The Filtering Matrix

Filtering and Surveillance Practices Worldwide

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Internet Challenges

- Bloggers and independent media challenge traditional corporate and state-owned media
- VoIP is seen as a threat by traditional tele-communications companies
- Offshore gambling and banking sites challenge existing laws and regulations
- File sharing services have significantly impacted the area of copyright and intellectual property
- Spam, child pornography, identity theft, computer break-ins and terrorism present significant security concerns

Borders in Cyberspace

In an effort to counter the once borderless Internet, states are seeking to create informational boundaries in cyberspace.

Informational Borders

- Although decentralized there are significant "choke points" at which controls can be placed on the Internet

- Technical & non-technical mechanisms used to censor and control access to the Internet

- Filtering is the technical mechanism through which such controls are operationalized

Internet Filtering

- Internet content filtering is a term that refers to the techniques by which control is imposed on access to information on the Internet
- The motivations for state-directed Internet filtering include those with:
  - a specific emphasis on e-commerce: tax, copyright, VoIP
  - a specific emphasis on children: child pornography, violence
  - a specific emphasis on content
    - cultural: pornography and gambling
    - political: dissidents and independent media
   - security: (cyber)terrorism and hacking

Filtering Techniques
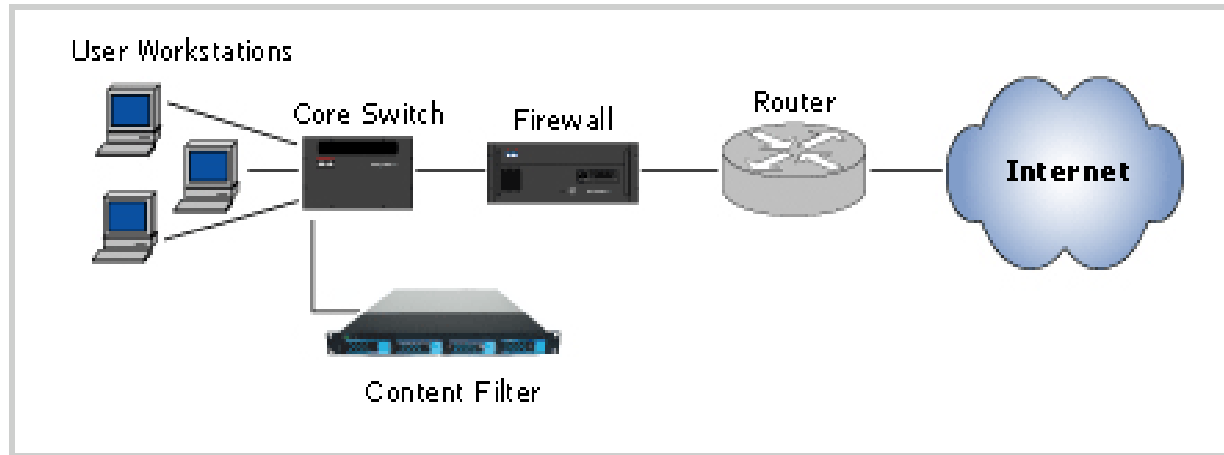
- **DNS filtering:** modification to DNS servers to prevent a domain name from resolving to the correct IP address.

- **IP filtering:** entries are made in routing equipment that stop all outgoing requests for a specific IP address

- **URL filtering:** filtering technology that (a) reassembles the packets for traffic flowing through its network, (b) reads each http request, and (c) if the URL in the request matches one of the URLs (or keywords) specified in a blocklist, block the http request.

