

Internet Impact Brief

End-to-end Encryption under the UK's draft Online Safety Bill

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Abstract

In May 2021 the UK published the draft Online Safety Bill (the “draft bill”) which seeks to set out a new regulatory framework to protect Internet users from illegal and harmful content. If implemented in its current form, this draft bill may negatively impact the Internet, pulling it away from its full potential as an open, globally connected, secure and trustworthy resource for all.

This brief uses the Internet Impact Assessment Toolkit¹ (IIAT) to assess how the limitations placed on the use of end-to-end encryption under the UK's Online Safety Bill may affect the global Internet.

Context and Assumptions

Context

The UK published the draft Online Safety Bill on 12 May 2021. It is designed to establish a new regulatory framework to tackle harmful content online.² The draft bill was subject to a period of pre-legislative scrutiny by a Joint Committee of Members of the House of Commons and Peers from the House of Lords. This review concluded

Methodology

The Internet owes its strength and success to a foundation of critical properties that, when combined, represent the Internet Way of Networking (IWN). This includes: an accessible Infrastructure with a common protocol, a layered architecture of interoperable building blocks, decentralised management and distributed routing, a common global identifier system, and a technology neutral, general-purpose network.

To assess whether the present proposal has an impact on the Internet, this report will examine its impact on the IWN foundation the Internet needs to exist, and what it needs to thrive as an open, globally connected, secure and trustworthy resource.

¹ <https://www.internetsociety.org/issues/internet-way-of-networking/internet-impact-assessment-toolkit/> The IIAT was developed by the Internet Society¹ to be used by anyone who wants to check if a particular policy, development, or trend affects the critical properties of the Internet Way of Networking (IWN).

² <https://www.gov.uk/government/publications/draft-online-safety-bill>

in a report published by the Joint Committee on 14 December 2021 detailing their recommendations.³ The Government must now consider the findings of the Joint Committee's report and develop a new proposal on the Online Safety Bill before it can go to Parliament. It is expected that the Government will publish a revised proposal by March 2022.

The draft Online Safety Bill, like its predecessor the Online Harms White Paper,⁴ would impose a statutory duty of care on certain service providers to moderate user-generated content so that users are not exposed to illegal and harmful online content.⁵ Duty of care obligations differ based on the category that a service provider may fall into. These categories include: (1) all providers of regulated user-to-user services; (2) services likely to be accessed by children; (3) services with additional duties to protect journalistic content and "content of democratic importance"; and (4) search engine providers.

The draft Bill grants the Office of Communications (Ofcom) the authority to oversee and enforce the new regime. In this role Ofcom will articulate codes of practice for the implementation of this duty of care for the four categories. The Draft Bill additionally suggests that the Secretary of State for the Department of Digital, Culture, Media and Sport (DCMS) will have the power to add or remove services from an exemption list and to set the thresholds that would place particular service providers into one of the four categories.

Ofcom can require that service providers use "accredited technology" to identify harmful content and "swiftly take down that content". To comply with this requirement and fulfil their "duty of care", service providers will likely need to resort to upload filters and other mechanisms that may interfere with the use of end-to-end encryption.⁶

How is encryption implicated in the Draft Online Safety Bill?

Encryption is a data confidentiality mechanism designed to help Internet users keep their online data and communications private and secure. It plays a critical role in protecting day-to-day digital activities like online banking, shopping, preventing theft of sensitive information in data breaches, and making sure private messages stay private.

Encrypted messaging works by scrambling information so that it can only be read by someone with the "key" to open and unscramble the information. End-to-end encryption provides the strongest level of security and trust, as only the intended recipients hold the key to decrypt the message. In end-to-end encryption, no third party — including the service provider or the government — can read users'

³ <https://publications.parliament.uk/pa/jt5802/jtselect/jtonlinesafety/129/12902.htm>

⁴ <https://www.gov.uk/government/consultations/online-harms-white-paper>

⁵ <https://www.lawfareblog.com/uks-online-safety-bill-not-safe-after-all>

⁶ <https://www.openrightsgroup.org/blog/encryption-in-the-online-safety-bill/>

encrypted content. End-to-end encryption is used in daily life including for personal messaging, video conferencing, online shopping, and banking transactions.⁷

The draft Online Safety Bill places a duty of care on service providers within the scope of the draft bill to moderate illegal and harmful content on their platforms, with fines and penalties for those that fail to uphold this duty. The only way for service providers that offer end-to-end encryption to comply with this duty of care would be to remove or weaken the encryption that they offer.

