



UNODC

United Nations Office on Drugs and Crime

BACKGROUND PAPER

TOWARDS ZERO

*AN INITIATIVE TO REDUCE THE AVAILABILITY OF
CHILD SEXUAL ABUSE MATERIAL ON THE INTERNET*



EXPERT GROUP MEETING CO-HOSTED BY UNODC AND THE UK
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Background Paper

Towards Zero

An Initiative to reduce the availability of child sexual abuse material on the internet

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1 Abstract

The existence of an image of a child¹ being sexually abused is both evidence of a crime and evidence of a societal failure to prevent a serious form of violence occurring in the first place. Such images may take the form of still pictures or videos. Together these are referred to as “child sexual abuse material” (CSAM)²³. The publication or distribution of CSAM constitutes a major violation of the rights of the child depicted, including in particular the child’s right to human dignity, privacy and healthy development.⁴ Moreover, CSAM is highly gendered. Although it is certainly the case that significant numbers of boys feature in CSAM, overwhelmingly the victims are girls.

While action to prevent child sexual abuse from happening in the first place has to remain a priority for all concerned, it must also be recognised that the existence and online circulation of CSAM has distinct and additional dimensions of violence which go well beyond the harms done to the individual child. They have significant detrimental economic and wider societal consequences. Addressing these requires specific responses.

It should be noted that the known volumes of CSAM circulating on the internet, already substantial, are still growing. As ever larger numbers of people around the world acquire the ability to connect to the internet, absent countervailing measures, the problem will only expand exponentially. It is likely to have disproportionately adverse effects on a number of low- and middle-income countries.

This paper provides a brief historical background to the challenges CSAM presents together with a description of scalable, technical solutions and implementation mechanisms which already exist to address it.⁵ The fact that these solutions and mechanisms already exist and are being used, albeit not on a large enough scale, underpins the optimistic outlook which runs through this document. The task in hand is to find ways to ensure these mechanisms and solutions are deployed on a much larger scale and more consistently under an accountability structure that reflects public expectations and satisfies the common desire for better child protection on the internet.

The paper suggests there are significant economic costs associated with CSAM and calls for renewed or revised concerted action by State and non-State actors, including in particular economic and financial actors.

¹ As per Article 1 of the Convention on the Rights of the Child (CRC), the internationally accepted definition of a child is a person under the age of 18.

²<https://www.ohchr.org/en/instruments-mechanisms/instruments/optional-protocol-convention-rights-child-sale-children-child>, Article 2 c et seq, especially Article 8 & 9. See also General Comment 25 on the CRC, in particular paras 8, 23-26, 28, 81,82, 95, 96 and Section XII.

³ In some jurisdictions “child pornography” or “indecent images of children” are the legal terms still used in certain circumstances but “child sex abuse materials” (CSAM) is the preferred description among child care advocates, professionals and many law enforcement agencies.

⁴ See [CRC](#) in particular Articles 6 and 19.

⁵ This paper was developed as a starting point for the discussions of the Expert Group Meeting on Removal of Child Sexual Abuse Material (CSAM) from the internet, organised by UNODC in Vienna on 26 and 27 June 2023. A more comprehensive document, reflecting the different positions expressed during the meeting, will be issued after the meeting.

2 The Challenge

2.1 The growth of CSAM on the internet



In 1997 in the United Kingdom, in a report into child sexual abuse in orphanages and other residential settings for children being looked after, typically by state agencies, Sir William Utting described the production and exchange of CSAM as a “cottage industry”⁶. This may have been the last time anyone could have said that. The internet was on the edge of becoming a mass consumer product which would reach into every corner of the world. From 1997 to 2021, the number of internet users globally would grow from around 70 million to over 5.3 billion⁷. This reflected three major converging trends: the falling cost of hardware, especially mobile and handheld devices, the falling cost of communications, provided in particular through the wider availability of fast Wi-Fi access, and the improvements in user interfaces meaning it became easier for more and more people to go online. Little or no technical knowledge or induction was required.

⁶ <https://1drv.ms/b/s!AsCQDVp4UDfehosK3Yj8L0nmRtroIw?e=whbh0i> pp.9.20.

⁷ <https://www.internetworldstats.com/stats.htm>

WORLD INTERNET USAGE AND POPULATION STATISTICS 2023 Year Estimates						
World Regions	Population (2022 Est.)	Population % of World	Internet Users 31 Dec 2021	Penetration Rate (% Pop.)	Growth 2000-2023	Internet World %
Africa	1,394,588,547	17.6 %	601,940,784	43.2 %	13,233 %	11.2 %
Asia	4,352,169,960	54.9 %	2,916,890,209	67.0 %	2,452 %	54.2 %
Europe	837,472,045	10.6 %	747,214,734	89.2 %	611 %	13.9 %
Latin America / Carib.	664,099,841	8.4 %	534,526,057	80.5 %	2,858 %	9.9 %
North America	372,555,585	4.7 %	347,916,694	93.4 %	222 %	6.5 %
Middle East	268,302,801	3.4 %	206,760,743	77.1 %	6,194 %	3.8 %
Oceania /Australia	43,602,955	0.5 %	30,549,185	70.1 %	301 %	0.6 %
WORLD TOTAL	7,932,791,734	100.0 %	5,385,798,406	67.9 %	1,392 %	100.0 %