Filtering Technology
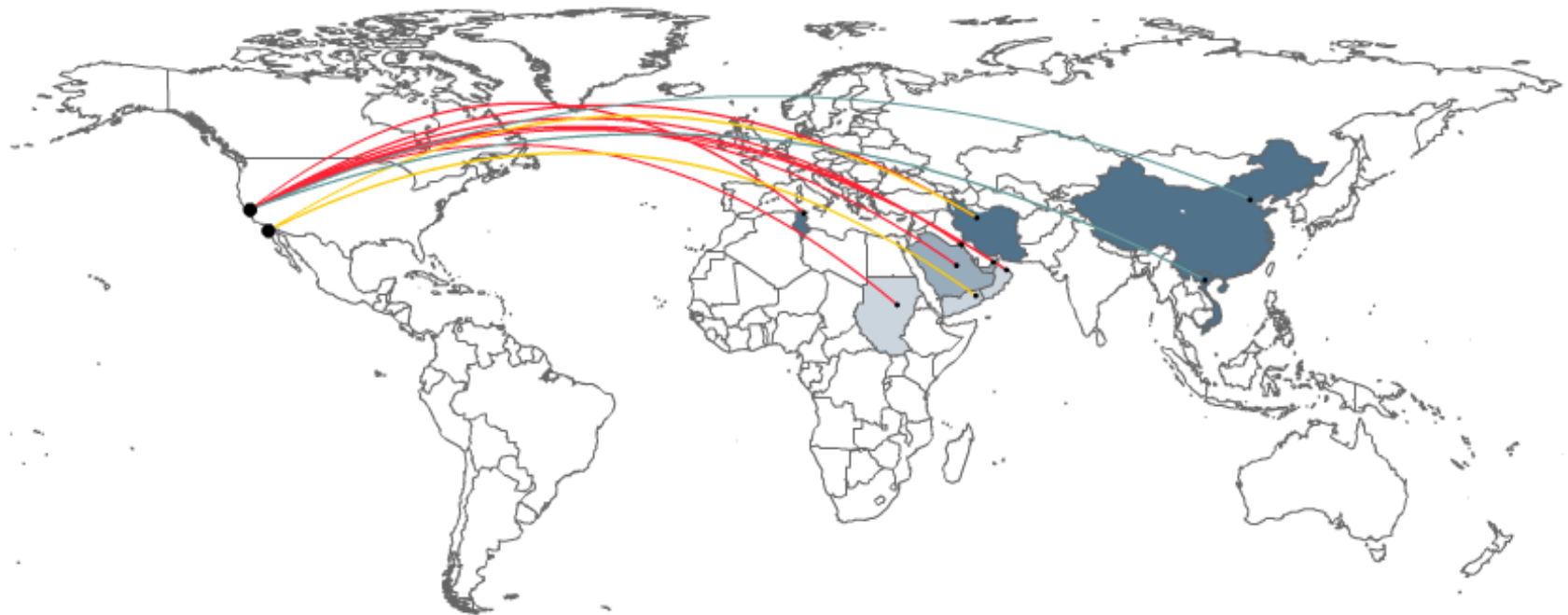
Filtering: Pervasive | Substantial | Nominal | No Blocking | No Data

Filtering Technology: SmartFilter | Websense | Cisco

Transparency & Accountability

Some countries are quite transparent about filtering practices, from both a policy and technology standpoint, while others remain closed and secretive.

The Decision to Filter

- Most filtering regimes are implemented as a result of vague laws which are open to loose interpretations, Ministerial decree or through obscure "national security" channels.

- Rarely is there acknowledgement of specific blocked sites

By FAX
(Followed by Post)

Government of India
Ministry of Communications & Information Technology
Department of Telecommunications
(LR Cell)

No.820-1/2003-LR (Vol.I)   Dated 10/09/2003

To
U/s. Dishnet DSL Ltd.

Sub: Direction to block internet Website"Groups.yahoo.com/groups/kynhu"

Undersigned is directed to convey the approval of competent authority to 2003.09.08 block the website 'Groups.yahoo.com/groups/kynhun' and therefore, you are accordingly directed to block the said website immediately.

