Internet Filtering in Singapore in 2004-2005: A Country Study

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1. Executive Summary

The Republic of Singapore is an economic leader in Southeast Asia, with a vibrant information and communications technologies sector; however, the state maintains strong formal and informal controls over the information to which its citizens have access.1 Singapore’s official position is that the state filters Internet content to promote social values and maintain national unity,2 with the goal of denying access to objectionable material, especially pornography and content encouraging ethnic or religious strife. The Media Development Authority (MDA) claims to block only a symbolic list of 100 Web sites (primarily pornography) as a symbol of the state’s disapproval of this content. In addition, the MDA encourages, and each of Singapore’s three primary Internet Service Providers offers, optional, filtered Internet access services that block additional sites for a minimal monthly fee.3

In our testing, the OpenNet Initiative (ONI)4 found extremely minimal filtering of Internet content in Singapore, as only eight sites of 1,632 tested (.49%) were blocked: www.cannabis.com, www.chick.com, www.formatureaudiencesonly.com, www.penthouse.com, www.persiankitty.com, www.playboy.com, www.playgirl.com, and www.sex.com. The limited blocking that our testing revealed focuses on a few pornographic URLs and one site each in the categories of illegal drugs and fanatical religion. Similar content is readily available at other sites on the Internet that are not blocked in Singapore. Thus, Singapore’s Internet content regulation depends primarily on access controls (such as requiring political sites to register for a license) and legal pressures (such as defamation lawsuits and the threat of imprisonment) to prevent people from posting objectionable content rather than technological methods to block it. Compared to other countries that implement mandatory filtering regimes that ONI has studied closely, Singapore’s technical filtering system is one of the most limited.

1 See U.S. Department of State, Background Note: Singapore (August 2004), at http://www.state.gov/r/esa/bgn/2798.htm.
4 The OpenNet Initiative wishes to thank the Singapore Internet Research Centre at the School of Communication and Information, Nanyang Technological University, and in particular Professors Randolph Kluver and Ang Peng Hwa, and Research Associate Shahiraa Sahul Hameed, for their assistance in the preparation of this study. ONI also thanks a reviewer from Singapore who prefers to remain anonymous.
2. Political, Technical, and Legal Context in Singapore

A. Sensitive / Controversial Topics for Media Coverage

Singapore restricts media coverage of topics both formally and informally. According to a recent censorship review by a government-appointed committee, access should be denied to content that “undermines public order and the nation’s security, denigrates race and religion, or erodes moral values.” In evaluating moral values, the committee defined as “clearly immoral and demeaning” content that includes “pornography, deviant sexual practices, sexual violence, child pornography, [and] bestiality.” It noted, though, a range of opinion in Singapore on “violence, nudity and homosexuality,” recommending in particular that the ban on homosexual content be eased. (This may be because Singapore has become a hub for gay culture in Asia.)

B. Internet Infrastructure and Access

Singapore has achieved tremendous Internet penetration. In 2002, 61% of the population of Singapore had access to the Internet from home, work, or cybercafés. Three firms provide Internet access for most of the state’s 2.31 million subscribers: StarHub, SingTel’s SingNet, and Pacific Internet.

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8 Ministry of Information, Communications and the Arts, Censorship Review Committee: Report of 2003 32 (proposing “greater leeway to non-exploitative theme or scenes for adults through suitable channels”).
11 Strange, Opposition: Singapore Democracy “a Myth,”; see also Michael Dwyer, Singapore’s accidental exiles leave a damming vacuum, South China Morning Post, Sept. 2, 2004, at 16.
While all three Internet Service Providers are public entities, the government was the majority shareholder in each as of April 2001. Whether a viable independent Internet access provider is possible in Singapore remains in question.

C. General Media Regulation

Singapore lacks a free and independent press. According to one group of observers at the University of Hong Kong, the Singapore media is used as a “semi-official bridge between the government and the public.” The University of Hong Kong report found overwhelming evidence that the state owns an equity stake in the press and broadcast conglomerates it supports. Singapore fiercely criticized a report by Reporters Sans Frontièrès, which ranked the state at 147th in its annual Worldwide Press Freedom Index — by far the lowest ranking of any wealthy, developed nation. The committee chartered with reviewing Singapore’s censorship laws urged the state to reduce censorship in June 2003, and the state has accepted the committee’s recommendations. Formal action to control content is frequent; Singapore recently imposed sanctions on a radio station for broadcasting sexual content and on a print journalist for reporting on a foreign trip by the former prime minister’s wife for medical treatment.

