



2022 Annual Report

Harnessing the Power of Industry Collaboration





Opening Letter

This is an important moment for online child safety. In the past year, there has been an unprecedented increase in regulatory action, greater attention from civil society, and an ever-evolving narrative played out in the media. Globally, there is a growing sense of urgency that more is needed from the tech industry to keep children safe online. Expectations are changing and the bar is being raised.

With each new challenge — as those who seek to harm children find ways to exploit the tech tools that we have come to rely on for connection, sharing, community, and learning — we continue to come back to the foundational element of this Coalition: **the power of collaboration**. This work is interconnected. No company, no matter the size or capability, can tackle the challenge of online child sexual exploitation and abuse alone. Collaboration is not only important, it is essential. This Coalition of industry members have joined together to share resources, knowledge, and best practices; to innovate and pilot new technologies; and to build trust and spark ideation. This is the place where this collaboration happens.

In the two years since I've stepped into my role as Executive Director, the Coalition has more than doubled in size as more and more companies link arms to ensure that children are safe on the internet. Here, dedicated trust and safety professionals from over 30 companies set aside their competitive business interests and work together to address the greatest threats facing children online. These professionals approach these issues with a tremendous sense of resolve. Their focus has not wavered. Their commitment only grows to match the challenges and it is bearing fruit.

In 2022, as detailed below, the Tech Coalition continued to deliver on the key promises of **Project Protect**. We also studied emerging priorities from an ever-changing global landscape. Our members increased their adoption of image and video hashing technologies and other technical solutions, investment in critical research, knowledge sharing, and transparency reporting. We have not solved all the problems. There is still work to be done. But we are building strength, gaining momentum, and leaning into the difficult spaces.

Thank you for all you do, and we look forward to continued partnership in the year ahead.

Onward,



Sean

Sean Litton, Executive Director

Who We Are

The Tech Coalition is an alliance of global tech companies of varying sizes and services working together to combat child sexual exploitation and abuse (CSEA) online. This coalition represents a powerful core of expertise that continues to move the tech industry towards a digital world where children are free to play, learn, and explore without fear of harm.

2022 Board of Directors List

Remy Malan,

Board Chair, Roblox, Vice President of Public Affairs and Chief Privacy Officer

Almudena Lara,

Board Treasurer, Google, Child Safety Government Affairs and Public Policy Global Lead

Jacqueline Beauchere,

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Annie Mullins,

Yubo, Independent Safety Advisor

Antigone Davis,

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Chuck Gillingham,

Apple, Child Safety Counsel

Ethan Arenson,

Verizon, Managing Associate General Counsel and Head of Digital Safety

Kristine Dorrain,

Amazon, Senior Corporate Counsel of Content Policy

Liz Thomas,

Microsoft, Director of Public Policy, Digital Safety

Nick Pickles,

Twitter, Head of Global Government Affairs

Ratnaditya Jonnalagadda,

TikTok, Head of Product

Membership

Foundational



Cornerstone



Bridge



Associate



Services Offered by Tech Coalition Members in 2022

Image Hosting / Sharing	24
Text-Based Content	23
Video Hosting / Sharing	21
Non-Encrypted Messaging	18
Live Content	15
Search / Discovery	15
Gaming	10
Cloud Hosting / Domains	9
Encrypted Messaging (E2EE)	9
Email	6
Payment Provider	6
Metaverse	4
Dating Services	3
Content Delivery Network	1
Educational Content	1
Marketplace	1

A Growing, Diverse Membership

Over the course of 2022, the Tech Coalition continued to strategically grow and extend its membership, increasing from 26 to 31 tech companies and further expanding globally with new members based outside of North America.