2.   Compliance of this direction may be reported by return fax immediately.

(Jayant Kumar)
Director (LR-II)
Tel. No.011-23372601
Fax No.011-23359454/23739436

Accountability

- Most countries that filter are unable to publicly answer the following questions:
  - What are the blocking criteria?
  - Is there a review process?
  - What is the policy on collateral blocking?
  - Is there a grievance mechanism?
  - How can designations be changed if there is miscategorization?
  - How are Internet users informed that they are attempting to access prohibited content?
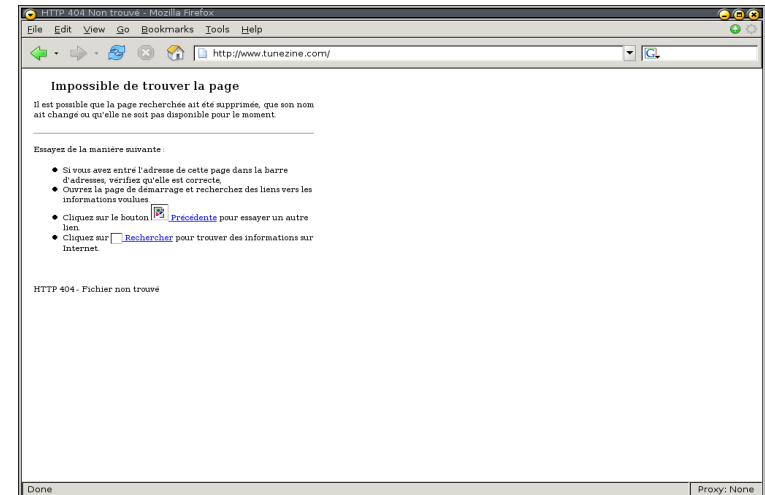
Accessing Filtered Content

Conspicuous

- Block Pages: Indicate that the site is intentionally blocked
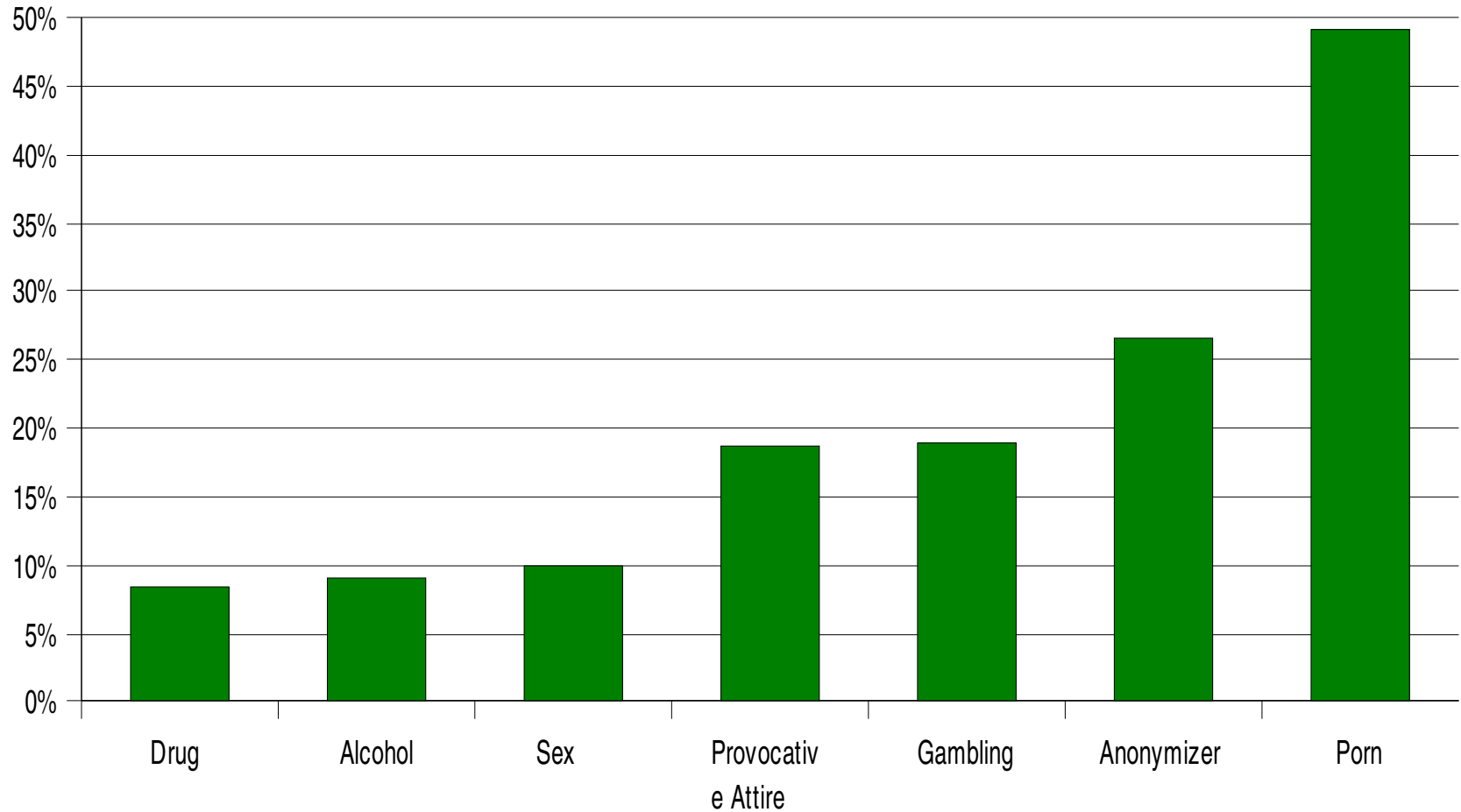- Often combined with block/unblock forms & contact information

