Internet Shutdowns

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Introduction

Restrictions to Internet access are on the rise globally[1]; barely a week goes by without news of government-mandated disruptions of Internet access. Driven largely by political and national security concerns, state-ordered Internet shutdowns are on the verge of becoming the "new normal".

At a time when governments of the world have committed to leveraging the power of the Internet and ICTs to reach the U.N. goals on Sustainable Development in areas such as education, health and economic growth, cutting off entire populations from the Internet sets the path in the wrong direction.

This policy brief highlights a series of externalities associated with Internet shutdowns and calls on policymakers to "think twice" whenever they consider restrictions of access as a means to address policy challenges.

Internet shutdown definition

An Internet shutdown can be defined as an "intentional disruption of Internet or electronic communications, rendering them inaccessible or effectively unusable, for a specific population or within a location often to exert control over the flow of information"[2].

In practice, Internet shutdowns usually fall under two main categories:

1. A *total shutdown* or blackout where all services on the Internet are blocked off, targeting mobile Internet access and/or fixed lines, such that users in a country or region are not able to access the Internet.

2. A *partial shutdown*, where content blocking techniques[3] are applied to restrict access to websites or applications, very often to block people from communicating or sharing information amongst them.

Where we are

In a period of steady decline of Internet freedom for the past several years[4], Internet shutdowns started gaining global attention during the Egypt uprising in 2011, when authorities shut down the Internet for nearly a week to disrupt communications of protestors[5]. Since then, the use of Internet shutdowns as a tool for political purposes has steadily risen: according to Access Now, as of Q3 2017, the number of shutdowns increased from 55 in 2016 to 61[6]. While the phenomenon is global, current trends indicate that India and Pakistan lead with the most documented shutdowns, followed by the MENA and Sub-Saharan regions[7].

In most cases[8], authorities do not disclose the reasons for the disruption, leaving citizens and advocates to second-guess the reasons for the shutdown. When authorities do speak up, common justifications include arguments like preserving public order and national security usually during protests and elections, or stopping rumors and dissemination of illegal content. Prevention of cheating during national exams has also been used as a reason to justify restrictions on access[9].

Against this backdrop, a growing number of governments, businesses, civil society organisations, technical community bodies and individuals have been speaking up against Internet shutdowns[10]. The *Keep It On!* coalition[11], for instance, gathers over 130 organizations and 50'000 individuals from over 56 countries.

Key considerations

Internet shutdowns have far-reaching rights, economic, and technical impacts. They undermine users' trust in the Internet, setting in motion a whole range of consequences for the local economy, the reliability of critical online government services and even for the reputation of the country itself. Policymakers need to consider these costs alongside security imperatives.

Human Rights impact

Internet access cannot be distinguished from the exercise of freedom of expression and opinion and the right to peaceful assembly.

These rights - recognized in the Universal Declaration of Human Rights and reflected in the Constitutions of many of the countries where those shutdowns occur - entrust governments with the responsibility to respect them and protect their citizen's enjoyment of them. As stated by the UN Human Rights Council in 2012 and reaffirmed since, people should enjoy the same protections of these rights whether in online or offline contexts[12].

In practical terms, people routinely depend on the Internet to stay in touch with family and friends, create local communities of interest, report information of public nature, hold institutions accountable, access and share knowledge.

As such, Internet shutdowns, in particular those that disable all means of communications, should be considered as potential Human Rights violations. While rights such as free speech are not absolute and can be restricted on exceptional grounds - such as national security and public order - they also need to follow the three-part test laid out in Article 19(3) of the ICCPR, including meeting proportionality and necessity criteria[13].

In recent years, the Human Rights' community has stepped up its efforts to address the impact of Internet shutdowns on rights. The UN Special Rapporteur on freedom of expression has voiced concerns at the disproportionate impact of Internet shutdowns on people's right to expression[14]. A Human Rights Council (HRC) resolution, adopted by consensus in 2016, stated that it "condemns unequivocally measures to intentionally prevent or disrupt access to or dissemination of information online in violation of international human rights law"[15]. At the grassroots level, NGOs

are also starting to flag Internet shutdowns as part of the HRC's Universal Period Review mechanism, that reports on countries' human rights record[16].