Tech Coalition Membership Grew 16% in 2022

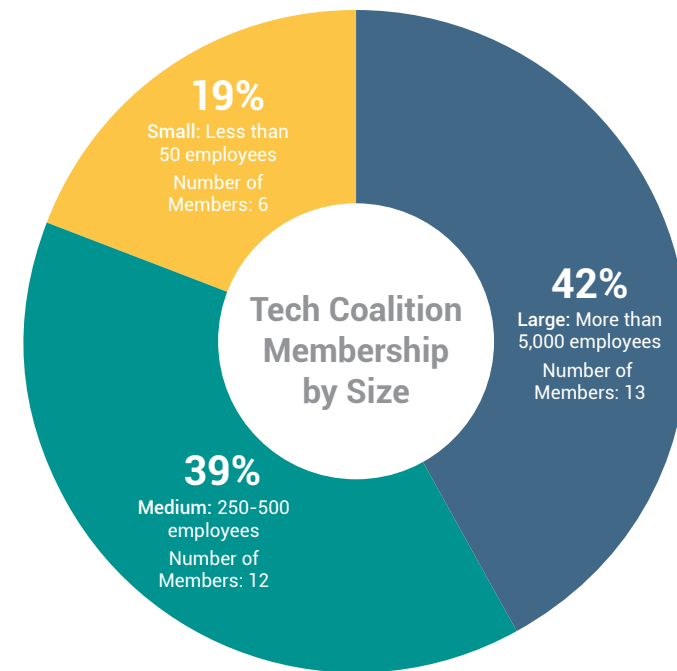
New Tech Coalition Members in 2022

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Power and Value of the Tech Coalition

The Tech Coalition provides each member a place at the table to collaborate with their industry peers and further engage with policy makers, law enforcement, and civil society experts to see the full spectrum of both the issue and its solutions. Members join their fellow industry experts – thought leaders, tech innovators, developers and engineers, public affairs and regulatory specialists, and tech policy practitioners – to collaborate while gaining critical insight from other sectors.

100% of members surveyed in 2022 agree that the Tech Coalition is the global leader in facilitating effective industry collaboration to combat online child sexual exploitation and abuse.



As members, companies engage with the comprehensive benefits the Tech Coalition provides, including:

- **Opportunity to engage** in open and transparent dialogue with industry peers and trust and safety leaders in a safe and collaborative space.
- **More than a dozen live webinars with experts** from across the fields of public policy, wellness, research, grooming, age assurance, and more.
- **Peer to peer company mentorship** that gives trust and safety professionals the ability to learn and grow their skill sets from access to a broad group of peers and industry leaders on best practices as well as one-to-one knowledge sharing in confidential settings.
- Invitations to participate in innovative, **cross-industry pilot programs** to develop technology, receive tailored support, and ultimately, increase child safety across platforms.
- **Full suite of Member Resources**, including guidelines, benchmarks, best practices, frameworks, research, and case studies.

What Collaboration Looks Like

2022 was the Tech Coalition's second full year since the launch of **Project Protect**, a five-pillar plan of coordinated action to drive the technology industry's efforts to fight child sexual exploitation and abuse (CSEA) online. Committed to Project Protect, our industry members work together in partnership and collaboration across these five critical areas:



1. Tech Innovation

Working across industry to both accelerate the adoption of existing technologies and invest in the development of new technologies to combat online child sexual abuse and exploitation.

Instances of online CSEA have increased as more children and adults gain access to the Internet and other technologies. The global nature and scale of the challenge is one that must be met with innovation to keep pace with the increasing methods of sharing information and communicating online.

Within the Tech Coalition, we work with members to accelerate the adoption of existing technologies and invest in the development of new technologies to combat online CSEA. New technological solutions enable members to advance their own detection efforts, share signals and information that help other members detect similar predatory behavior and content on their respective services, and enhance existing tools so that a greater number of member platforms can use them. Tech innovation and the ability to share signals and utilize cross-platform technical solutions is critical to our efforts. As we continue this important work in 2023, we're excited to report on two programs launched in 2022 that significantly aid in the detection of child sexual abuse material (CSAM) and enable industry-collaboration to better deter abuse from ever occurring.

Video Hash Interoperability

For platforms that allow uploads or sharing of videos and images, trying to determine which contain abusive material is a manually tedious task. As a result, many companies rely on hash matching detection which takes a known piece of CSAM and creates a digital hash – or fingerprint – that is unique to the content. A company can then see if content on their platform matches the hash, surfacing it to be reviewed against the company's policies and terms of services prohibiting CSAM.

Though hash matching is used by many tech companies to detect known CSAM in images and videos, there is no universally adopted type of video hashing technology used by all. With different companies using different hashes, there are limits to the number of companies that can utilize any one particular hash of known CSAM to detect if that material has also been shared on their platform. In 2022, the Tech Coalition sought to address this challenge and launched a **Video Hash Interoperability Alpha Project** to enable companies to match and detect known CSAM, regardless of the hash algorithm used. In this project, Google and Meta participated alongside the National Center for Missing and Exploited Children (NCMEC) and rehashed over 220,000 videos of known CSAM in each company's respective format.