Inconspicuous

- Generic timeout, 404 & error pages
- Redirection (possibly to false, look-alike sites)

Targeted Content

From Filtering to Censorship

- Most countries that filter the Internet target content that is specific to the country itself and is in the local language.

- These websites generally include human rights organizations, independent media, oppositions groups or political parties, and religious conversion or spiritual groups.

- Sites that contain content opposed to or dissenting from the views of the current government are most often the targets of filtering.

- The control over information begins to move from filtering into overt political censorship.

Middle East & North Africa

>> **Tunisia**

Tunisia uses Smartfilter to block access to sites categorized as Sex, Nudity, and Anonymizers. They extend this list to also block access to political parties, NGOs and websites that provide alternative information on Tunisia.

>> **Blocked**

- http://www.tunezine.com
- http://www.cprtunisie.com
- http://www.albadil.org

>> **Iran**

Iran uses commercial filtering technology to block access to websites categorized as Pornography and Anonomizers. Iran has added numerous sites blocked for political reasons, including blogs, political parties, news outlets and websites supporting the monarchy.

>> **Blocked**

- http://www.hoder.com
- http://www.iran-e-sabz.org
- http://www.montazeri.com

>> **Syria**

Syria blocks access to a limited amount of sites categorized as Pornography and Anonymizers. Syria primarily focuses on independent media, human rights groups, kurdish sites, and sites the urge demoractic reform in Syria.

>> **Blocked**

- http://www.thisissyria.net
- http://www.reformsyria.net
- http://www.amude.com

Filtering: Pervasive   Substantial   Nominal   No Blocking   No Data

Asia

Filtering:　Pervasive　Substantial　Nominal　No Blocking　No Data

Unintended Consequences

Often, those implementing filtering are unaware of the consequences that the mechanism of filtering can have. They most likely do not consider over blocking or consider it acceptable collateral damage.
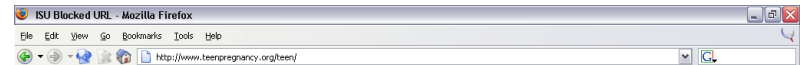
Collateral Filtering

- Commercial; filtering technology is used to target content such as pornography or gambling
- Overblocking
- Underblocking
- List Secrecy

Why Block by IP?

- Blocking by IP is effective (the target site is effectively blocked) and no new equipment needs to be purchased.