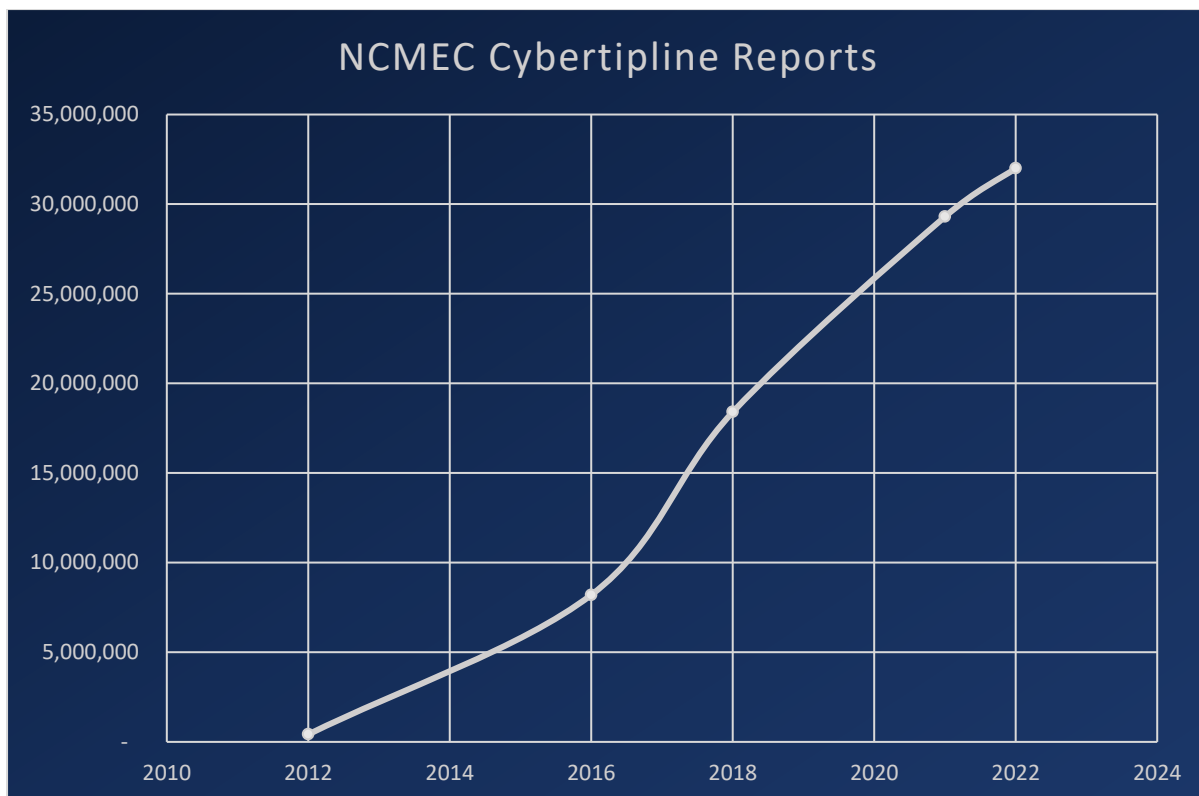
NOTES: (1) Internet Usage and World Population Statistics estimates are for June 30, 2022. (2) CLICK on each world region name for detailed regional usage information. (3) Demographic (Population) numbers are based on data from the [United Nations Population Division](#). (4) Internet usage information comes from data published by [Nielsen Online](#), by the [International Telecommunications Union](#), by [GfK](#), by local ICT Regulators and other reliable sources. (5) For definitions, navigation help and disclaimers, please refer to the [Website Surfing Guide](#). (6) The information from this website may be cited, giving the due credit to www.internetworldstats.com. Copyright © 2022, Miniwatts Marketing Group. All rights reserved worldwide.

In every jurisdiction for which data are available, the number of reports of CSAM being received by hotlines⁸ has been moving upwards. Rather than going too far back in time, a look at recent history ought to be sufficient to convey the present and likely future scale of the challenge, demonstrating the urgent need for action.

Differences in the way crimes against children are recorded and reported across jurisdictions make it difficult to make direct comparisons between countries or track the rate of growth in specific Member States. However, in relation to CSAM, drawn from a variety of sources, sufficient data do exist to allow trends to be traced with a substantial degree of confidence, across a broad range of jurisdictions and types of societies. No country appears to be exempt. People willing to make, exchange, publish, distribute and collect images of children being sexually abused exist everywhere and at all levels within the societies in which they live⁹.

⁸ The principal means for receiving reports concerning CSAM. See <https://www.inhope.org/EN>

⁹ <https://www.who.int/news-room/fact-sheets/detail/violence-against-children>



The above graph illustrates the exponential growth in reports received by the National Center for Missing and Exploited Children (NCMEC), based in the U.S.¹⁰. More specifically, in 2012, the NCMEC Cybertipline¹¹ received 415,650 CSAM reports. Ten years later, in 2022, in a report submitted to the United States Senate Judiciary Committee¹² the number of reports received by NCMEC had grown to 32 million. These reports contained 88 million individual files involving a variety of items relating to child sexual abuse, of which 56% were still images and 43% were videos.

The Internet Watch Foundation¹³ is another source of data. Its 2022 Annual Report¹⁴, indicated Europe remains the largest source of CSAM hosted online, accounting for 66% of the global total, with 18% traced to Asian countries, and 16% to North America.

The large numbers being seen today could mean there is now more CSAM in circulation or they could simply point to better detection. It is probably both. It appears that more companies are using proactive searching technologies to detect CSAM¹⁵. A global growth in hotlines and improved coordination and reporting capacity are also contributing factors. Documenting an instance of CSAM is now a more established skill.

¹⁰ <https://www.missingkids.org/> NCMEC is the hotline for the USA. Also see below at.

¹¹ [CyberTipline \(missingkids.org\)](https://www.missingkids.org/cybertipline)

¹² [https://www.missingkids.org/content/dam/missingkids/pdfs/Senate%20Judiciary%20Hearing%20-%20NCMEC%20Written%20Testimony%20\(2-14-23\)%20\(final\).pdf](https://www.missingkids.org/content/dam/missingkids/pdfs/Senate%20Judiciary%20Hearing%20-%20NCMEC%20Written%20Testimony%20(2-14-23)%20(final).pdf)

¹³ See below page.

¹⁴ <https://annualreport2022.iwf.org.uk/trends-and-data/geographical-hosting-urls/>

¹⁵ Checking files against a database of known material (CSAM) rather than relying on the public to discover and report them.

Against that background, how can the global community increase its ability to identify and act on images which have already been classified by trusted hotlines and/or police as CSAM?

2.2 CSAM – a highly gendered crime often involving very young children



In April 2022 the IWF published data showing that 97% of all CSAM identified in the previous year featured girls, as opposed to “only” 65% ten years previously. CSAM is a highly gendered phenomenon and over the years the IWF and all hotlines have observed a trend towards ever more violent depictions of sexual violence against children¹⁶ “*The images are horrific. Children, some just 3 or 4 years old, being sexually abused and in some cases tortured.*”

An analysis conducted by the Canadian Centre for Child Protection (C3P) in 2016 showed that 78% of the images Cybertip.ca¹⁷ examined contained depictions of children below the age of 12 and 63% of these were children under the age of 8. In these data samples 80% of the children were girls, and 19% were boys.¹⁸

Research also shows specific impacts on boys, with some studies stressing that boys feature more frequently in extreme imagery and that when boys are depicted in the abuse, it is more likely to involve paraphilic themes.¹⁹

While research on offender characteristics frequently indicates that most CSAM-related conduct is committed by adult men,²⁰ it has been stressed that most studies used samples of convicted persons rather than general population samples or samples of people seeking help and that CSAM offenders represent a heterogeneous group, who vary in their sexual preoccupation with CSAM and their motivation to offend.²¹

2.3 The Impact of CSAM on the Child

In 2016, C3P along with NCMEC and other experts from around the globe, launched the International Survivors’ Survey²² for adult survivors whose childhood sexual abuse was

¹⁶ [The Internet Is Overrun With Images of Child Sexual Abuse. What Went Wrong? - The New York Times \(nytimes.com\)](https://www.nytimes.com/2022/04/28/technology/child-sexual-abuse-images.html)

¹⁷ https://protectchildren.ca/pdfs/CTIP_CSAResearchReport_Summary_2016_en.pdf

¹⁸ <https://www.protectchildren.ca/en/resources-research/child-sexual-abuse-images-report/>

¹⁹ <https://ecpat.org/wp-content/uploads/2021/05/Technical-Report-TOWARDS-A-GLOBAL-INDICATOR-ON-UNIDENTIFIED-VICTIMS-IN-CHILD-SEXUAL-EXPLOITATION-MATERIAL.pdf>. Similar findings were reported by the Canadian Centre for Child Protection in 2016 – see <https://www.protectchildren.ca/en/resources-research/child-sexual-abuse-images-report/> at page 18.