Media ownership is carefully monitored by the government, which exerts influence over content through investment and informal ties. Singapore Press Holdings (SPH), a company with close ties to the ruling People’s Action Party (PAP), controls all of Singapore’s daily newspapers. The Media Corporation of Singapore (Mediacorp), which is owned by a state investment agency and controlled by PAP

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19 Chu Yee-ling & Wong Man-yee, Asia Media Project – Singapore; see also International Telecommunication Union, Effective Regulation Case Study: Singapore 2001 7, at http://www.itu.int/itu-d/publicat/sgp_c_st.html (providing a diagram of governmental control of the Singaporean telecom industry).


supporters, dominates the broadcasting media. Mediacorp and SPH merged partially in late 2004, reducing greatly media competition in newspapers and television.

Formally, the Media Development Authority (MDA), which was created on Jan. 1, 2003 (formerly the Singapore Broadcasting Authority), is the agency responsible for media regulation. The MDA’s primary authority derives from the Media Development Authority of Singapore Act that established it; however, other laws, notably those relating to pornography and election material, have been applied to the Internet and users. Overall, the state influences newspaper editorial decisions through its links to the SPH, and television programming is controlled and censored by the MDA. An important, informal means of media control in Singapore is the use of lawsuits under the state’s stringent defamation laws. Defamation suits in Singapore are a common tactic for controlling speech, especially that related to Singapore’s government and politics; defendants who lose such suits often face hundreds of thousands of dollars in liability. There have been repeated allegations that judges in political defamation cases are linked to – and favor – government officials. Self-censorship by the media is common since the standard of proof in a defamation suit is easily met -- the burden rests upon the defendant to prove the truth of the statements (absent a claim of privilege, which is quite limited in scope) by substantial evidence, without the benefit of a jury trial. Thus, “The law of defamation presumes that defamatory words are false and the plaintiff need do no more than prove that the defamatory words have been published by the defendant. The burden is then on the defendant, if he

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30 See, e.g., Courts take aim at dissidents, Courier Mail (Queensland, Australia); Amnesty International, Singapore: Defamation suits threaten Chee Soon Juan and erode freedom of expression, Nov. 2, 2001, at http://web.amnesty.org/library/Index/ENGASA360102001?open&of=ENG-SGP; Lee Kuan Yew v. Chee Soon Juan (No 2) [2005] 5 SLR 552 (awarding Yew, former Senior Minister of Singapore, $200,000 in a defamation suit against Juan, Secretary-General of the Singapore Democratic Party).
31 See, e.g., Carolyn Hong, Vindicating Dented Reputations, New Straits Times (Malaysia), Nov. 26, 2000, at 9 (noting that Singapore’s defamation trials do not involve juries).
wishes to rely on the defence of justification, to prove that those words are true.” The United States Department of State has condemned the scope and effect of Singapore’s defamation laws, stating that “government pressure to conform resulted in the practice of self censorship… [laws]uits, which have consistently been decided in favor of government plaintiffs, chilled political speech and action and created a perception that the ruling party used the judicial system for political purposes.”

A recent example that demonstrates the reach of these laws, and their effects on Internet communication, targeted a blogger studying at the University of Illinois. Jiahoa Chen, a Singapore citizen, was forced to shut down his blog “caustic.soda” (hosted on the university’s server) under threat of a defamation lawsuit from A*STAR (Agency for Science, Technology, and Research), a state-funded agency that provides scholarships to Singaporeans studying abroad in return for a commitment to public service after graduation. Chen broke his contractual agreement with A*STAR and had to repay his scholarship to the agency. Subsequently, he criticized A*STAR in an interview with Singapore’s The Electric New Paper and also on his blog. Chen stated that A*STAR treats its students “merely [as] a human resource” and that the agency’s recently instituted 3.8 grade point average requirement for maintaining scholarship funding was “unnecessarily draconian and counterproductive.” Shortly thereafter, A*STAR chairman Philip Yeo sent a series of e-mail messages to Chen threatening legal action and demanding the immediate removal of the blog. Under the threat of a defamation suit, Chen closed his blog, issuing a statement that “the price of maintaining the content that used to be available at this URL has become too high for the author to afford.” Following continued pressure from Yeo and A*STAR, Chen later posted a more explicit apology that reads, “I admit and acknowledge that these statements are false and completely without any foundation. I unreservedly apologize to A*STAR, its Chairman Mr. Philip Yeo, and its executive officers for the distress and embarrassment caused to them by these statements.” Chen’s case reinforces the power of Singapore’s defamation laws to alter Internet content and has led other Singaporean bloggers to write more cautiously.