During the first six months of the pilot, Google and Meta were both able to find previously undiscovered CSAM on their platforms. Google has also added the new hashes to its CSAI Match, an offering in Google's **Child Safety Toolkit** that is made available to other companies and NGOs to increase industry-wide detection of known video CSAM. Meta also updated their technical solutions to detect CSAM with the new hashes to increase their already robust detection efforts across Facebook, Instagram, and more.

Initiate



In September, the Tech Coalition hosted **Initiate**, a tech meetup and hackathon that brought together more than 60 engineers and subject matter experts from 12 member companies including Adobe, AWS, Cloudflare, Dropbox, Google, GoDaddy, Meta, Microsoft, Pinterest, Snap, TikTok, and Yahoo. We were also joined by partner organizations including NCMEC and Thorn. During the two day event, sponsored by Snap Inc. in their Seattle offices, professionals collaborated across a variety of topics including how to improve the quality and frequency of reporting, industry's ability to hash match against known content, and proofs of concept for detecting never-before-seen CSAM in various contexts. Learnings from this event were shared with the broader Coalition and set the groundwork for new iterations coming this year.



2. Research

Funding research to advance our understanding of the experiences and patterns of online child sexual abuse and exploitation through the Tech Coalition Safe Online Research Fund in collaboration with the End Violence Against Children Partnership.

We welcomed our second cohort of Tech Coalition Safe Online Research Fund grantees to advance the world's understanding of online child sexual exploitation and abuse. In partnership with End Violence, we are committed to investing in high-impact research that highlights improvements in technology, policy, and practice to help inform the technology industry's approach to combating online CSEA.

The eight new projects announced in 2022 will collectively lead to game-changing findings, applications, and learnings, and build on five years of earlier investments by the Safe Online Research Fund in countries across the world. Novel applications to drive real impact for the tech industry include a range of topics: youth perceptions and participation, deterring the offenders themselves, peer-to-peer abuse for user reporting, putting the voices of youth at the forefront of efficacy of interventions and victim support services.

2022 Tech Coalition Safe Online Research Fund Grantees:

- **ChildSafeNet** - Focused on enhancing parental roles in protecting children from online sexual exploitation and abuse
- **Federation of the Women Associations of Türkiye (TKDF)** - Mapping Turkey's online CSEA response and support mechanisms
- **MSB Berlin Medical School** - RAPPID research (Risk Assessment for the Prevention & Promotion of Internet Deterrence) on the development of psychological profiles that lead to sexually harmful/problematic behaviors within online platforms
- **Royal Roads University** - Undertaking a cross-regional study on youth's experience of peer-to-peer sexual violence online, including social norms and youth-led recommendations for prevention and response
- **Save the Children** - Protecting children from online grooming, generating cross-cultural, qualitative and child-centered data to guide grooming prevention and response
- **Suojellaan Lapsia ry, (Protect Children)** - Generate evidence on offender-focused prevention of online sexual violence against children; who is perpetrating online CSEA, and who's seeking help for it
- **Swansea University** - Building strengthened safeguards with its anti-grooming technology DRAGONS+ (Developing Resistance Against Grooming Online)
- **ZanaAfrica** - Understanding online sexual exploitation and abuse of children with intellectual disabilities in Kenya.

This global group of researchers joins our 2021 **Tech Coalition Safe Online Research Fund Grantees**.



3. Collective Action

A whole-society approach that engages third-party stakeholders in collaboration and collective action through events and convenings.

Following the **2021 Tech Coalition Multi-Stakeholder Forum**, the Collective Action Working Group spent 2022 gathering information from third party stakeholders on perceived first-person CSAM (also known as “self generated” CSAM). The Coalition held sessions with NCMEC, THORN, the UK Internet Watch Foundation, and INHOPE, and facilitated a panel at the **Crimes Against Children Conference** in Dallas, Texas featuring expertise from law enforcement, NGOs, and industry.

These important convenings allowed the Collective Action Working Group in November to produce a Tech Coalition member-only resource on handling perceived first-person CSAM that includes considerations for policy creation, implementation, and enforcement; reporting; awareness and education; industry collaboration; and cross-sector collaboration.





4. Information and Knowledge Sharing

Facilitating high-impact information, expertise, and knowledge sharing across industry to disrupt and help prevent online CSEA, including creating and expanding robust systems and processes for sharing information and threat signals related to exploitative or predatory behaviors.