²⁰ See, e.g. https://www.unodc.org/documents/commissions/CCPCJ/CCPCJ_Sessions/CCPCJ_23/E-CN15-2014-CRP1_E.pdf

²¹ <https://ecpat.org/wp-content/uploads/2021/05/ECPAT-International-Report-Trends-in-Online-Child-Sexual-Abuse-Material-2018.pdf>

²² https://protectchildren.ca/pdfs/C3P_SurvivorsSurveyFullReport2017.pdf

recorded and, in most cases, distributed online. Over the course of a year and a half, 150 survivors from various countries completed the survey and contributed invaluable insight into the unique historical and current challenges they have faced.²³ As the first generation of victims whose abuse has been/may have been posted or circulated online, these survivors provided critical information to identify gaps in the systems that respond to and support victims of this crime.

- 87% of the respondents were 11 years of age or younger when hands-on abuse began, and for 56% of the survivors, the abuse began before the age of four. Deeply concerning was the duration of the abuse, which for 36% of the survivors continued into adulthood.
- When asked how the existence of the images/videos impacted them differently from the child sexual abuse itself, survivors frequently spoke of the permanence of the images/videos and that if the material was distributed, their circulation will never end, which underscored the powerlessness they felt about the imagery/videos.
- Nearly 70% of respondents indicated they constantly worry about being recognized by someone who has seen images/videos of their abuse, and 30 respondents reported being identified by someone who has seen images/videos of their abuse.

In this context, for every image of child sexual abuse there are two components. There is the effect of the original abusive act depicted and there is the additional layer of harm caused by the child knowing or later learning that images of their abuse, pain and humiliation are now in circulation on the internet. This in turn further divides into two distinct categories: the impact on the individual's personal health and well-being and the impact on their lifelong economic prospects arising from post-traumatic stress disorder. Both components ought to be reflected in any macroeconomic calculation.

Most studies conducted so far look at the monetary cost of child sexual abuse at a very high level e.g. under a general heading of "child abuse or maltreatment" and they measure it largely or solely in terms of the consequential impact on public expenditure rather than its full macroeconomic impact. Alternatively, in the few major studies which directly refer to child sexual abuse, no mention was made of the internet. This is not surprising as until recently there was very little data available on the "internet dimension" raised here. The methodological challenges of estimating net macroeconomic impacts are formidable, which underlines the importance of commissioning the necessary research to establish the relevant parameters.

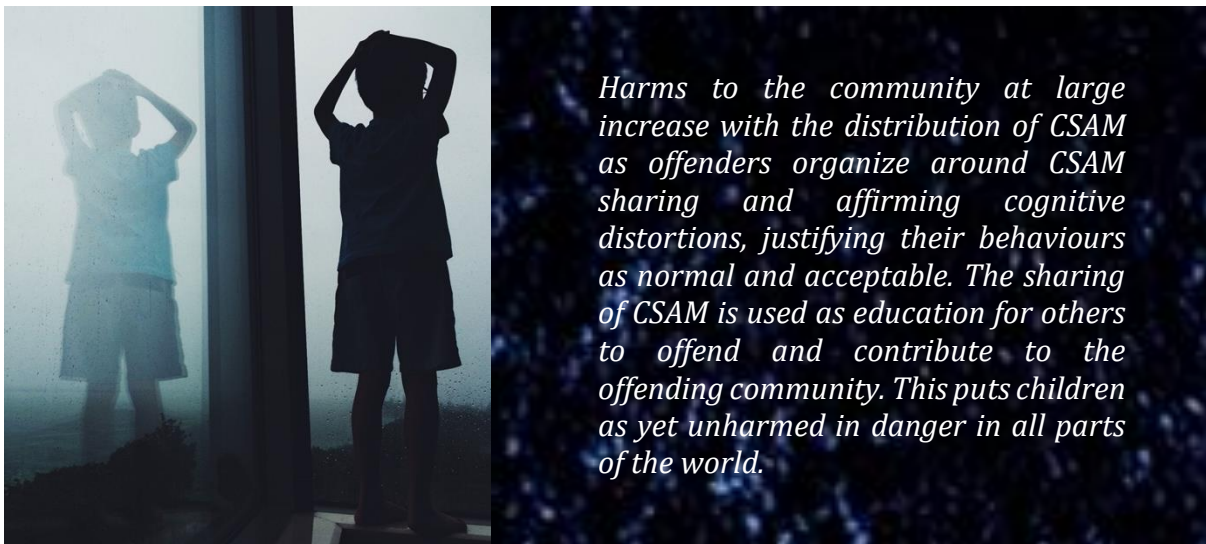
Existing data on the financial impact of child sexual abuse is presented in Appendix A. Appendix B presents further data on the microeconomic impact, that is to say the economic impact on individual children. It is important to bear in mind, however, that many children who are sexually abused, including those who are the subject of CSAM will never be identified and provided with the help they require. Yet they will suffer the damage.

²³ The survey was made available online over the course of several months in four different languages (English, French, Dutch and German). Respondents were not presented with multiple choice responses but were able to respond with as much or as little detail as they wished, and in their own language.

In terms of the impact on the person who was victim of online child exploitation and abuse, both during their time as children and as they grow into adulthood, there is a substantial body of clinical evidence showing the multiple adverse impacts of being sexually abused as a child.²⁴ In addition, we are now living in a time when a growing number of people who were abused as children are willing, as adults, to speak out publicly about what it meant for them at the time and what it has meant since^{25 26}. Some of these adults speak specifically about the dimension of their abuse which is the particular focus of this paper, namely abuse which has been recorded pictorially and distributed over the internet as CSAM.