34 Chen’s blog, caustic.soda, is currently available at http://www.scs.uiuc.edu/~chen6/blog/. A screen shot of the blog as it appeared on the first day it was shut down is available at http://photos8.flickr.com/11195062_6e3edac422.jpg.
38 See Why Bond Breakers Left, Electronic New Paper..
40 See the screen shot of caustic.soda available at http://photos8.flickr.com/11195062_6e3edac422.jpg.
D. Internet Access Regulation

The Singapore Broadcasting Act requires Internet access service providers (IASPs), political parties, Internet service resellers (ISRs), Internet Content Providers (ICPs), and entities with Web sites related to political or religious topics to register with the MDA under a class license scheme. Under the law, both service and content providers are required to comply with the Internet Code of Practice, which "outlines what the community regards as offensive or harmful to Singapore's racial and religious harmony." Political parties, religious groups, or individuals discussing these topics on their Web sites must "provide the [MDA] with such particulars and undertakings as the Authority may require." ISPs (comprising ISRs and IASPs) must conform to terms of the Class License that mandate enforcing compliance with the MDA's Internet Code of Practice. In addition, the license requires that all sites providing material about or hosting discussions regarding political or religious topics register with the MDA and conform to MDA requests regarding that content. Thus, Singapore has erected barriers to creating Internet content that augment its regulations for content itself.
E. Internet Content Regulation

Singapore has regulated Internet content since 1996. The state claims to use a “light-touch” approach to regulation. The primary legal instrument establishing control over access to Internet content is the Broadcasting Act. Under the Act, the MDA has authority to require the blocking of specific external sites or domains and to mandate the removal or moderation of “objectionable” content hosted by service or content providers by issuing a Code of Practice. The MDA’s Internet Code of Practice defines prohibited content, which ISPs must block, as that which depicts nudity in a titillating fashion; promotes sexual violence; shows people engaged in explicit sexual activity; advocates homosexuality or lesbianism; shows sexual activity by a person who is or appears to be less than 16 years old; depicts incest, bestiality, pedophilia, or necrophilia; depicts extreme violence or cruelty; or “glorifies, incites or endorses ethnic, racial or religious hatred, strife or intolerance.” In practice, the MDA claims to have established a “symbolic” list of 100 sites that are officially blocked; persons attempting to view any site on this list will be informed that the site in question is blocked. The MDA states these sites are primarily well-known pornographic domains. As discussed below, ONI’s testing calls this statement into question; we found only eight sites filtered at any point in our testing, including one illegal drugs site and one site devoted to Christian evangelism.

The MDA can issue penalties for violations, including fines or a license suspension or termination for non-compliance. Corporate Internet access is exempt from the requirement to block these 100 sites prohibited under the MDA Class License. The MDA has encouraged ISPs to develop and offer Family Access Networks that filter out pornographic and other objectionable Web sites for an additional fee; fees for this service were roughly $3 Singapore per month in July 2005. The government has encouraged the development of a ratings system and filtering software but has not yet publicly announced the adoption or endorsement of any such system or software.

In addition to explicit attempts to block pornography, hate speech, and similar content, the MDA’s predecessor (the Singapore Broadcasting Authority, or SBA) was accused by members of the political opposition of using its authority to disrupt the PAP’s political opponents and to suppress dissent. For example, during the 2001 parliamentary elections, the SBA was accused of selectively

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52 Media Development Authority, Internet.
53 Media Development Authority, Internet Code of Practice.
54 Personal communication with the authors.
55 Personal communication with the authors; see generally Media Development Authority, Myths and Facts about the MDA and the Internet.
56 Personal communication with the authors.
57 Personal communication with the authors; see Media Development Authority, Internet - Family Access Network.
58 See Media Development Authority, Internet.
59 See James Gomez, Politics on the Internet, Oct. 19, 2001, at http://www.jamesgomeznews.com/article.php?AID=81; but see Media Development Authority, Myths and Facts About the MDA and the Internet (denying that the MDA takes such action).
applying electoral laws to registered opposition Web sites. The SBA was also criticized for its treatment of fateha.com, a Muslim site that protested the ban on Muslim students wearing head scarves. In addition, the Computer Misuse Act and e-commerce legislation adopted in 1998 give Singapore’s police wide powers to seize and search computers without a warrant and to decrypt online messages.

The Internet Code of Practice does not provide for any restrictions or penalties imposed on users; however, violation of other laws, such as those banning possession of pornography, may subject an Internet user to criminal penalties. In addition, the government has been accused of manufacturing charges against political dissidents and of monitoring the Internet use of suspected dissidents; the Computer Misuse Act and similar legislation have greatly increased the government’s authority to monitor and decrypt Internet content. Even if few such charges are filed, the threat thereof may serve to deter political opposition in Singapore.

In addition to filtering that occurs under the mandates of the MDA, other providers of Internet access (such as universities) implement blocking of sites as well. Like the MDA, these providers generally do not reveal which sites are blocked or the precise rationale for filtering the sites to which access is prevented.