The sharing of information and knowledge between member companies is the bedrock of the Tech Coalition. Our members are committed to sharing their learnings, best practices, and emerging trends in combating CSEA. In 2022, our members in the Information and Knowledge Sharing Working Group:

- **Created** six new resources, including sample policies and templates for child safety programs, a member-only reporting kit to assist companies in reporting to external authorities such as NCMEC, and considerations for wellness programs for content moderators.
- **Released** one-of-a-kind sector roadmaps – sector-specific benchmarks and milestones for companies to reach as they improve their child safety operations and programs.
- **Hosted** webinars to share individual and company expertise and lessons learned on topics such as detection in live-streaming, user reporting best practices, wellness perspectives, and viral content trends.
- **Facilitated** over 30 peer-to-peer mentorship sessions between members.





5. Transparency

Driving greater accountability and consistency across industry through meaningful reporting of online child sexual exploitation and abuse across member platforms and services.

By virtue of their unique position, tech companies have important data that can provide insight into what's needed to more effectively combat online child sexual exploitation and abuse. In 2022, the Tech Coalition developed Trust, a principles-based framework to help companies develop and align their individual transparency reporting in order to meaningfully inform on their efforts to keep children safe. Developed through the collaboration of our industry members, and following a consultation process with civil society and governments, the Trust Framework provides flexible guidance to tech companies seeking to build trust and demonstrate accountability by providing transparency reporting about their efforts to combat online CSEA.

The Trust Framework:

- **Helps** companies develop reporting that can explain the specific actions the company has taken to address attempts to violate its policies prohibiting online CSEA;
- **Provide** critical insights on the specific threats and trends of online CSEA; and
- **Creates** a reliable cadence of opportunities for individual companies to identify potential improvements that will further reduce the prevalence and harm of child exploitation.



Additional Tech Coalition resources have been developed to help industry implement the framework including a [transparency reporting implementation guide](#) and a [reporting template](#) to help companies get started on their first child safety transparency report.

Our goal at the Tech Coalition is full adoption of the Trust Framework by our members – many of whom already have very similar frameworks in place.

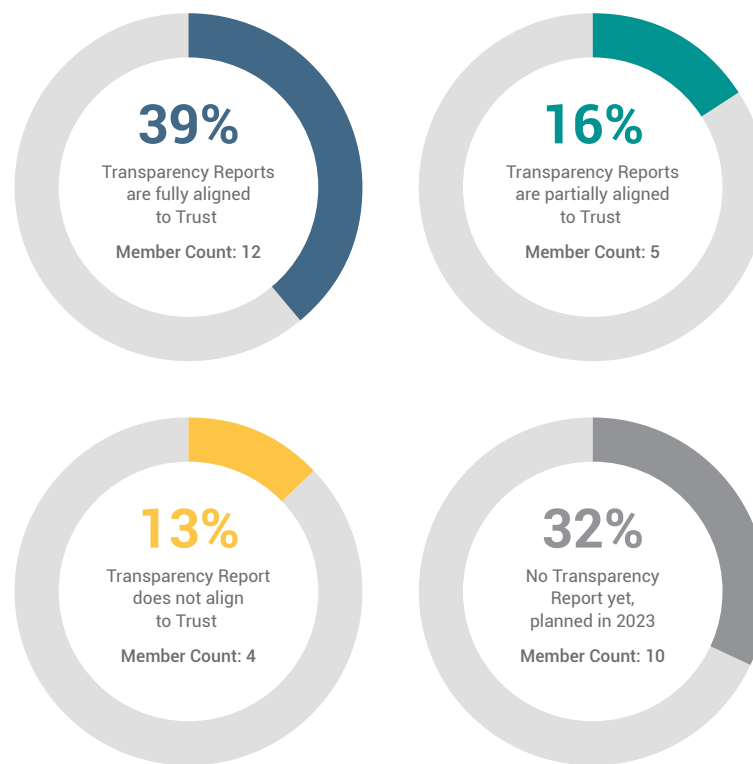
See our 2022 Transparency Report starting on the next page for our progress to date.

2022 Transparency Report

The following are the metrics and insights from the Tech Coalition's 31 members in 2022 on their efforts to combat online CSEA and provide meaningful transparency about their work. This information reflects members' self-reported insights aggregated by the Tech Coalition to provide the latest assessment of progress made and solutions.