In this sense, while the text of the Online Safety Bill does not explicitly ban end-to-end encryption, the liabilities it imposes on service providers would create strong incentives for providers to withdraw end-to-end encrypted services from the market. Doing so would enable service providers to intercept users' communications to avoid violating the duty of care placed on them.

The report published by the Joint Committee on 14 December 2021 asked the Government to clarify how the providers of encrypted services should comply with the duty of care ahead of the draft bill being introduced into Parliament. The report additionally recommended that end-to-end encryption be included in risk profiles and risk assessments, requiring providers to identify and address these risks.

Related activities separate to the Online Safety Bill

On 29 June 2021 DCMS published guidance titled: *Public and private channels: improve the safety of your online platform*.⁸ This guidance, while separate from the Online Safety Bill, provides insight into Government thinking behind the duty of care. For example, the guidance states that end-to-end encryption makes it more difficult to identify illegal and harmful content on private channels and recommends removing end-to-end encryption for children's accounts.

This DCMS guidance contradicts the UK's 2020 Age appropriate design code which aims to minimize the collection of children's data.⁹ The code encourages providers to conduct data protection impact assessments to mitigate risks to the rights and freedoms of children, pointing to encryption as a technological security measure.¹⁰ The contradiction arises in that DCMS guidance asks that providers increase their collection of children's data for their 'safety' while the Age appropriate design code recommends the exact opposite, also in the name of safety.

⁷ <https://www.internetsociety.org/blog/2019/10/your-day-with-encryption/>

⁸ <https://www.gov.uk/guidance/private-and-public-channels-improve-the-safety-of-your-online-platform>

⁹ <https://techcrunch.com/2021/09/01/uk-now-expects-compliance-with-its-child-privacy-design-code/>

¹⁰ <https://ico.org.uk/for-organisations/guide-to-data-protection/ico-codes-of-practice/age-appropriate-design-a-code-of-practice-for-online-services/2-data-protection-impact-assessments/>

Additionally, in September 2021 the Home Office launched a new Safety Tech Challenge Fund, which awarded five organizations up to £85,000 each to develop “innovative technologies” for law enforcement access to online messaging platforms with end-to-end encryption.¹¹

Over 90 civil society organizations¹² have criticised Apple’s August 2021 proposed use of client-side scanning for its potential for abuse and the risks it poses to certain youth groups, including LGBTQ youths. Recognizing these concerns, Apple has since scrapped their planned changes to messaging for youth accounts. Despite this, in the Daily Telegraph article announcing the Safety Challenge Fund, Home Secretary Priti Patel points to Apple’s client-side scanning proposal as a positive example, raising concerns about the criteria for evaluating Challenge Fund proposals.¹³

Together, the text of the Draft Online Safety Bill and the governments accompanying communication campaign implies a wider intention to drive end-to-end encryption from the UK market.

Assumption: Exclusion of Internet Infrastructure

Based on the text of the Online Safety Bill, this brief assumes that consumer services that allow for user-generated content such as Signal, WhatsApp, iMessage, and Zoom would be the providers most likely to face pressures to weaken encryption under the duty of care.

The Internet Society’s understanding is that Internet infrastructure providers, such as Internet Service Providers (ISPs), will remain out of the scope of the Draft Online Safety Bill and that the 2016 Investigatory Powers Act¹⁴ will continue to regulate them.

For this reason, we have limited our analysis to the Draft Bill’s impact on consumer-facing services, primarily messaging and video conferencing. We do, however, acknowledge the danger of scope creep and the potential that pressure to weaken encryption could spread to Internet infrastructure providers in the future.

Definition of Weak Encryption

This paper references the weakening of strong encryption either through its removal for certain demographics (for example, children) or through the creation of “encryption backdoors”.