- Virtual hosting allows many thousands of individual web sites to be hosted on a single IP address.

- When an IP address is blocked, there is a significant chance that many unrelated websites will be blocked in the process.

Filtering's Impact

- Placing restriction on freedom of speech in a non-transparent way:
  - Ceding to commercial entities the responsibility of placing limitations on freedom of speech through tools that are sheltered from close public scrutiny because of intellectual property protections
  - Blocking access to content that was never intended to be blocked

Mission Creep

Regardless of the initial reason for implementing Internet filtering, there is increasing pressure to expand its use once the filtering infrastructure is in place.

A Technical "Quick Fix"

- Governments are tempted to use it as a tool of political censorship or as a technological "quick fix" to problems that stem from larger social and political issues.

- Some suggest that filtering may be a solution for cyberterrorism and the use of the Internet for coordination, data collection, and propaganda by terrorist organizations

Limited Effectiveness

- Countries may be able to filter casual or inadvertent access to websites but this will not significantly impact those determined to view this content

- National filtering is primarily restricted to web-sites (HTTP) and largely ignores other protocols

- The Internet does not exist in a media vacuum: if a website is blocked, news media are going to cover significant events

Circumvention

- There are numerous circumvention technologies available that allow users to access filtering content

- Although governments and commercial filtering manufacturers actively target public anonymity and circumvention sites they are unable to effectively counter distributed, private circumvention strategies

Anonymizer

Website

Firewall or filtering system denies access to the requested Website
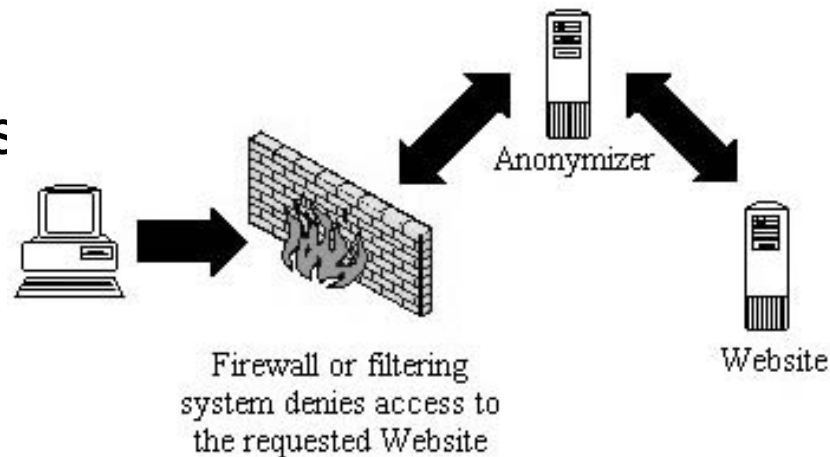
The Filtering Matrix

A matrix of control in which technological and non-technological measures intersect at different levels of access to enforce strict information control policies.

Self-Censorship

- Law & Regulations
- Industry self-regulation
- Localized filtering
- State-directed encouragement of filtering products
- Climate of self-censorship brought on by fear, arrests and intimidation

A search for 藏 (tibet) restricted to .gov websites in Chinese language Yahoo! produces results including voa.gov