Tech Coalition Member Alignment with Trust

After first launching Trust, the Voluntary Framework for Industry Transparency Reporting in June 2022, the Tech Coalition now provides the first year of assessment of how current members' transparency reports align to the newly published framework. Less than a year since launching, we are encouraged to see many of our members aligning with the framework. Already, 68% of members produce regular transparency reports with 55% aligning partially or fully with the framework. We look forward to further progress in the year to come.



Links to Tech Coalition member transparency reports are available at the end of this report.

NCMEC and Equivalent Reporting

When companies identify instances of online child sexual exploitation and abuse, including CSAM, they report this activity to relevant authorities through manual reports and through more automated means such as via an API integration. Often, the use of integration-based reporting can relate to the maturity of a company's trust and safety efforts to detect online CSEA as well as a higher volume of attempts to exploit their platform (though this correlation between rates of detection and use of integrated reporting is not always the case). A majority of Tech Coalition members, including those based in the United States, send reports to NCMEC to prompt further investigation. Tech Coalition members based in Canada, New Zealand, and the UK may also report to their country's equivalent centralized systems for reporting.

Type of Reporting Used	Number of Members Using this Type of Reporting
Manual	5
API	5
Both	21

Members Further Providing Supplemental Reports with Additional Context to API Reporting to Support NCMEC and Law Enforcement	
Yes	22 (Up from 18 companies in 2021)
No	9

Supplemental reports improve the ability of law enforcement to take action

84 victims were identified in the Philippines in 2022 by a single supplemental report provided by the Yahoo team.

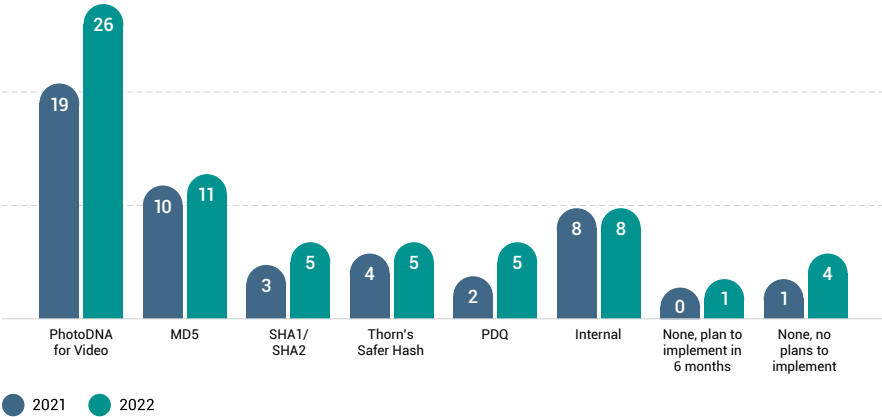


Hash-Based Detection

Hash-based detection tools assign unique numerical “hashes” or digital fingerprints to images and videos confirmed to be CSAM in order to be able to share the hash of material without further sharing the material itself. Other companies can then use that same hash to detect if the identified CSAM was shared on their platform and if so, take action on that content in line with their policies and procedures.

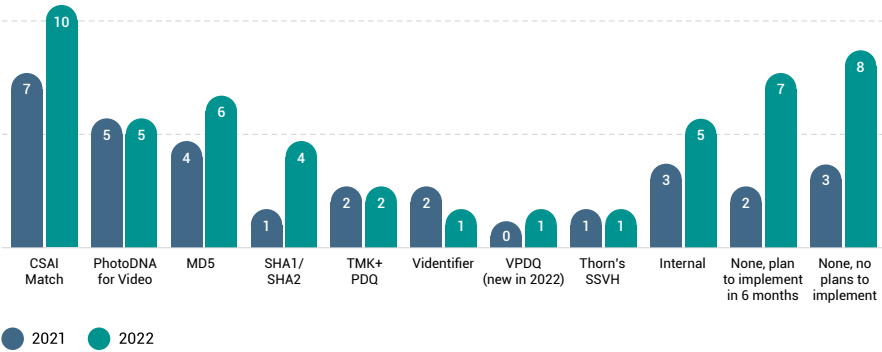
Tech Coalition member companies continue to increase their adoption of image and video-based hashing technologies. Currently for image hashing, PhotoDNA and MD5 are the two technologies most often utilized. It is common for companies to use more than one form of hashing technology and members also develop internal solutions for additional layers of defense and more robust CSAM detection on their specific platforms.

From 2021 to 2022, Tech Coalition membership collectively increased the use of image hashing technology with greater adoptions across all 5 hashing technologies available to more than one company.