¹¹ <https://homeofficemedia.blog.gov.uk/2021/09/08/new-safety-tech-fund-challenge/>

¹² <https://cdt.org/insights/international-coalition-calls-on-apple-to-abandon-plan-to-build-surveillance-capabilities-into-iphones-ipads-and-other-products/>

¹³ <https://www.telegraph.co.uk/politics/2021/09/08/priti-patel-call-worlds-tech-giants-please-dont-put-profit-safety/>

¹⁴ <https://www.legislation.gov.uk/ukpga/2016/25/contents/enacted>

Certain policymakers and law enforcement agents in the UK suggest that the Draft Online Safety Bill will not necessitate the removal of end-to-end encryption in entirety and instead would just require “exceptional access”¹⁵ for law enforcement agencies through the use of “encryption backdoors”.¹⁶

This assessment is inaccurate from a technical standpoint as end-to-end encryption with backdoors is not true end-to-end encryption.¹⁷ The definition of end-to-end encryption is that no third party, including the service provider or government authorities, holds the key to decrypt messages sent through this method. The process of encryption occurs on a user’s personal device before being transmitted to the recipient’s device, where only then the process of decrypting begins.

The consensus among technical experts is that there are currently no technical solutions that would allow only certain actors access to private communications and not others.¹⁸ The creation of a backdoor for law enforcement access also creates a common gateway that criminals and hostile state actors can use.

Given the above considerations, this brief considers both the removal of encryption for certain groups and the creation of backdoors as a weakening of encryption.

¹⁵ <https://www.theguardian.com/uk-news/2020/feb/25/mi5-chief-asks-tech-firms-for-exceptional-access-to-encrypted-messages>

¹⁶ <https://www.computerweekly.com/news/252447999/UK-and-allies-call-for-backdoors-in-encryption-products>

¹⁷ <https://academic.oup.com/cybersecurity/article/1/1/69/2367066>

¹⁸ <https://www.globalencryption.org/2020/11/breaking-encryption-myths/>

How does the Online Safety Bill Affect the Full Potential of the Internet?

The Internet rests upon several unique foundational properties that have facilitated its growth and fuelled innovation for communities around the world. Yet to achieve the Internet's full potential it is necessary to look beyond this foundation to the mechanisms that enable an Internet that is an open, globally connected, secure and trustworthy resource for everyone. The following section analyses how the Draft Online Safety Bill may impact these enablers and prevent the Internet from reaching its potential.

Easy and unrestricted access

It is easy to become part of the Internet, for networks and users alike. Networks operators can easily add themselves to the Internet's infrastructure without unnecessary regulatory or commercial barriers. Responsive Internet infrastructure creates an Internet that is affordable for users and that has accessible services, empowering users to connect and use the Internet with minimal barriers.

If the draft Online Safety Bill is implemented in its current form, providers will face the impossible task of creating encryption backdoors that are secure. The creation and management of such backdoors would be a costly process. Besides the initial cost of the backdoor's design, providers would likely need to have encryption engineers on constant standby to respond to attacks that will occur due to the vulnerabilities created by the backdoor.

Only the largest service providers will be able to afford these costs, leaving others even less secure. New players, including innovative UK start-ups, will likely lack the resources needed to enter the market, placing the UK's digital sector at a disadvantage, and hurting the UK's ability to compete globally.

These regulatory requirements and their accompanying costs adds a barrier to entry and will result in a less-open Internet with fewer service providers. This in turn will hurt user access, as options for connecting and using the Internet diminish.

Unrestricted use and deployment of Internet technologies

The Internet's technologies and standards are available for adoption without restriction. This enabler extends to end-points: the technologies used to connect to and use the Internet do not require permission from a third party, OS vendor, or network provider. The Internet's infrastructure is available as a resource to anyone who wishes to use it in a responsible and equitable way. Existing technologies can be mixed in and used to create new products and services that extend the Internet's capabilities.

The Online Safety Bill will limit how innovators can mix end-to-end encryption with new or existing technologies to create new products and services to the benefit of Internet users, hurting the UK's ability to lead in innovative digital services. The Online Safety Bill would create a barrier to adopting

future cryptographic protocols that developers create to respond to ever-changing cybersecurity threats. As the rest of the world moves on to new technologies, UK service providers may lag behind with old technologies that are no longer fit for purpose.