A search for 藏 (tibet) restricted to .gov websites in Yahoo's China Portal produces results that do **not** include voa.gov
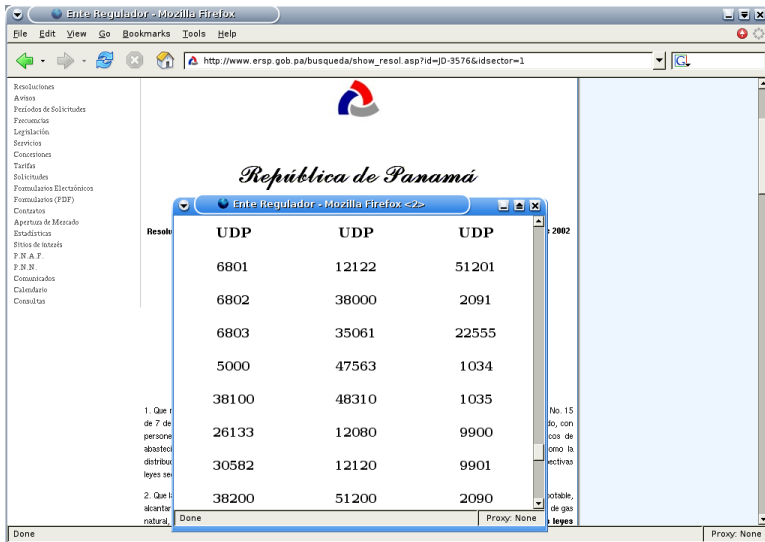
A search for 藏 (tibet) restricted to voa.gov websites in Chinese language Yahoo! produces results.

A search for 藏 (tibet) restricted to voa.gov websites Yahoo's China Portal does **not** produce results.

Blocking Internet Services

- **VOIP**
  - China is trying to block Skype
  - British Telecom blocks access to ports associated with VOIP
  - Vonage, has filed a complaint with the FCC about "an instance of portblocking... by a high-speed Internet provider."
- **Saudi Arabia blocks standard proxy server ports to counter possible circumvention**
- **Many ISP's block outbound connections on port 25 (smtp) to combat spam (Bell Sympatico)**

Geolocation Filtering

- Reverse filtering, content accessible or inaccessible by geographic location

- Internet users located in Iran are unable to download the Java JRE
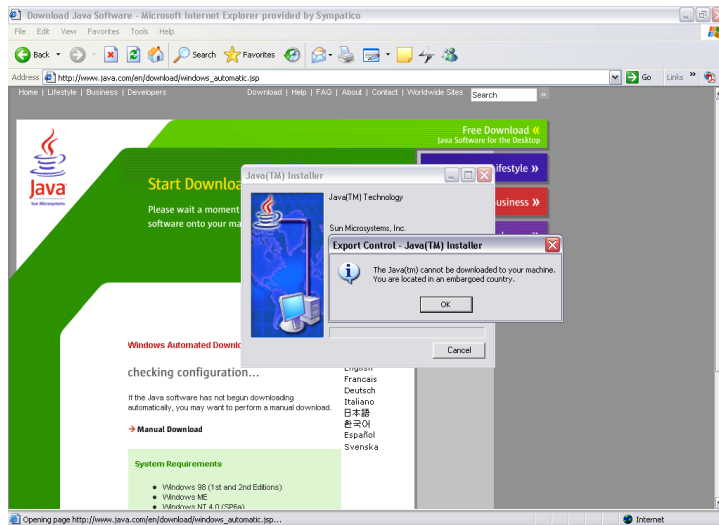- During the run-up to the US election georgewbush.com was blocked outside the USA (and Canada)
- China: Google News China removes news items from certain sites (that are blocked in China)
- Germany and France: Localized Google search result exclusions for Nazi/hate sites
- The Pentagon restricted international access to the Federal Voting Assistance Program (www.fvap.gov)
- NBC & BBC restricted access to Olympic footage based on geographic location
- GoDaddy Domain Registrar: restricts registrations from certain countries it deems a risk of credit card fraud

National Intranet

- National Intranets allow countries to conserve expensive international bandwidth by providing services (such as web hosting) and external content (caching or mirroring external content) to domestic users without having to route the users' requests through to external foreign servers

- Myanmar (Burma): launched in 2001 the "Myanmar Intranet" contains local content as well as approved foreign content (Some net access packages only allow access to the Intranet; cost is used as a mechanism of filtering).