Economic impact

Internet shutdowns affect economies in numerous ways, disturbing productivity and generating monetary losses in time-sensitive transactions.

Several studies[17] have determined that there is a real impact of shutdowns on countries' Gross Domestic Products (GDP). For example, research by the Brookings Institution[18] shows that Internet shutdowns cost countries about USD 2.4 billion between July 1, 2015 and June 30, 2016, with maximum losses incurred by India (USD 968 million). According to a report by CIPESA, Sub-Saharan Africa lost up to USD 237 million to Internet shutdowns since 2015[19]. Deloitte estimates that even countries with low levels of Internet access are exposed to an average estimated GDP impact amount of USD 6.6 million per day.

Beyond macro-economic impacts, shutdowns also affect businesses and SMEs in very tangible ways. As an example, in early 2017 a 94-days shutdown affected the Anglophone part of Cameroon – a region also known as "Silicon Mountain". Countless stories were reported on local entrepreneurs who lost contracts and couldn't conduct important transactions, leading to loss of money, business closures and firing of employees[20].

Notwithstanding the impact on the entire economy, businesses that are heavily dependent on electronic transactions are particularly exposed to very serious consequences such as bankruptcy. For example, e-payments are becoming increasingly common not only in the developed world but in many developing countries.[21] In countries such as India, where the government has launched an ambitious plan towards demonetization and digital payments, frequent cuts of connectivity across various states are directly at odds with digital economy outlooks[22].

While shutdowns raise financial and reputational risks for ICT companies and their investors[23], the secondary economic impacts resulting from a climate of uncertainty can potentially discourage foreign investors and spillover on a wide range of sectors, including the tourism industry[24].

Technical impact

Shutdowns in terms of blocking specific websites or applications are often prone to generate collateral damages for Internet users. Such consequences can take the form of over-blocking of websites and content that was not intended to be restricted, for example when unrelated websites hosted on the same server as the targeted website are affected by the shutdown[25]. The use of traffic hijacking to block platforms at the national level have even led to global unavailability of a service[26]. Other collateral damages include exposing users to privacy and security risks, for example when people turn to untrustworthy VPNs in order to route around restrictions.[27]

Still in the realm of content blocking, vaguely worded judicial orders sometimes force ISPs and other network-level operators to assess which content is acceptable or not and, to proceed to remove it. Irrespective of their duty before the law to respond to court orders, such actors are generally not equipped to take on the role of judge and jury, nor should they. Legal certainty and clearly defined judicial requests are important conditions so that network service providers can perform their primary function; extending connectivity and make the Internet work.

In terms of complete network blackouts, the technical damage on the remaining networks is less evident and still undetermined. Yet, being part of an interconnected network means having responsibility towards the network as a whole, and shutdowns hold the potential to generate systemic risks.

Challenges

The increase of politically motivated Internet shutdowns is one of the critical concerns reflected in the Internet Society's Global Internet Report 2017[28], where the growing role of government has been identified as a key driver of change of the network's future. Here are a set of challenges related to the use of Internet shutdowns by governments.

National security and public order

Governments have legitimate concerns and duties to safeguard public order and national security for their citizens. Yet, any measure that restricts free expression or association in order to advance such objectives must remain exceptional, be grounded in law and be strictly necessary and proportional to achieve a legitimate aim. During shutdowns, many citizens feel that their fundamental rights are being violated, nurturing discontent and a feeling of insecurity that can generate negative consequence for the stability of the country.

Cross-border environment

Governments are faced with the challenge of applying their national legislation in an online environment marked by cross-border content platforms. In the context of a global and open Internet, removing content considered illegal in a specific jurisdiction is not as simple as asking a local server to remove that content. Unless they are able to get effective collaboration from such platforms, this cross-border complexity may lead some governments to opt to shut down these platforms entirely, instead of removing specific content.

Censorship in a post-shutdown world

The increase of shutdowns has measurable economic costs, but they can also lead Internet users to change their behavior, possibly leading to self-censorship.

In addition, while blunt connectivity shutdowns are attracting global attention right now, it is possible that in the future more sophisticated content filtering techniques will become ubiquitous. Intelligent algorithms powered by machine learning are already fueling real-time censorship tools in some parts of the world[29], and it is not unlikely that such tools will be increasingly exported. Such a scenario would make censorship less visible and more difficult to detect and react to.

