTENT – includes pornography and other material that has been deemed offensive, as well as nudity in non-illegal settings (e.g. nudist camps).	7,758	16.7%
OUTSIDE MANDATE – includes anything that does not fall under Cybertip.ca's mandate of addressing child sexual exploitation. For example, the tipline has received a number of reports relating to online economic crime. If these reports pertain to potentially illegal activities, they are still forwarded to law enforcement, but they are not given further analysis by Cybertip.ca.	2,963	6.4%
UNABLE TO ACCESS – this includes reports that can not be further verified due to a lack of information, an account that has been locked out, or a website that has been shut down or otherwise removed from its reported location.	10,997	23.7%
TOTAL NUMBER OF INCIDENTS	46,331	100%

31 The term "pedophile" is not to be mistaken for a clinical diagnosis, which Cybertip.ca is not in a position to apply. This incident type refers to activities that may be considered by the public to be pedophilic in nature.

8.7 Addressing illegal activity

Incidents are analyzed by Cybertip.ca within 48 hours. If they potentially contravene the Criminal Code (Canada), they are further processed in one of three ways:

1 Incidents that are determined to have occurred in Canada are forwarded to the appropriate law enforcement agency within Canada. In cases where it is suspected that a Canadian child may be in need of protection, the appropriate child welfare agency is also notified.

For example, if an incident occurs in Toronto, it will be forwarded to the Toronto Police Service Child Exploitation Section. If incidents appear to have occurred in Canada, but there is no information about the specific jurisdiction, or if incidents potentially require coordinated or specialized efforts from multiple jurisdictions, the report is forwarded to the RCMP's National Child Exploitation Coordination Centre (NCECC).

Cybertip.ca reports have resulted in at least 40 Canadian arrests and 4 arrests of individuals outside of Canada.

2 Website incidents that are determined to have occurred outside of Canada in a country that has a partner INHOPE hotline are forwarded to that particular hotline and summarized regularly for the NCECC.

For example, if a website hosting child abuse images is determined to be hosted in the United States, the report is forwarded to the CyberTipline, who then analyzes and forwards the report to the specific US law enforcement jurisdiction per its policies.

CYBERTIP.CA IS A MEMBER OF INHOPE, AN INTERNATIONAL ASSOCIATION OF INTERNET HOTLINES. Cybertip.ca collaborates with member hotlines to share expertise about issues relating to child sexual exploitation and establish best practices for receiving and processing reports. Currently, there are 29 member countries with an INHOPE hotline. Hotlines undergo a detailed process to become members of INHOPE.

3 Website incidents that are determined to have occurred outside of Canada in a country that does not have a partner INHOPE hotline are forwarded to the NCECC. The NCECC then works with its international law enforcement partners to potentially forward and/or investigate the incident.

For example, a child pornography website determined to be hosted in Panama is forwarded to the NCECC, who would coordinate with a law enforcement agency in Panama or Interpol as necessary.

Public reports to Cybertip.ca resulted in law enforcement executing 44 arrests between September 26, 2002 and March 31, 2009. At least 21 children were removed from abusive environments.

Often, potentially illegal incidents are forwarded to a single law enforcement or INHOPE agency. However, the universal nature of the Internet and the complexities of some of the crimes being committed means that an individual incident may be forwarded to multiple agencies. For example, if the suspect in a luring incident is believed to reside in Edmonton, but the victim is from Fredericton, the report would be forwarded to law enforcement in both jurisdictions to ensure collaboration for the gathering of evidence. **Among the 46,331 incidents, 22,500 (48.6%) were determined to be potentially illegal and were forwarded to at least one law enforcement agency or INHOPE hotline.**

> The universal nature of the Internet and the complexities of some of the crimes that are being committed means that an individual incident may be forwarded to multiple agencies.

48.6% OF INCIDENTS ARE FORWARDED TO LAW ENFORCEMENT AND/OR AN INTERNATIONAL HOTLINE PARTNER.

CASE EXAMPLE

Cybertip.ca received a report from a concerned father in Australia who discovered that his 9-year-old daughter had been conversing with an adult male. A second report came several months later from the concerned parent of another 9-year-old girl in Texas who had also been conversing online with an adult male. Since the email addresses in both reports were identical, the reports were sent to the NCECC, as no definitive location could be established for the suspect. The NCECC had independently received information about five other victims connected to this suspect which they combined with the intelligence received from Cybertip.ca. The NCECC was able to trace the suspect to Toronto and sent reports to the Toronto Police Service. Toronto Police performed an undercover operation and a suspect was arrested and charged with two counts of luring a child under 14 years of age, invitation to sexual touching, accessing child pornography, possessing child pornography, and indecent exposure.

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