2.4 The Impact of CSAM on Society

It has been observed how the arrival of the internet as a mass consumer product has changed both the nature and the volume of CSAM being produced and distributed. The internet has, on a global basis, helped establish communities of people with a sexual interest in children and an interest in making and distributing images of children being sexually abused. From living in a world where they had to keep their interests and habits secret from all but a handful of people, it became possible to find and connect with hundreds of thousands of others all over the world. This interconnectivity enabled them to communicate anonymously, to educate one another on how to groom children for abuse and how to hide their online tracks. For a great many this had the effect of “normalising” their behaviour, thereby helping to sustain and often expand it. As one convicted paedophile who also exchanged CSAM on a large scale put it “*I had friends all over the world. I never had so many friends before. It was great.*”²⁷



²⁴ [The Long-Lasting Consequences of Child Sexual Abuse | Psychology Today](https://www.cdc.gov/violenceprevention/aces/index.html); See also ACE (Adverse Childhood Experiences: <https://www.cdc.gov/violenceprevention/aces/index.html>)

²⁵ [Statement on behalf of the Phoenix 11: Survivors of child sexual abuse material demand action from tech one year after key players support online anti-exploitation principles – protectchildren.ca](https://www.protectchildren.ca)

²⁶ [Germany: Council to fight child sex abuse starts work – DW – 12/02/2019](https://www.dw.com/en/germany-council-to-fight-child-sex-abuse-starts-work/a-5111111)

²⁷ <http://news.bbc.co.uk/1/hi/programmes/panorama/1162880.stm>

3 Current Efforts

Action is required by both State and non-State actors.

The adoption of the Optional Protocol to the CRC in 2000 was the first major attempt by the United Nations and the international community to address CSAM through the mechanism of a legal instrument. This was a particularly important step because, from the late 1980s onwards, overwhelmingly the internet had not been meaningfully governed by cohesive policy frameworks enacted and agreed by Member States. Individual decisions made by private entities were driving change.

Of particular relevance to the issue of CSAM is section 230 of the Communications Decency Act, 1996²⁸, adopted in the USA. It contains a provision that was intended to promote the continued development of the internet by providing broad immunity for electronic service providers from liability for third party content transmitted via their services. The main intention of section 230 was to protect those electronic service providers that took steps to screen indecent and offensive material from their customers. It turned out very differently.

Section 230-type immunities were copied in many countries, perhaps most notably in the European Union with its adoption of the eCommerce Directive 2000.

These regulations gave online providers considerable protection from lawsuits and liability in respect of the activities of third parties who use their services to post content, including illegal content such as CSAM. This reduced the incentive for many individual platforms to seek a solution. Moreover, there were no or very few countervailing or balancing legal obligations, at least not concerning the protection of children²⁹.

There is no doubt that, eventually, some tech companies did begin to take measures to reduce the extent to which CSAM could circulate over their networks. While the law in the U.S. (where many online providers are based) did not require companies to proactively detect and delete CSAM, some did do so voluntarily. These efforts were significantly spurred on in 2009 by Microsoft's launch of PhotoDNA³⁰ which is a perceptual hashing algorithm that can assist in identifying material that is substantially similar to that which is represented by a cryptographic hash value. Other companies, such as Alphabet and Meta developed their own equivalent tools although it is understood they continue to use PhotoDNA as well. Google may deserve a special mention as it also developed and made available at no cost a Hash Matching API that had the ability to identify files that were visually similar to already classified CSAM and so were very likely to be CSAM.³¹ In effect these tools, known as "classifiers", flagged images and escalated them for attention by a human set of eyes. However, for all the public information

²⁸ 47 U.S. Code, s. 230.

²⁹ Rules later emerged in respect of copyright protection and a range of formal and informal practices developed around terrorist material.

³⁰<https://www.microsoft.com/en-us/photodna#:~:text=How%20does%20PhotoDNA%20technology%20work,copies%20of%20the%20same%20image>.

³¹ <https://safety.google/stories/hash-matching-to-help-ncmec/>

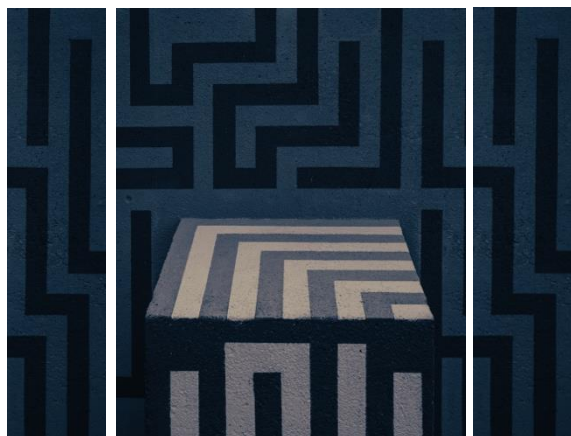
available about these tools, it should be noted there are at national level very few legally binding transparency obligations concerning whether or to what extent such tools are in fact being deployed or how effective they are. The major exception is Australia³². Compulsory transparency requirements are currently under consideration in Ireland, the EU and UK.

Australia was the first country to bridge the transparency gap through legislation. The legislation sets out expectations that online service providers take reasonable steps to keep Australians safe. The legislation also includes an obligation to respond to requests for information from the eSafety Commissioner about what steps the online business has in fact taken.³³

3.1 State Actors

The most basic requirement of the State is to create and maintain a legal framework which allows or requires action to protect children from violence by all relevant entities operating within its jurisdiction. This includes online businesses which allow users to exchange, store or publish images.

Since 2006, the International Center for Missing and Exploited Children (ICMEC) has been monitoring the 196 Member States of the United Nations in terms of their national legal framework as it impacts CSAM. ICMEC established a 5-point framework by which it categorised a country's existing provisions³⁴. The latest research report shows that, since 2006, 150 countries have refined or implemented anti-CSAM legislation. However, only *"140 countries criminalize simple CSAM possession, and only 125 countries define CSAM"* meaning 56 and 71 respectively do not³⁵.



Another key responsibility of States under international law, in particular the Convention on the Rights of the Child, is to enhance a protective environment for children to ensure they do not become victims of any form of violence. States have to ensure that the criminal justice system, and in particular law enforcement agencies, are adequately resourced, equipped and trained to prevent and respond to serious forms of violence against children, including CSAM related crimes. In addition, through social

services or related framework, States must devote adequate resources to supporting victims and helping them make the best possible recovery.

³² <https://www.esafety.gov.au/about-us/who-we-are/our-legislative-functions>.