Shutdowns undermine commitments to Development Goals

Because of the role of the Internet in advancing public policy goals such as education, health and economic development, in 2015, 194 countries of the UN General Assembly recognized ICTs as a horizontal catalyst to reach the new 2030 Development Agenda. The U.N. Sustainable Development Goals (SDGs) demonstrate the world's commitment to social and economic growth. In particular, governments commit to ensuring universal and affordable Internet access by 2020[30]. Internet shutdowns are in conflict with this commitment.

Effectiveness

There is currently no evidence of the effectiveness of shutdowns to solve the issues they are meant to address, in particular when they are meant to restore public order. On the other hand, there are multiple accounts of collateral damages provoked by these measures. In addition, Internet shutdowns tend to attract international attention and create pressure on countries that undertake them. This relates to the so-called "Streisand effect", where the attempt to silencing voices or hiding information leads to the unintended consequence of bringing more attention to them.

Guiding principles

Freedom of expression

Freedom of expression should be the norm, and any limitation to this right the exception. The central role of the Internet in users' social and economic lives recently led the United Nations to enact a resolution supporting "the promotion, protection and enjoyment of human rights on the Internet[31]". The resolution condemns state efforts to intentionally prevent or disrupt access to information online.

Due process of law, proportionality and necessity

Grounded in the principles of international human rights law, proportionality and necessity assessments should guide the actions of any policymaker entertaining the use of Internet shutdowns as a policy tool.

Necessity means that any restriction of Internet access must be limited to measures which are strictly and demonstrably necessary to achieve a legitimate aim. It should be demonstrated that no other measure would achieve similar effects with more efficiency and less collateral damages.

Necessity also implies an assessment of the proportionality of the measures. Any restriction of Internet access must also be proportional. A proportionality assessment should ensure that the restriction is "the least intrusive instrument amongst those which might achieve the desired result"[32]. The limitation must target a specific objective and not unduly intrude upon other rights of targeted persons.

Cost-benefit assessment

There are many costs to be considered as a result of Internet shutdowns; economic, technical, social. Governments need to consider these short and long-term effects. In most cases, even shutdowns as short as a week may have long term implications extending way after issues are resolved. The loss of trust and confidence in the Internet as a reliable platform of opportunities could have unquantifiable negative impacts, in particular on younger generations that see connectivity as a path to their future.

Recommendations

Dialogue must be encouraged between governments, private sector players, the technical community, academia as well as civil society. Governments should be cognizant that shutdowns affect many sectors of society and it is imperative to engage in an open exchange with them with an aim to seek alternative ways of addressing legitimate issues, rather than turning to shutdowns as a policy tool.

Governments

- **Follow the due process of law**: Governments should commit to maintaining up to date, human rights-respecting legislations that detail the limited and narrowly defined circumstances under which shutdowns or any communications disruption may occur. This should be done in compliance with Article 19 of the International Covenant on Civil and Political Rights (ICCPR)[33].

- **Improve transparency and legal certainty**: Governments owe their citizens transparent and timely justifications on how, why and when government agencies may opt for a disruption of access.

- **Think twice, measure the cost first**: Governments need to do a cost-benefit analysis of what shutdowns cost with particular attention to how they may affect small businesses and young people. Network disruptions hinder productivity, adversely impacts business confidence, and could be detrimental to short and long-term investments.

- **Rule out all non-shutdown options**: Governments should look out for best practices in addressing issues at their source, prioritizing alternative measures to shutdowns. Sharing experiences within and across regions could bring solutions that do not rely on restrictions to access.

- **Reflect shutdown considerations in aid policies**: Development banks and lending agencies can play an important role in including Internet shutdowns assessments as part of their investment and funding policies and conditions.

Businesses

- **Prioritize customer needs**: ISPs and telecommunication operators should challenge illegal requests from governments to uphold the rule of law. They should also be transparent with their customers around shutdown requests and communicate how long these disruptions are likely to occur.

- **Diversify voices**: Venture capitalists and investors should integrate shutdowns as part of their risk assessment. The voice of SMEs and their importance to the economy's future needs to be heard more loudly, in light of how shutdowns may entirely undermine their operations and prospects.

