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Content blocking and filtering: A Technical approach to solve Socio/Political Issue?

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Internet and Content Filtering

Internet is now become the most diverse, powerful and fastest way of communication, one of the best tools to create public opinion rightly or wrongly. So governments are keen to have a control over it.

Motivation for Filtering@National level

- a. Child Online Protection
- b. Religious Believe
- c. Cultural Taste
- d. Political Motivation
- e. Fake News

Where Does Content Blocking Occurs?

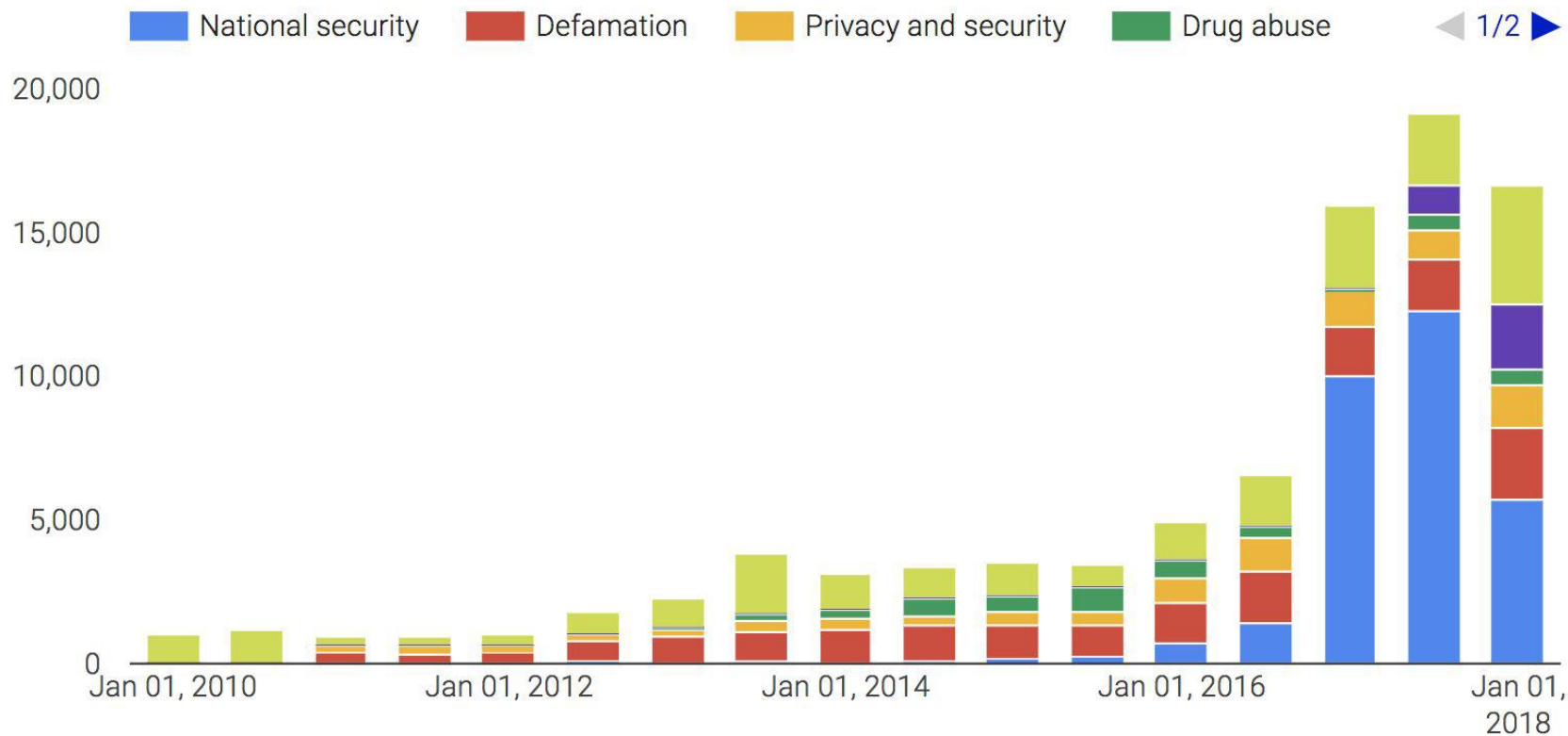
National level	When mandated by government policy, all traffic entering or leaving a country may be subject to content blocking. Though requires tight control over all cross-border interconnection
Carrier and ISP level	Individual Carrier or ISP may install blocking devices or tools
Local Network level	In corporate, school or campus network may have their own policy to block content
End User level	Mostly by end user software or by home access gateway mostly for security and privacy reason

Content Blocking Request to Facebook [H2 - 2017]

Country	Count
Turkey	3,832
Mexico	2,280
India	1,914
Germany	1,893
Brazil	1,137
Italy	535
Israel	487
France	354
Pakistan	301

Source :
<https://transparency.facebook.com/>

Content Blocking Request to Google



Source: <https://transparencyreport.google.com>

Types of Content Filtering

- a. Prefix Filtering
- b. URL/URI Filtering
- c. DPI
- d. Starvation of Bandwidth
- e. Destination IP Specific QoS / QoE
- f. DNS based Filtering
- g. Shutdown / Denial of Access

Surveillance and Mass Surveillance(DPI)

Usually by the Govt./LEA/Intelligence Organization

- a. Mostly by Man in the Middle Attack
- b. Though Losing effectiveness due to harder encryption
- c. Direct violation of Privacy and Human rights
- d. Sometimes operators are pressurized to implement eventually ends with shutdown
- e. Suppression of Freedom of Speech

Content Filtering and blocking at National level

Inline DPI at
Internet
Transit



Another
agency is
preparing...



Content Blocking Request Since February'18:BD

Political Content	254
Gambling Sites	769
Pornographic Content	3056
Others	50
Total	4129

Countries Shutting down the Internet the most

Number of internet shutdowns by country (Jan 2016–May 2018)*



* An internet shutdown occurs when someone (usually the government) intentionally disrupts the internet or mobile apps to control what people say or do.

Technical and Operational Challenges

1. Biggest Challenge is to get a desired result without breaking the Internet.
2. Its becoming a huge pressure to the ISPs to comply with the Government order to block specific content.
3. IP Address, App ID, URL, etc. based Blocking blocking the right to use internet / content wholistically in respect to that resource, which is not fair.
4. Man-In-The-Middle attacks actually breaches the data security, incurs the identity theft and it is opening up personal data and user right to attacker. This method is eventually illegal.
5. Blocking a specific content to a specific user base, can easily turned out to be, Blocking the entire service to a whole nation.

Real Life Challenges

There are fake news, terrorism, defamation, financial crime and many other anti state/anti social activities. Which influencing government to have a strong control over it, resulting Content Blocking and filtering.

Content Blocking and Filtering put Privacy and Freedom of speech in danger. Open free Internet is no longer open. Limiting voice of the unheard.

Real Life Challenges (cont.)

Technologies evolving every moment.

Can we solve these issues by filtering or Blocking?

Or

We should look for a social and political solution?

Before we end....



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Thank you!

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