³³ Reporting notices were sent by the Australian eSafety Commissioner to seven major service providers in August, 2022, and the responses were made publicly available in December, 2022, see: <https://www.esafety.gov.au/sites/default/files/2022-12/BOSE%20transparency%20report%20Dec%202022.pdf>

³⁴ <https://www.icmec.org/category/child-sexual-abuse-material-child-pornography/>

³⁵ <https://cdn.icmec.org/wp-content/uploads/2018/12/CSAM-Model-Law-9th-Ed-FINAL-12-3-18-1.pdf>

INTERPOL, and a range of national police forces, for example through mechanisms such as the Virtual Global Taskforce³⁶ have prioritized action against CSAM. G7³⁷ and other gatherings of Ministers have frequently made declarations or statements about the priority they attach to improving online child protection.

There is a recognition that voluntary measures on the part of companies have not delivered comprehensively, consistently or fast enough. In a tacit rejection of self-regulation as the principal tool in tackling CSAM, more and more jurisdictions are turning to legislative and legally enforceable regulatory measures³⁸. The European Union³⁹, the UK⁴⁰, Australia⁴¹, have been particularly active in that regard. More are expected to follow.

3.2 Public Private Partnerships

An impressive array of voluntary initiatives are in place which engage a wide range of state actors, industry and civil society.^{42 43} In this latter category, one of the largest and most widely supported is the WeProtect Global Alliance (WPGA), which has 101 countries signed up, 65 companies, including many of the world's most famous brands, 87 NGOs and nine intergovernmental bodies.

WPGA has produced a series of key documents:

1. The Model National Response⁴⁴: This provides an outline of all the key heads of policy which a national Government should attend to in order to ensure it is properly equipped and ready to address child sexual abuse within its borders.
2. The Global Threat Assessment⁴⁵: This provides an overview of trends in technology and the kind of new or emerging forms of criminal behaviour which pose a threat to children.
3. Global Strategic Response⁴⁶: This is an abbreviated action checklist providing advice and guidance.
4. Implementing the Global Strategic Response⁴⁷: An aide-memoire to Governments and others seeking to ensure all the right measures and resources are in place to fulfil their role in the online protection of children.

³⁶ The Virtual Global Taskforce (VGT) is an international alliance of 15 dedicated law enforcement agencies working together to tackle the global threat from child sexual abuse. See also: <https://nationalcrimeagency.gov.uk/virtual-global-taskforce/>

³⁷ <https://www.end-violence.org/articles/g7-leaders-commit-action-end-childhood-sexual-violence>

³⁸ For example, the European Commission, when introducing its new legislation to prevent and combat child sexual abuse online noted "The current system based on voluntary detection and reporting by companies has proven to be insufficient to adequately protect children...", see: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2976

³⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A209%3AFIN>

⁴⁰ <https://www.gov.uk/guidance/a-guide-to-the-online-safety-bill>

⁴¹ <https://www.esafety.gov.au/newsroom/whats-on/online-safety-act#:~:text=The%20Online%20Safety%20Act%3A,services%20other%20than%20social%20media>

⁴² <https://www.technologycoalition.org/>

⁴³ <https://www.fosi.org/about-fosi>

⁴⁴ <https://www.weprotect.org/model-national-response/>

⁴⁵ <https://www.weprotect.org/global-threat-assessment-21/>

⁴⁶ <https://www.weprotect.org/global-strategic-response/>

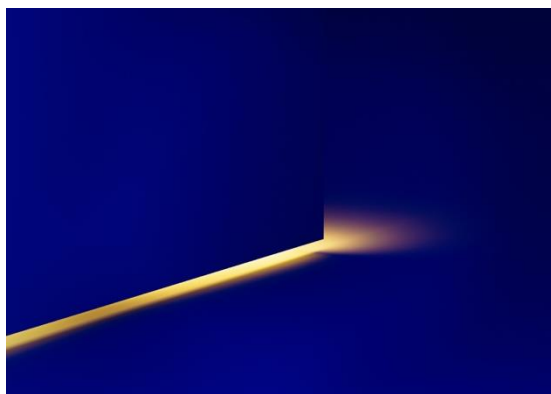
⁴⁷ <https://www.weprotect.org/global-strategic-response/>

5. The Voluntary Principles to Counter Online Child Sexual Exploitation and Abuse⁴⁸: This describes a series of measures which a number of tech companies have agreed to aspire to, noting that the measures are “voluntary and aspirational”.

There is no shortage of advice and information about what states can and should do to address not only the challenges posed by CSAM, but also a much wider range of online child protection issues.

3.2.1 The emergence hotlines – reporting points for CSAM

In the mid-1990s, typically in response to pressure from national governments, law enforcement and civil society organizations, the internet industry played a key role in helping establish a series of bodies which became known as “hotlines”. They were one of the first examples of internet “self-regulation” and would provide a reporting point for what were then expected to be relatively low volumes of child sex abuse material found on the internet.



Typically, a hotline will receive a report of an image which is suspected as being CSAM and its analysts will confirm whether it is in fact CSAM in breach of local law. For many years, and still now in most cases, hotlines have been primarily informed of the existence of a suspect image on the basis of an individual report. In recent years, some hotlines have adopted tools that rely on hashing technology and well-developed online crawlers to detect CSAM online, recognizing that leveraging

existing technology is far more effective and efficient than waiting for a member of the public to stumble across illicit content⁴⁹ and then decide to go through the trouble of reporting it.

In 1996 the Internet Watch Foundation⁵⁰ was established as the hotline for the UK. About the same time hotlines were also established in The Netherlands and Norway⁵¹. These were the first three in the world. Before long, hotlines were being established in many other countries on all continents, and the INHOPE network was soon born.⁵²

In 1999 INHOPE was established as a European association of hotlines, but it quickly grew into the global network it is in 2023. Today it plays an important role in establishing

⁴⁸<https://www.weprotect.org/library/voluntary-principles-to-counter-online-child-sexual-exploitation-and-abuse/>

⁴⁹ In the USA in 2021 only 1% of all reports received came from individual reports from members of the public. The rest were the product of the use of automated tools. User reporting is essential, but it is not a scalable or effective solution for addressing the larger problem.

⁵⁰ The author was a member of its first Policy Board.

⁵¹ Originally this was “Save the Children Norway” but the arrangements were later made and taken over by the police <https://www.politiet.no/tjenester/tips-politiet>.

⁵² The International Hotlines Operators of Europe (INHOPE) was formed in 1999 by 8 hotlines, and over time evolved into a global network, see: <https://www.inhope.org/EN/articles/who-we-are>.

and maintaining professional standards by all member hotlines, receiving reports from its members, eliminating duplication among the reports received and passing them on to INTERPOL via a secure link. INHOPE has members in 48 different countries. It also supports the establishment of new hotlines in countries presently without one.