- Cuba: Internet access is costly and restricted, locals use the Cuban Intranet which carries officially-approved websites

- Iran: reportedly developing a National Intranet known as Shaare'2 (or Shaareh II) which will locally provide various services

Blog Filtering

www.blogbus.com

*** ******|天 *****|天 *****|天 ****|蒙
***立|新 ***立|疆 ***立|藏 ***立|西 **|乱
**|六 **|反 **|四 **|四 **|暴 **|江 **|蒙 **民|江

www.blogcn.com

⚠ 对不起文章中包含敏感词语！

www.blogdriver.com

以下言论可能给我们带来伤
害，请不要发表，谢谢配合

freechina

- When users post blog entries the filtering mechanism checks to see if the post contains any banned keywords. If such a keyword is present the filtering mechanism is triggered.

- The kewords focus on topics such as: independence movements (Tibet, Taiwan), the Tiananmen Square incident in 1989, Chinese communist leaders such as Jiang Zemin, different names for Falun Gong, and sensitive words referring to uprisings or suppression.

Search Engine Filtering
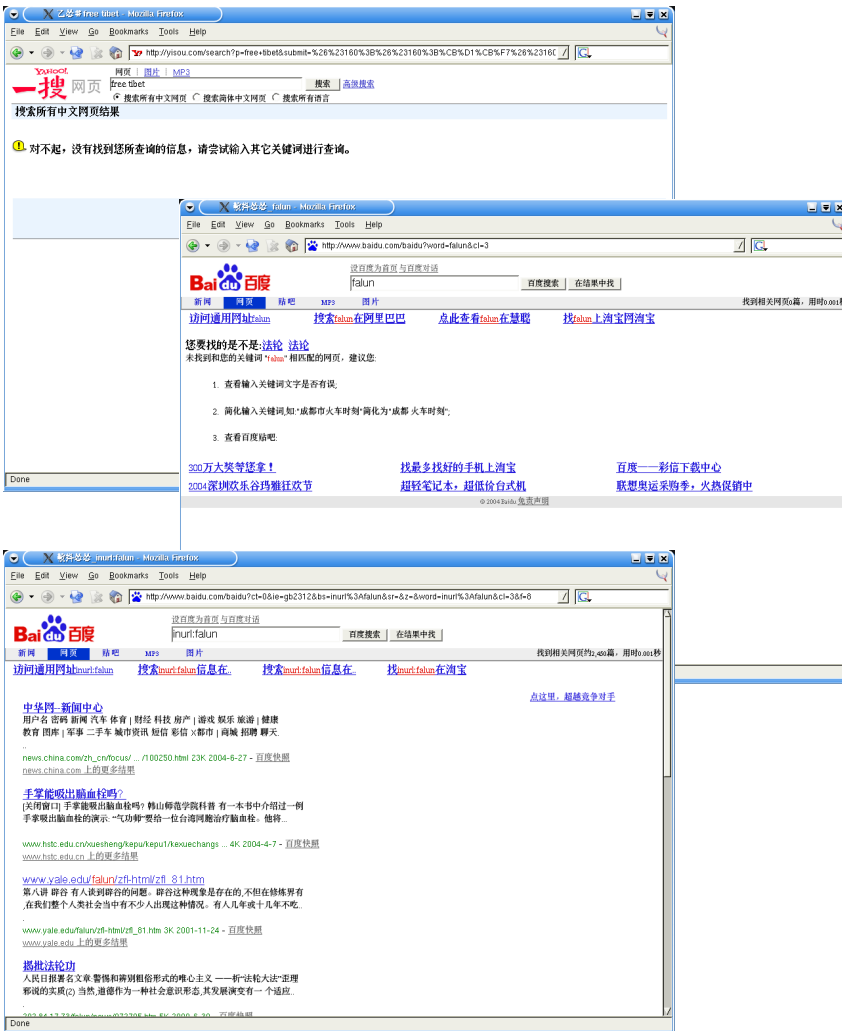
- Domestic search engines return no results for specific keywords & de-list indexed results
- In order to block the Google cache, China implements a filtering mechanism that disrupts access to any server if the text string '*search?q=cache*' exists in the URL path.
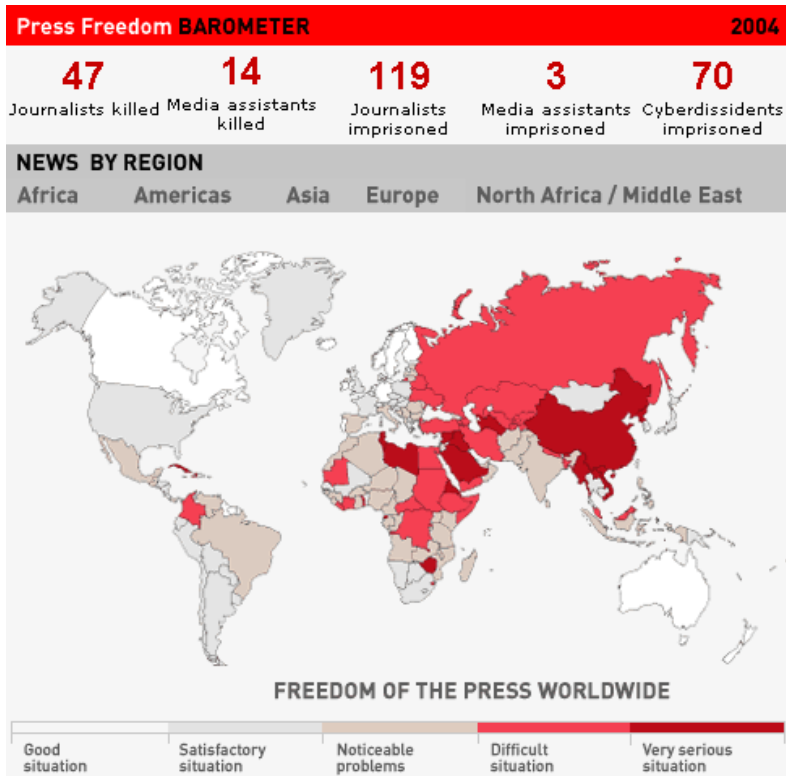
Forums & Chat