Civil society

- **Perform a watchdog function**: Civil society organizations, along with other stakeholders, should continue to play a key role calling for government accountability and transparency around shutdown occurrences.

- **Expand advocacy arguments**: Civil society actors should use economic arguments in addition to human rights to strengthen their advocacy and convince governments that shutdowns are not rationale practices.

Technical community

- **Build resilient infrastructure**: The Internet technical community has a key role to play in expanding resilient connectivity solutions[34]. More distributed and numerous network access points will likely make it more difficult and cumbersome for government to resort to a single "kill switch".

Additional resources

Internet Society

Human Rights Resource Center. https://www.internetsociety.org/humanrights

Reports

Internet Society Perspectives on Internet Content Blocking: An Overview. 2017. https://www.internetsociety.org/resources/doc/2017/internet-content-blocking/

Statements & blogs

ISOC Togo Chapter Calls On Togo Government to Restore Internet Access. Sept 2017. https://www.internetsociety.org/blog/2017/09/isoc-togo-chapter-calls-togo-government-restore-internet-access/

Internet Society statement on Internet blocking measures in Catalonia, Spain. September 2017. https://www.internetsociety.org/blog/2017/10/response-community-cat-issues/

"The Internet is Home" – Youth voices on why we should keep the Internet on. June 2017. https://www.internetsociety.org/blog/2017/06/the-internet-is-home-youth-voices-on-why-we-should-keep-the-internet-on/

Internet Shutdowns Are Not a Solution to Africa's Challenges. June 2017. https://www.internetsociety.org/blog/2017/06/internet-shutdowns-are-not-a-solution-to-africas-challenges/

Common Statement By AF* on Internet Shutdowns in Africa. June 2017. https://internetsummitafrica.org/afrinic-26/news/160-common-statement-by-af-on-internet-shutdowns-in-africa

Let's Keep The Internet On For Everyone. 2017. https://www.internetsociety.org/lets-keep-internet-everyone/

External

Reports

The economic impact of disruptions to Internet connectivity. Deloitte, Facebook. October 2016. https://globalnetworkinitiative.org/sites/default/files/The-Economic-Impact-of-Disruptions-to-Internet-Connectivity-Deloitte.pdf

Internet shutdowns cost countries $2.4 billion last year. Brookings. October 2016. https://www.brookings.edu/wp-content/uploads/2016/10/intenet-shutdowns-v-3.pdf

Internet shutdowns: The risks and opportunities for technology sector investors. Access Now & ShareAction. September 2016. https://shareaction.org/wp-content/uploads/2016/08/InvestorBriefing-InternetShutdowns.pdf

https://freedomhouse.org/report/special-reports/internet-freedom-election-monitor

Statements

Keep It On: IFLA calls for an end to Internet Shutdowns. August 2017. https://www.ifla.org/files/assets/faife/statements/ifla_internet_shutdowns_statement.pdf

The Freedom Online Coalition: Joint Statement on State Sponsored Network Disruptions. March 2017. https://www.freedomonlinecoalition.com/wp-content/uploads/2017/03/FOCJointStatementonStateSponsoredNetworkDisruptions.docx.pdf

Global Network Initiative and Telecommunications Industry Dialogue Joint Statement on Network and Service Shutdowns. July 2016. http://globalnetworkinitiative.org/news/global-network-initiative-and-telecommunications-industry-dialogue-joint-statement-network-and

The promotion, protection and enjoyment of human rights on the Internet. UN Human Rights Council. June 2016. http://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/32/L.20

Service Restriction Orders. GSMA. 2016. https://www.gsma.com/publicpolicy/handbook/consumer-protection

Other

Internet shutdown tracker India, Software Freedom Law Center. https://www.internetshutdowns.in

Shutdown Tracker Optimization Project: the #KeepItOn internet shutdown tracker. Access Now. https://www.accessnow.org/keepiton-shutdown-tracker/

#KeepItOn Campaign. Access Now. https://www.accessnow.org/keepiton/

1   West, D.M. (2016, October). Internet Shutdowns Cost Countries $2.4 billion last year. *Trends in the number of Internet Disruptions,* P: 2-3. https://www.brookings.edu/wp-content/uploads/2016/10/intenet-shutdowns-v-3.pdf

2   Internet Shutdowns definition from www.accessnow.org/keepiton/

3   https://www.internetsociety.org/resources/doc/2017/internet-content-blocking/

4   In its 2016 Freedom on the Net report, Freedom House revealed that Internet freedom declined for the 6th year in a row. The report notes that more governments have been blocking social media and communication apps than ever before.