If a hotline believes that an image is CSAM, some will issue a notice to whoever owns or manages the virtual property on which the image was found. Whether or how a hotline issues that notice depends on the hotline in question, the legislative framework it operates under, and the policies it follows, but the process is broadly similar in every jurisdiction. A request is made to remove the image from public view and in many instances law enforcement may also be informed. What notices are actually sent varies by jurisdiction. Some hotlines will only issue a notice to providers that are based in their own country. Others will send them to providers anywhere in the world. Some will only issue a notice after police have authorized it. Some will act entirely on the basis of their own judgement. Some will not issue a notice on anything but material that meets the “Interpol baseline” threshold for CSAM, otherwise referred to as the “worst of the worst”.

3.2.2 Today’s CSAM Removal Activity

Hotlines around the world are engaged in issuing notices to request the removal of CSAM. Yet, as already mentioned, the volumes of CSAM being distributed over the internet continue to rise. Frustratingly, a very high proportion of these images are ones which have previously been flagged. This underlines the importance of utilising existing technology to prevent reuploading.

Project Arachnid⁵³ started in Canada in 2017. Its developers, the Canadian Centre for Child Protection (C3P) found a way of connecting web crawling technology with a database of fingerprints (or hashes)⁵⁴ of classified CSAM images to detect and issue removal notices globally. What came to light as a result was the enormous volume of known CSAM not being picked up and removed from the internet. This underlines the need to step up the urgency and scale at which all relevant actors engage with the challenges presented by online CSAM.

Over a six-week period in 2017, Project Arachnid examined and processed 230 million web pages. It identified 5.1 million unique web pages hosting CSAM, detecting over 40,000 unique images. Since 2017, Project Arachnid has detected roughly 55 million suspected images of CSAM⁵⁵ and issued over 30 million notices to hosting providers around the globe requesting the removal of CSAM⁵⁶. Many providers are responding expeditiously to notices received from Project Arachnid but as noted above, far too many are not.

According to a report issued by C3P in 2021, nearly half (48%) of all images in relation to which Project Arachnid issued a removal notice, had previously been flagged to the

⁵³ <https://www.projectarachnid.ca/en/>

⁵⁴ https://en.wikipedia.org/wiki/Hash_function

⁵⁵ A suspected image of CSAM is one that requires assessment. For example, an image found on a webpage alongside previously classified CSAM.

⁵⁶ As of June 1, 2023, see <https://projectarachnid.ca>.

service provider.⁵⁷ Yet the same images persistently reappeared. This means a significant volume of historical CSAM continuously resurfaces online and places huge resource demands on C3P.

What the data clearly show is too many platforms are not utilizing readily available technologies to reduce CSAM on their networks either on a meaningful scale or at all.

It is also important to recognize that despite technological advances, human viewing of suspected or potential CSAM is still a necessary part of the process. This is because the automated detection of CSAM is only possible if the material has been previously classified, and the material has not been sufficiently altered to avoid automated detection. The most basic form of matching involves the use of cryptographic hashes – this detection approach means that if even one pixel of the image differs, or the format changes, matching will fail. To mitigate this shortcoming, perceptual hash technologies like PhotoDNA can provide a distance measurement between two images detailing how similar they are. This distance is incredibly small on images with minor modifications such as resizing or format changes and is a critical tool for catching images that would be missed by cryptographic hashing alone. When confronted with similar images that have a larger distance between them, human assessment may be required to confirm a match.

The number of images coming into the C3P queue that require human assessment exceeds available resources. Today the image backlog is in excess of 40 million. C3P now has analysts from 15 hotlines and child protection organizations around the world that assist with the task of viewing and categorising images/videos within Project Arachnid.

3.2.3 Financial Sector

In the early days of the internet, a number of individuals discovered they could make money through the creation of websites overtly selling access to CSAM. Believing ill-informed reporting in the mass media, a great many people thought they could go online and act anonymously without any fear of ever being caught. These individuals paid for access to the CSAM they wanted by using credit cards. The largest of these early cases was against a company based in Texas and known as Landslide Inc. In a single month Landslide took US\$ 1.4 million drawn from a list of 250,000 subscribers.⁵⁸

In response, in 2006, ICMEC established a working group known today as the *Financial Coalition Against Child Pornography*, composed of credit card issuers and Internet services companies. The coalition also has an affiliate in South-East Asia. A principal role of these two groups has been to help financial institutions better understand and disrupt the commercial aspects of CSAM distribution. Early on, this approach proved to be highly effective. Financial transactions in the context of CSAM distribution using credit cards have “been virtually eliminated”.⁵⁹

⁵⁷*Project Arachnid: Online availability of child sexual abuse material* available at: <https://protectchildren.ca/en/resources-research/project-arachnid-csam-online-availability/>

⁵⁸<https://www.nytimes.com/2001/08/09/us/us-says-it-broke-ring-that-peddled-child-pornography.html>

⁵⁹ <https://www.icmec.org/fcacse/>

However, the emergence of several alternative methods for online payments in recent years has unfortunately led to a revival in the commercialization of CSAM online⁶⁰. For example, the advent of cryptocurrencies — which can mask the identities of those involved in the transactions — has enabled traditional revenue models (such as ad revenue, affiliate marketing, and web traffic-based commissions) to openly operate alongside illicit content without fear of being shut down by financial institutions or traced by the authorities. For example, with cryptocurrencies, offenders can directly purchase illegal images from creators of CSAM or receive web traffic-based commissions from file-sharing services hosting CSAM. This renewed commercial dimension to online child sexual abuse requires urgent and coordinated attention.

The financial sector also includes intermediary financial institutions like investment companies or pension funds, some of which are significant shareholders in the technology companies or internet service providers discussed above and may be able to promote efforts and create additional incentives to detect and delete CSAM. One example of this are the efforts by an investment firm which has pressed Apple, AT&T Inc. and Verizon Communications Inc. on efforts to act more effectively against CSAM.⁶¹ In fact, the Principles for Responsible Investment, a United Nations-supported international network of financial institutions, include a commitment to incorporate social issues into ownership policies and practices.⁶²

4 Action Required

4.1 Why we need to act urgently to tackle this problem?

The importance of a twin track, victim-centred approach

THEORETICAL APPROACH

When a notice to request the removal of CSAM is issued, it informs whoever owns or manages the virtual property hosting or publishing the material that the material is believed to be CSAM, and a request is made to remove the material, with the expectation that most providers do not want this material on their systems and so will remove it. Depending on the laws in a particular jurisdiction regarding mandatory reporting and evidentiary matters, some or all the metadata associated with the image may be preserved for law enforcement authorities to request and receive, subject to whatever rules are in place in that country. If the CSAM is “new” (i.e., not pre-existing known CSAM), law enforcement can then prioritise identifying and locating the victim and put appropriate safeguarding measures in place to protect the child and ensure that his/her rights are protected, respected and fulfilled. As needed, investigations can also be

⁶⁰<https://www.iwf.org.uk/news-media/news/websites-offering-cryptocurrency-payment-for-child-sexual-abuse-images-doubling-every-year/>

⁶¹See e.g. <https://cbisonline.com/eu/impact-and-justice-january-2020-special-edition/> ; see also https://finance.yahoo.com/news/apple-pressed-fund-manager-combat-160700089.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAALt5F5PztGRPINoZaXd3_H93vYbDCeJMmRxaEdN-nAk_aDiD-w8v41JrcUp89HH7n5xohX9JoCZjlan6X8X1X1vucfVFujP5ERYi9Fusu1pnWsOXnsyRK_jYglZh7DG75GbdCwl7dsCO8PO-FgLrC70y8oboy_DI-Zkm1HKA50.