Date & time GMT	Message content	Website	Appeared yes/no	Time it remained
3 March at 12:00	Call for free elections	Sina.com.cn	Yes	14 minutes
4 March at 14:00	Lack of debate in China on war in Iraq	Iraq forum of Sina.com.cn	Yes	1 hr 40 mins
10 March at 14:00	Concern about Liu Di	Sina.com.cn	Yes	2 hrs 20 mins
11 March at 11:00	Free Huang Qi	Sina.com.cn	Yes	40 minutes
11 March at 15:00	Criticism of judicial system	BJYD (Beijing Youth Daily)	Yes	Not removed
12 March at 12:00	Problem of justice in China	Xinhuanet.com	Yes	Not removed
14 March at 13:00	Lift ban on a magazine	Sina.com.cn	Yes	Less than two minutes
17 March at 15:00	Jiang Zemin is still in control	Tom.com	Yes	37 minutes
17 March at 15:00	Jiang Zemin is still in control	Sina.com.cn	Yes	49 minutes
17 March at 17:00	Debate on war in Iraq	Sina.com.cn	Yes	9 minutes
18 March at 14:00	Web address of *Radio Free Asia*	Sina.com.cn	Yes	1 hour

- QQ: Chinese hackers have found that a file in a popular Chinese Instant messaging program contained a list of keywords in both Chinese and English that are filtered by the software

- Forum posts are routinely monitored and removed

Important Implications

Press Freedom BAROMETER — 2004

- 47 Journalists killed
- 14 Media assistants killed
- 119 Journalists imprisoned
- 3 Media assistants imprisoned
- 70 Cyberdissidents imprisoned

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FREEDOM OF THE PRESS WORLDWIDE

Good situation · Satisfactory situation · Noticeable problems · Difficult situation · Very serious situation

- Non-transparent filtering practices meld into forms of political censorship

- Internet filtering represents a significant threat to democratic practices

- Rise of gated/locked-down information society

Questions?

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Chat: irc.citizenlab.org #citizenlab