The Draft Bill additionally grants Ofcom the power to serve technology notices to service providers that are noncompliant with their duty of care. These technology notices require the provider to use “accredited technologies” to identify and remove public terrorism and Child Sexual Exploitation and Abuse content.¹⁹

References to “accredited technologies” place a limitation on the tools that service providers can use to stay compliant with Ofcom’s technology notices. This limits innovation and the ability of service providers to maximize efficiency and accuracy when pairing technologies to the specific task that they wish to complete. The accreditation of technologies also has ripple effects into other sectors, as providers in other industries that have not received technology notices will likely still opt to use accredited technologies out of an abundance of caution to ensure that they would be able to comply at a future date if needed.

Obligations under the draft Online Safety Bill’s duty of care restrict the use and deployment of current and future encryption technologies and standards, resulting in an Internet that is less open.

Unrestricted reachability

Internet users have access to all resources and technologies made available on the Internet and are able to make resources available themselves, contributing to the Internet’s role as a resource of global knowledge production. Once a resource has been made available in some way by its owner, there is no blocking of use and access to that resource by third parties.

Internet users that are no longer able to use end-to-end encryption technologies will find themselves excluded from resources and services made available on the Internet. Global consumer service providers may leave the UK market to ensure that they are outside the scope of the draft bill. UK Internet users that seek to share and access resources on these services will find themselves excluded, isolating UK Internet users from global knowledge production.

Likewise, individual Internet users may be wary of sharing resources on the Internet if they lack the security reassurances offered by encryption, reducing the flow of information and the resulting opportunities for collaboration, innovation, and business exchange.

¹⁹ Chapter 4, Item 64.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/985033/Draft_Online_Safety_Bill_Bookmarked.pdf

By limiting end-to-end encryption technologies, the Draft Online Safety Bill will distort individual behaviour as well as the behaviour of global service providers, resulting in a less globally connected Internet.

Data confidentiality of information, devices, and applications

Data confidentiality, usually accomplished with tools such as encryption, allows end users to send sensitive information across the Internet so that eavesdroppers and attackers cannot see the content or know who is communicating. Allowing the transfer of sensitive information helps create a secure Internet. Data confidentiality also extends to data-at-rest in applications. (N.B., "confidentiality" also contributes to privacy, which is part of a trustworthy Internet).

End-to-end encryption is a tool that is used to ensure that sensitive information and communications are confidential between senders and receivers. Pressure from the Online Safety Bill to remove or weaken encryption through encryption backdoors will place UK businesses and individuals in danger.

For businesses, encryption protects transaction data and confidential business information from interception. End-to-end consumer messaging applications are used throughout the international business world, to negotiate partnerships and carry out exchanges. Research has shown that laws that weaken encryption fuel business uncertainty and can result in significant economic harm.²⁰

Due to practical and financial motivations, providers that fall outside the scope of the draft bill will likely use the same encryption protocols used by those that fall within the draft bill, resulting in the widespread presence of encryption backdoors beyond messaging platforms. Given this incentive to use existing encryption algorithms and protocols across industries, policymakers will face the challenge of ensuring the use of strong encryption in certain contexts and the use of weakened encryption in other contexts.

The implementation of the draft bill may also shape developers' expectations, by motivating developers to design encryption algorithms that they can easily weaken to comply with the Online Safety Bill. Third parties could infiltrate sensitive information through backdoors to amass data on service providers outside the scope of the draft bill.

Flawed implementation has unintended consequences. For example, Juniper Networks, a tech giant that produces networking equipment for corporate and government systems, illustrates how the flawed implementation of encryption weaknesses intended for one industry can spill over into others.

In 2015 Juniper Networks announced that it had discovered an unauthorised backdoor that for at least three years had allowed third parties to decrypt data passing through its systems. Technical experts believe that this unauthorised backdoor occurred due to the use of an encryption algorithm called

²⁰ <https://www.internetsociety.org/resources/doc/2021/the-economic-impact-of-laws-that-weaken-encryption/>

Dual_EC, which had allegedly been re-engineered to grant the US National Security Agency “exceptional access” to decrypted data. The weaknesses in this algorithm were then exploited by an unknown third party, likely a hostile state actor, who capitalised on these weaknesses to create an unauthorised backdoor.²¹ The presence of this unauthorised backdoor allowed the third party to intercept and manipulate sensitive information as it passed through government systems.