⁶² <https://www.unpri.org/about-us/what-are-the-principles-for-responsible-investment>

undertaken to identify the perpetrator of the abusive acts depicted in the CSAM, as well as the perpetrators sharing and/or downloading such material over the internet.

ACTUAL PRACTICE

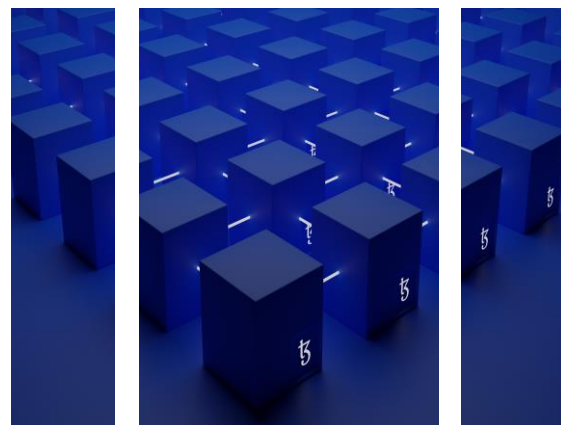
In practice, it often does not work out as described above and for two main reasons. Firstly, rules vary among jurisdictions in relation to what data must be reported and preserved. This is receiving attention through police channels in accordance with national laws. Secondly, due to the immense volume of CSAM reported, it is not possible for police to act swiftly, if at all, on every report of CSAM that it receives. Police must triage reports and must devise systems which allow them to make judgements about how and when they initiate an investigation.

Since every single image is of critical and immediate importance to the child victim, removal of the image is what they want, and need. Whether the image is being seen or discovered for the first time or it is a repeat copy of an image which has been seen by millions of people millions of times, its continued presence on the internet expands the original harm caused to the child by the abuse itself and puts the child at risk of further harms. To the extent that the continued circulation of the images also helps create or sustain paedophile activity or the further exchange of CSAM, they also constitute a continuing threat to children as yet unharmed in all parts of the world.

For this reason, there is a great deal of urgency attached to securing the removal of CSAM and preventing it from being reuploaded. It is an objective which is justified in and of itself and not in conflict or competition with the criminal justice objective of investigating a serious crime and bringing its perpetrators to justice. Child protection, in the interest of the victims, must be on a fast track.⁶³ It is an essential ingredient of a victim-centred approach.

4.2 What can financial actors do?

It is highly likely that the electronic service providers discussed in this document depend on obtaining financial facilities of various kinds from a wide range of banks or other financial institutions. Initiatives and campaigns, such as environmental and climate change campaigns, anti-slavery movements, anti-money laundering practices and other strands of policy, have acknowledged and leveraged the key role played by financial institutions in enabling or hindering undesirable or illicit practices. In the same way, it is suggested that financial institutions could be engaged in encouraging or requiring electronic service providers to detect, rapidly remove and prevent the reuploading of CSAM. UNODC is ready to explore such line of action, as a follow up to the present paper.



⁶³ In rare instances there may be a case for delaying the removal of CSAM, such as in the context of an active on-going police investigation where an arrest is imminent.

5 Appendix A: Studies on the cost of child abuse

A 2014 study entitled “The costs and economic impact of violence against children” published by the Overseas Development Unit (ODI), a UK based think-tank estimated that:

“... the worldwide cost of physical, psychological and sexual violence against children could be as high as 8% of global economic output, or US\$7trn, based on associated productivity losses⁶⁴.

The authors of the report concluded:

“This massive cost is higher than the investment required to prevent much of that violence.”

They added:

“More specific data and in-depth primary research needs to be generated on the different forms of violence against children, particularly in low- and middle-income countries. Calculating and reporting the economic costs will lead to stronger arguments for policy-making.”

In correspondence with one of the principal authors of the ODI report it was confirmed:

“we didn’t consider the internet, as it wasn’t such a major factor for children... when we wrote the paper and there wasn’t much data or evidence published in regard to it. It is very alarming how quickly it is becoming a major factor.”

Examples of national studies

AUSTRALIA

In a 2018 research report headed “The economic cost of child abuse and neglect”, it was estimated that the 2016-2017 costs to the public purse of “out-of-home-care, child protection, family support services and ‘indirect’ costs in terms of prevention and in the long-term costs” were in the region of 5.2 billion Australian dollars (US\$ 3.5 billion at May 2023 rates). It was not possible to deduce what proportion of these costs were attributable to child sexual abuse or CSAM.

The age frame used for victims seems to extend beyond the CRC definition of a child.

In a separate report published by Deloitte Access Economics, in 2019 the following appears:

“In 2016-17, there were an estimated 154,302 cases of violence against children and young people aged **0-24 years** in NSW costing a total of \$11.2 billion. Of this total, approximately \$2.3 billion was borne by NSW state government departments, \$600 million by the Federal government and \$8.2 billion by individuals and the broader NSW community.”

In the same report:

“In 2016-17, there was an estimated 489,194 cases of violence against children and young people aged **0-24** in Australia. In 2016-17, the estimated annual burden of violence against children and young people in Australia was \$34.2 billion; the lifetime cost was \$78.4 billion (Deloitte Access Economics, 2019).”

⁶⁴ Losses pertaining to sexual violence against children can be the result of health-related consequences, and the loss of schooling and workforce opportunities to children who become pregnant and those who are forced out of school by sexual violence: P. Perezniето, A. Montes, S. Routier and L. Langston.

CANADA

Based on the 1997-98 fiscal year, it was estimated that:

“The preliminary cost estimate of child sexual abuse in Canada exceeds \$3.6 billion dollars annually. This includes both public and private costs across four policy areas: health, social/public services, justice, and education/research and employment. These estimates have important policy implications in the area of child sexual abuse. The effectiveness of remedies, and options for new initiatives, policies and programs can be further evaluated using these economic calculations.”