5   http://www.telegraph.co.uk/news/worldnews/africaandindianocean/egypt/8288163/How-Egypt-shut-down-the-internet.html

6   https://www.accessnow.org/keepiton-shutdown-tracker/

7   Data from Jan 2016 to Sept 2017, Shutdown Tracker Optimization Project (STOP)-https://www.accessnow.org/keepiton-shutdown-tracker/

8   Idem

9   Idem

10   See a list of statements in the References

11   https://www.accessnow.org/keepiton/#take-action

12   UN Human Rights Council Resolution A/HRC/20/L.13 (2012): http://tinyurl.com/y7aonaw5 [Doc]

13   International Covenant on Civil and Political Rights (ICCPR), article 19(3). More on limitations to freedom of expression: https://www.article19.org/pages/en/limitations.html

14   http://www.ohchr.org/EN/Issues/FreedomOpinion/Pages/SR2017ReporttoHRC.aspx

15   UN Human Rights Council Resolution A/HRC/32/L.20, July 2016

16   Example: https://www.apc.org/en/pubs/joint-submission-united-nations-human-rights-council-universal-periodic-review-2018-cycle-–

17   It should be noted that current research on the size of the digital economy or the impact of lack of Internet access on economic activities are all prone to risks of over-estimation (e.g. use of alternative communication means when Internet access is unavailable) and under-estimation (e.g. complex supply-chain effects as a result of lack of access, tax losses, loss of investor confidence). As such, numbers provided need to be understood as providing an order of magnitude, with these limits in mind.

18   As an illustration, the Brookings methodology identifies the size of the country's GDP (using 2014 World Bank data), the duration of the disruption (in number of days), and the percentage of the population affected by the disruption. More information on the methodology and other results can be found here: https://www.brookings.edu/wp-content/uploads/2016/10/intenet-shutdowns-v-3.pdf

19   https://cipesa.org/2017/09/economic-impact-of-internet-disruptions-in-sub-saharan-africa/

20   http://www.nasdaq.com/article/african-rulers-weapon-against-webbased-dissent-the-off-switch-20171017-00062

21   For example, M-Pesa has become a widely used service in Africa, leapfrogging challenges from the traditional banking sector. http://unctad.org/en/PublicationsLibrary/dtlstict2012d2_en.pdf

22   https://blogs.timesofindia.indiatimes.com/static-variable/digital-payments-and-internet-shutdowns-cannot-go-hand-in-hand/

23 https://shareaction.org/wp-content/uploads/2016/08/InvestorBriefing-InternetShutdowns.pdf

24 http://www.oecd.org/countries/egypt/theeconomicimpactofshuttingdowninternetandmobilephoneservicesinegypt.htm

25 For example, in 2017 a court-ordered block affected the availability of several unintended websites sharing the same IP address: https://arstechnica.com/tech-policy/2017/02/a-court-order-blocked-pirate-sites-that-werent-supposed-to-be-blocked/

26 For example, in 2008 Pakistan caused a global Youtube outage when attempting to block access to the platform in their country: http://abcnews.go.com/Technology/story?id=4344105&page=1

27 More on this can be read from our Internet content blocking paper.

28 https://future.internetsociety.org/wp-content/uploads/2017/09/2017-Internet-Society-Global-Internet-Report-Paths-to-Our-Digital-Future.pdf

29 https://citizenlab.ca/2016/11/wechat-china-censorship-one-app-two-systems/

30 http://www.undp.org/content/undp/en/home/sustainable-development-goals.html

31 UN Human Rights Council Resolution A/HRC/32/L.20, July 2016

32 See Human Rights Committee, (1999) on freedom of movement, para. 14.

33 http://www.ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx

34 See ISOC's work on Community Networks: https://www.internetsociety.org/issues/community-networks/