Examples like these highlight the spill over effects when encryption protocols and algorithms cross industries, mirroring the weaknesses intended for private messaging channels and placing critical infrastructure or even government systems in jeopardy.

Individuals also rely on encryption for confidentiality to ensure that what they choose to keep private in their physical lives also stays private in their online lives. There are unique concerns for vulnerable communities that rely on encryption to protect themselves from violence and discrimination. This includes the LGBTQ community,²² domestic abuse survivors, and minority groups. Given the documented rise in LGBTQ-related hate crimes in the UK, this should be of concern to Her Majesty's Government.²³

Civil servants, advocacy groups²⁴ and certain professions including journalists²⁵ and doctors additionally rely on encryption to do their jobs. While the draft Bill may attempt to carve out exemptions for certain groups, in practicality such exemptions will be difficult to maintain as communication between groups and with the public will occur across potentially incompatible encryption systems.

By limiting end-to-end encryption, the Online Safety Bill will reduce data confidentiality for UK businesses and individuals, harming Internet security.

Integrity of information, applications, and services

Strong encryption helps ensure that the integrity of data sent over the Internet, and stored in applications, is not compromised. Critical underlying Internet services, such as DNS and the routing system, cannot be manipulated or compromised by malicious actors. Data stored in applications cannot be manipulated or compromised by third parties.

The Online Safety Bill pushes digital providers to either create encryption backdoors or remove end-to-end encryption. Encryption backdoors create new vulnerabilities that criminals or hostile state actors can exploit to access and potentially manipulate sensitive information.¹³ There are currently no technical

²¹ <https://www.wired.com/2015/12/researchers-solve-the-juniper-mystery-and-they-say-its-partially-the-nsas-fault/>

²² <https://www.internetsociety.org/wp-content/uploads/2019/11/Encryption-LGBT-Perspective-Fact-Sheet-EN.pdf>

²³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839172/hate-crime-1819-hosb2419.pdf

²⁴ <https://www.internetsociety.org/resources/doc/2021/factsheet-how-encryption-can-protect-advocacy-groups-and-social-change-movements/>

²⁵ <https://www.internetsociety.org/wp-content/uploads/2020/03/Encryption-for-Journalists-Factsheet.pdf>

solutions to create gateways for law enforcement use without also making entry easier for third parties.¹⁴

The removal of end-to-end encryption in the UK will place the integrity of information at extreme risk. This will leave UK businesses and individuals vulnerable to malicious attacks that would compromise data.

UK businesses rely on end-to-end encryption to protect trade secrets and sensitive financial data. Consumer messaging products are the de facto platforms for conducting business around the world. Attacks on decrypted information could see business records manipulated in efforts to harm the company's reputation, production capacity, or commit fraud. For example, in December 2021, hackers diverted a \$130 million business transaction to a Hong Kong bank account by manipulating data in transit.²⁶

Businesses outside the scope of the Draft Bill are likely to use the same encryption protocols, complete with backdoors, that businesses within the scope of the Draft Bill use due to practical and financial concerns related to adopting new technologies. Given the technical difficulty of designing encryption systems, engineers are motivated to avoid the duplication of efforts and build upon existing encryption protocols.

Mandating different encryption standards for different industries creates systemic complexities. In practice, developers embed encryption into products and services at various points in the supply chain, and often not at the final stage before consumer use. The complexity of enforcing different encryption standards along the supply chain could result in increased risk for consumers if data integrity is left unprotected.

The manipulation of this data could result in real world harm when hostile actors tamper with connected objects. For example, in July 2015 attackers exposed a vulnerability in the Uconnect system used by Chrysler vehicles by demonstrating their ability to remotely cut out the car's transmission and brakes as well as commandeer the steering wheel.²⁷ Unexpected encryption weaknesses in the supply chain of connected products would increase exposure to such attacks.

Machine in the Middle (MITM) attacks may also become more common. These attacks occur when an individual secretly places themselves in the middle of a conversation, intercepting messages and either reading or altering them before passing them along. Without encryption, there is less assurance that

²⁶ https://www.law360.com/cybersecurity-privacy/articles/1447476/chancery-probes-contract-risks-in-130m-merger-hack?nl_pk=8f274be7-bce7-4f2d-929a-36043970098f&utm_source=newsletter&utm_medium=email&utm_campaign=cybersecurity-privacy

²⁷ <https://www.theverge.com/2015/7/21/9009213/chrysler-uconnect-vulnerability-car-hijack>

the individual that you think you are communicating with is indeed who they say they are, opening individuals up to new scams and fraud.