FRANCE

A report into "Incest and sexual violence" published in June 2023 appears to show the public expenditure needed to deal with the consequences of child sexual abuse and resulting loss of earnings is 9.7 billion Euros each year, of which 6.7 billion related to long-term consequences.

GERMANY

In 2017 one study put the cost of “child maltreatment” at between 11 to 30 billion Euros⁶⁵.

UK

Based on 2018/19 prices.

“ This report provides an estimate of the financial and non-financial (monetised) costs relating to all children who began to experience contact sexual abuse, or who continued to experience contact sexual abuse, in England and Wales in the year ending 31st March 2019. This is estimated to be at least £10.1 billion (in 2018/19 prices). This estimate includes the costs of this cohort being victimised in previous and future years, in addition to lifetime consequences as a result of experiencing child sexual abuse (CSA). It should be noted that due to the way some costs are incurred over a victim’s lifetime this cannot be used as an annual or an in-year cost.”

USA

Taking 2015 as the baseline.

“The present study provides an estimate of the U.S. economic impact of child sexual abuse (CSA). Costs of CSA were measured from the societal perspective and include health care costs, productivity losses, child welfare costs, violence/crime costs, special education costs, and suicide death costs. We separately estimated quality-adjusted life year (QALY) losses. For each category, we used the best available secondary data to develop cost per case estimates. All costs were estimated in U.S. dollars and adjusted to the reference year 2015. Estimating 20 new cases of fatal and 40,387 new substantiated cases of nonfatal CSA that occurred in 2015, the lifetime economic burden of CSA is approximately \$9.3 billion, the lifetime cost for victims of fatal CSA per female and male victim is on average \$1,128,334 and \$1,482,933, respectively, and the average lifetime cost for victims of nonfatal CSA is of \$282,734 per female victim. For male victims of nonfatal CSA, there was insufficient information on productivity losses, contributing to a lower average estimated lifetime cost of \$74,691 per male victim. If we included QALYs, these costs would increase by approximately \$40,000 per victim. With the exception of male productivity losses, all estimates were based on robust, replicable incidence-based costing methods. The availability of accurate, up-to-date estimates should contribute to policy analysis, facilitate comparisons with

⁶⁵<https://capmh.biomedcentral.com/articles/10.1186/s13034-017-0185-0#:~:text=As%20a%20consequence%2C%20in%20addition,in%20the%20US%20%5B8%5D.>

other public health problems, and support future economic evaluations of CSA-specific policy and practice. In particular, we hope the availability of credible and contemporary estimates will support increased attention to primary prevention of CSA.”

Conclusion

It is acknowledged that the different studies cited are not standardised, reflecting a complex set of variables but taken together they paint an unmistakable picture.

Child sexual exploitation and abuse has significant economic consequences for national governments. Measures which seek to bear down on and reduce the level of child sexual abuse generally will therefore have a net beneficial economic effect for any national economy. This may be of special importance to low- and-middle income countries.

Moreover, none of the studies specifically considered the internet as a locus of harm. Neither were the studies therefore able to consider or find a way of expressing or quantifying the specifics of harm experienced by victims of CSAM.

6 Appendix B: The Economic costs to victims

It is important to remember a great many victims of child sexual abuse will never make a disclosure about their abuse, nor will it be discovered by others⁶⁶. A great many victims will therefore never receive the proper or full therapeutic and other help or support they need in order to make the best possible recovery from the consequences of the abuse.

Those consequences can be severe and last a lifetime both in terms of their impact on the individual's health as well as their economic prospects. The two are in any event linked and, in turn, feed into and affect the national economy in which the child, later an adult, lives⁶⁷.

These stark facts underline the importance both of preventative measures and of improving support, rehabilitation and outreach services for victims.

As noted in Appendix A there needs to be greater clarity and certainty about the macroeconomic impact of all forms of child abuse, including child sexual abuse. For that to be possible it is essential to tease out and develop a standardised means of measuring the specific consequences of the additional dimension of harms to children and society which arise where the internet was a significant factor both generally in facilitating sexual abuse, and also specifically where CSAM has been distributed over the internet.

This will assist policy makers in Government, in industry and civil society to make better, more informed decisions about the nature and level of resources needed, as well as priorities in relation to where and how to deploy those resources.

In the USA, following the passage of the Amy, Vicky and Andy Child Pornography Victim Assistance Act 2018, a number of cases have now been determined by the courts. The cases arose following the arrest and conviction of persons for the unlawful possession or distribution of CSAM.

The awards made are based upon the assessments shown below in Tables A and B. The courts were guided by expert testimony. The assessments give an insight into the likely scale of the economic harm suffered by individuals who were sexually abused as children where images of the abuse later appeared on the internet as CSAM. When aggregated and properly integrated these data will improve the macroeconomic model.

Under the Act, as further convictions are made of individuals found in unlawful possession or engaged in the unlawful distribution of relevant material, the amounts shown below could go up. It depends on what further evidence emerges in respect of how the convicted person used or further distributed the images.

The data provided below are from a small number of randomly selected cases.

The victims referenced in Table A were represented by Marsh Law Firm, New York, NY. The victims referenced in Table B were represented by Carol L. Hepburn P.S. of Seattle, WA. Each line represents a single individual. Amounts shown are in US Dollars.

⁶⁶ https://www.d2l.org/wp-content/uploads/2017/01/all_statistics_20150619.pdf

⁶⁷ If the abuse remains unacknowledged or undiagnosed, the victim's later engagement with medical or other services on a range of potential issues may be sub-optimal. This also has a macroeconomic dimension.

Table A

LOST WAGES	MEDICAL COSTS	LOSS OF ENJOYMENT OF LIFE	TOTALS
2,855,173	512,861	8,886,300	12,254,334
3,939,937	101,027	3,708,639	7,749,603
2,867,870	1,132,381	3,606,880	7,607,131
3,908,470	3,337,968	5,918,276	13,164,714
3,889,210	3,448,646	7,311,384	14,649,240
17,460,660	8,532,883	21,433,479	55,425,022

Table B

LOST WAGES	MEDICAL COSTS	LOSS OF ENJOYMENT OF LIFE	TOTALS
843,150	4,751,515	2,842,627*	8,437,292
2,273,436	303,150	3,313,843	5,890,429
5,288,622	279,275	2,205,752*	7,773,649
2,040,280	116,500	Not analyzed	2,156,780
1,111,220	352,480	Not analyzed	1,463,700
1,400,000	299,000	Not analyzed*	1,699,299
12,956,608	6,101,920	8,362,222	27,421,149

Totals

LOST WAGES	MEDICAL COSTS	LOSS OF ENJOYMENT OF LIFE	TOTAL
30,417,268	14,634,803	26,795,570	82,846,171

**Comparatively small additional amounts under related categories need to be added.*