For detection of CSAM videos, CSAI Match, PhotoDNA for Video, and MD5 are currently the most utilized technologies for hashing. Here as well, companies continue to develop their own internal hash-based solutions. Given the range of video hashing tools currently in use by members, the Tech Coalition's Video Hash Interoperability Project, launched in 2022, provides companies using different hashing tools the ability to leverage hashes previously in another form that were incompatible with their technical solutions.

As a result of this project and the continued commitments of individual members, Tech Coalition membership collectively increased the use of video hashing technology from 2021 to 2022 with greater adoption of the most common technologies enabling more companies to detect known video CSAM.



In addition to increasing the use of hash-based tools for detecting known CSAM, Tech Coalition members are committed to safely sharing hashes and known keywords tied to attempts to exploit children online to support quicker cross-platform identification of online CSEA. Member companies contribute hashes or keywords to at least one industry repository, including NCMEC's industry database, the Internet Watch Foundation, Project Arachnid, and the Thorn/Tech Coalition Keyword Hub. This type of sharing helps industry pool knowledge and work together to prevent the reuploading of known CSAM.

Keyword/Hash Repository Use	Number of Members Utilizing the Repository
NCMEC - NGO	19
NCMEC - Industry	16
Internet Watch Foundation (IWF)	12
Internal	11
NCMEC - Exploitative	6
Thorn Keyword Hub	6
Project Arachnid - C3P	3
Thorn Hash List	3
None	6

Additional Content Moderation Tools: Classifiers and Live Stream Moderation

Though hash-based technologies provide a good starting place for detecting CSAM, member companies use additional technical solutions including machine learning classifiers to help detect and take action on CSEA content and activity, including grooming.

Classifier and Keyword Matching	Number of Members
Image CSAM	13
Video CSAM	4
Live Content	3
Text (non-grooming, non-sexortion)	13
Text (sexortion)	4
Grooming	9

Currently, **11 members*** also work to moderate live stream content beyond the use of classifiers, deploying tools and techniques to detect behavioral signals, conduct manual interventions, and leverage other moderation methods identified to help detect exploitation in new content streaming live.

* Not all Members offer live streaming services on their platforms.



Additional Safety Interventions

Members also develop and deploy a range of interventions to further prevent and deter online CSEA including age verification, prevention messaging through educational resources, and deterrence messaging targeting those seeking to do harm. In this effort, members are committed to the safety of their teams, ensuring their staff are receiving the resources needed to support this demanding work.

Age Verification	Number of Members
Self-declaration	24
Hard identifiers (e.g. ID document confirmation)	9
Facial estimation analysis	5
Utilizing inference models to estimate a person's age based on the person's online behavior and other data available.	6
Not applicable	5















































Online Safety Resources	Number of Members
For children	15
For parents	18
For educators/schools	11
Not relevant	5

Deterrence Messaging	Number of Members
Yes	12
No	13
Not relevant	3

Wellness Programs for Staff	Number of Members
Yes	30
Currently in development	1

Member Transparency Reports

Twenty-one Tech Coalition Members currently produce regular transparency reports. See how each company approaches their commitment to transparency in their own reports.

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Looking Ahead

In 2023, the Tech Coalition will continue to drive forward the ambitious goals of Project Protect and harness the power and collective capacity of tech industry collaboration. As we applaud our members in their recent efforts to expand their hashing technology and develop new technical solutions, we also remain steadfast in our goals to advance the industry's transparency efforts and adoption of Trust for their transparency reporting.

With convenings like the Tech Coalition's Multi-Stakeholder Forum in June, we will continue to enhance our collective understanding of the problem of online child sexual exploitation and abuse, particularly the pressing harm of financial sextortion, and develop new tactics and solutions informed by sectors critical to keeping children safe. We understand that no single company, organization, or institution can solve this problem alone, and we look forward to adding new members and building new partnerships in the months ahead.

**Thank you for working with us and your
continued commitment to keep children safe.**





About Tech Coalition

The Tech Coalition facilitates the global tech industry's fight against the online sexual abuse and exploitation of children. The Coalition is an alliance of technology companies of varying sizes and sectors that work together to drive critical advances in technology and adoption of best practices for keeping children safe online. We convene and align the global tech industry, pooling their knowledge and expertise, to help all our members better prevent, detect, report, and remove online child sexual abuse content. This coalition represents a powerful core of expertise that is moving the tech industry towards a digital world where children are free to play, learn, and explore without fear of harm.

To learn more visit www.technologycoalition.org