In summary, the Draft Online Safety Bill's efforts to weaken encryption will reduce the integrity of data sent over the Internet and reduce Internet security, resulting in harm to businesses and individuals.

Reliability, resilience, and availability

The Internet is reliable when technology and processes are in place that permit the delivery of services as promised. If, for example, an Internet service's availability is unpredictable, then users will observe this as unreliable. This can reduce trust not just in one single service, but in the Internet itself. Resilience is related to reliability: a resilient Internet maintains an acceptable level of service even in the face of errors, malicious behaviour, and other challenges to its normal operations.

Users that communicate over encrypted services have the expectation that their communications are private and anonymised. The Draft Online Safety Bill's requirement to either remove or weaken encryption would result in private messages sent through so-called re-engineered encryption being read by law enforcement authorities as well as malicious actors who act to exploit the new vulnerabilities in the system.

The disconnect between what the users of encrypted services expect and what is delivered because of the Online Safety Bill will erode the public's perception of encryption's reliability. As perceptions deteriorate, the use of the Internet will likely also deteriorate.

For example, journalists may struggle to use the Internet to connect with sources if they cannot guarantee that their testimonials will remain confidential. Likewise, vulnerable communities such as LGBTQ youth may choose not to use essential services like suicide hotlines out of fear that their identity may be exposed, outing them, and putting them at risk of discrimination or violence. Such changes will hurt society, limiting our ability to hold power to account and further isolating vulnerable individuals.

When 're-engineered encryption' under the Draft Online Safety Bill fails to deliver, public trust in encryption and the wider Internet will decrease, depriving the UK public of the Internet's many benefits.

Accountability

Accountability on the Internet gives users the assurance that organizations and institutions they interact with are directly or indirectly acting in a transparent and fair way. In an accountable Internet, entities, services, and information can be identified and the organizations involved will be held responsible for their actions.

The Online Safety Bill grants regulatory powers to Ofcom to require that service providers within the scope of the draft bill to decrypt communications and make them available for law enforcement purposes. The draft of the bill does not set thresholds for the type or volume of data shared in these circumstances. It also does not provide a mechanism for users to track when and how their data is

shared. Without further clarification, Internet users will lack the assurance that their private data is used appropriately.

The Draft Bill additionally grants the Secretary of State for Digital, Culture, Media and Sport with the power to add or remove providers from an exemption list based on the risk of harm to individuals. The Draft Bill does not set clear limitations on this power, allowing for a high degree of discretion, and creating openings for misuse.

The Draft Bill does not provide guidance on the distinction between content that is “illegal” and content that is “legal but harmful” despite both categories being within the scope of the Draft Bill. Ofcom’s forthcoming codes of practice will define the types of content that will be moderated and set concrete expectations for service provider behaviour under the four levels in the duty of care.

These codes of practice must clarify how data in private messages, particularly encrypted private messages, is treated differently from publicly posted data. This would include the threshold needed to grant law enforcement access, limitations on the storage and transferring of private data, and mechanisms for users to report undue censorship, among others.

It is important to acknowledge that the draft bill provides special protections for journalistic content and “content of democratic importance”. The inclusion of such limitations increases accountability. However, the ambiguous definitions of these protections only give a semblance of accountability. For example, an Internet user may be unsure if the content they produce is of democratic importance, or not.

Without proper accountability functions that place limitations on data requests and exemption lists, the Online Safety Bill threatens to reduce accountability on the Internet, decreasing its trustworthiness.

Privacy

Privacy on the Internet is the ability of individuals and groups to understand what information about them is being collected and how, and to control how this is used and shared. Privacy often includes anonymity.

End-to-end encryption provides users with the ability to communicate freely with the assurance that only their intended recipient will be able to access and use their data. By effectively removing end-to-end encryption, the Draft Online Safety Bill reduces these privacy assurances, reducing the ability of Internet users to control the movement of their data and creating uncertainty as to who can access, share, and store their data.

The right to privacy is closely related to freedom of expression. Individuals may self-censor their private communications due to anxiety of their personal data being abused in a phenomenon called the chilling effect. Without guarantees and transparency as to how data is collected, used, and stored

individuals will fear that the things they keep private in their real lives will not remain private in the digital lives. Meanwhile, businesses may fear that their trade secrets, commercial and financial communications, and privileged communications are inappropriately accessed and shared.

Strict guidelines for government use, storage, and access to data is essential for protecting privacy. Yet, even governments with the most stringent data laws will be unable to protect private data from criminals and third parties when encryption is weakened. These privacy violations will be particularly concerning to UK national security if hostile state actors are able to discreetly collect and process the data of high-profile individuals. Privacy violations may lead to related political consequences, such as the revoking of the June 2021 data adequacy decision granted to the UK by the EU.²⁸

Loss of privacy may also have ramifications for the safety of children when their private data is no longer protected and may more easily be exploited by predators to obtain sensitive images or for grooming purposes – directly countering one of the main objectives of the Draft Bill.

Even in countries like the UK where rule of law is strong, government or law enforcement access to private communications could be abused by individuals that violate the agreed norms and use their privileged access to track political dissent or utilize private data for personal gain.

A further consideration is needed for the precedent that the Online Safety Bill will set for the rest of the world. By implementing regulation that places holds on the use of end-to-end encryption the UK will empower other countries with potentially less robust rule of law standards to enact similar legislation. In these scenarios government abuse of private data may be used in a systemic manner to further authoritarian goals with no checks and balances. This not only may be harmful to the UK's reputation as a defender of human rights but may also exacerbate geopolitical issues as other states consolidate control over the information and resources that their citizens have access to.

The Online Safety Bill's weakening of encryption presents serious privacy concerns with consequences for individuals, businesses, and national security. The global precedent that the Online Safety Bill sets may empower authoritarian governments around the world to systematically crack down on privacy, cementing their control over information and harming the UK's reputation as a defender of human rights.

²⁸ https://ec.europa.eu/commission/presscorner/detail/ro/ip_21_3183

Summary & Recommendations

Using the Internet Impact Assessment Toolkit, this brief has found that encryption requirements under the UK's Draft Online Safety Bill will negatively impact all four of the qualities that maximize the Internet's potential as a resource for good: *open, globally connected, secure* and *trustworthy*.

By infringing upon easy and unrestricted access to the Internet as well as the unrestricted use and deployment of Internet technologies, the Draft Online Safety Bill will make the Internet a less *open* resource while by reducing the Internet's reachability it will limit *global connectivity*. The Draft Online Safety Bill likewise harms Internet *security* by reducing the confidentiality and integrity of information passing through its system. Internet *trustworthiness* is also reduced under the Draft Online Safety Bill as privacy guarantees are lost, accountability weakened, and reliability, resilience, and availability reduced.

These losses will have important consequences for UK businesses, Internet users, and vulnerable communities as well as the global reputation of the UK. The duty of care articulated in the draft Bill focuses on the duty of providers to protect users from exposure to harmful content but fails to address the duty of providers to equip users with the tools to protect themselves online.

In this sense, while the Draft Online Safety Bill claims that it will make the UK 'the safest place in the world to be online,' this report has found that by dismantling strong encryption, UK Internet users will in fact face an Internet that is more insecure and unsafe than before.

This brief offers three recommendations:

1. That the Draft Online Safety Bill be redrafted so that it is **compatible with strong, end-to-end encryption**. Encryption is an essential element of an open, globally connected, secure and trustworthy Internet.
2. It is recommended that removing or weakening encryption through **backdoors is actively discouraged due to the accompanying security risks**. There are currently no technical solutions that would grant law enforcement access to encrypted messages without also creating vulnerabilities that could be exploited by malicious third parties.
3. Finally, it is recommended that **a full and robust Internet impact assessment is conducted** by Her Majesty's Government to identify the potential harms to the Internet resulting from weakened encryption under the Draft Online Safety Bill. This Assessment should build upon the [existing Impact Assessment](#), which failed to adequately examine encryption and inter-related issues. The Assessment should also be conducted at an early date, to ensure that Parliament is fully informed during the legislative process.