3. TESTING METHODOLOGY

A. Methods

ONI performs technical testing across multiple levels of access at multiple time intervals. The team analyzes results within the contextual framework of the target state’s filtering technology and regulations. To obtain meaningful, accurate results we:

- generate lists of domain names and URLs that have been or are likely to be blocked;
- enumerate ISPs and national routing topography;
- determine the type, location, and behavior of the filtering technology;
- deploy network interrogation and enumeration software at multiple access points; and
- conduct a thorough statistical analysis of results.

See, e.g., Committee to Protect Journalists, Asia 2001: Singapore, at http://www.cpj.org/attacks01/asia01/singapore.html.


Personal communication with the authors.
Determining which URLs to test is a vital component of our research, as it reveals the filtering system’s technical capacity and content areas subject to blocking. ONI employs three types of lists:

- a list of “high impact” sites reported to be blocked or likely to be blocked in the state of concern due to their content (for example, political opposition);
- a “global list” containing a control list of manually categorized Web sites reflecting a range of Internet content (for example, news and hacking sites); and
- a list of sites with material related to separatist, military, paramilitary, intelligence, and political organizations.

To explore Internet filtering, we deploy network interrogation devices and applications, which perform the censorship enumeration, at various Internet access levels. These tools download the ONI testing lists and check whether specific URLs and domains are accessible from that point on the network. Interrogation devices are designed to run inside a state (i.e., behind its firewall) to perform specific, sensitive functions with varying degrees of stealth. Similarly, ONI distributes interrogation applications to trusted volunteers who run the software inside the state. For testing, ONI obtains network access at multiple levels through:

- Proxy servers,
- Long distance dial-up,
- Distributed applications, and
- Dedicated servers.

During initial testing, we use remote computers located in countries that filter. These remote computers are located behind the state’s firewalls yet allow access to clients connecting from the wider Internet. We attempt to access the URL and domain name lists through these computers to reveal what content is filtered, and how consistently it is blocked. ONI also tests these lists from control locations in non-filtered states. The testing system flags all URLs and domains that are accessible from the control location, but inaccessible from ones inside the target state, as potentially blocked.

B. Results Analysis

We carefully analyze the data obtained from testing to document the nature of filtered content, to explore the technical capabilities of the target state, and to determine areas that require in-depth study during internal testing. In particular, ONI examines the response received over HTTP when attempting to access filtered content. As discussed, when content is filtered, users often receive a “block page” – a Web page with text indicating that the requested content cannot be accessed. In other cases, filtering can be less obvious or transparent, appearing to be network errors, redirections, or lengthy timeouts rather than deliberate blocking. We analyze HTTP headers – text sent from the Web server to the browser – to derive information about both the server and the requested page. This information is generally hidden from the end user. However, these headers indicate whether content was successfully accessed or was inaccessible.

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If an error occurs, the HTTP protocol returns codes that indicate the type of error in the header. Thus, by analyzing the headers captured during testing, we can distinguish between errors caused by Internet filtering and more mundane, unintentional network connection errors.

We classify results in one of four categories:

- URL is accessible both through the local connection and the remote computer (not filtered);
- URL is accessible through the local connection but inaccessible through the remote computer, which returned a different HTTP response code (possibly filtered);
- URL is accessible through the local connection but inaccessible through the remote computer due to a network connection error (possibly filtered, but not definitive); or
- URL is accessible through the local connection but inaccessible through the remote computer; the remote computer returns a block page (filtered).

If a URL is inaccessible through both the local connection and the remote computer, we consider it “dead” and remove it from the results.

The ONI team analyzes blocked, unblocked, and uncertain URLs both at an aggregate level (to estimate the overall level of filtering) and at a category level (to indicate what types of content the state seeks to control). We publish country studies that provide background on a state’s political and legal system, lists of tested sites, and analysis of results to reveal and analyze what information a state blocks and how it does so. We note, however, that our results and analysis capture a “snapshot” of a state’s filtering system for a specific point or period of time; governments can and do alter the content they block dynamically.

C. Methods Specific to Singapore

To evaluate Singapore’s filtering, we tested four lists (the global list, a high-impact list designed for Singapore, a list focused on separatist and paramilitary organizations, and a sub-set of the global and high impact lists targeting sites most likely to be filtered) from access points on four network providers (Pacific, QALA, SingNet, and StarHub) and one major Singapore university over a seven-month period. We used two forms of network access: direct in-state testing on broadband connections by trusted volunteers and remote access to proxy servers.

For direct testing, we had volunteers in Singapore run a series of tests from within the state. These tests used the software application developed by ONI to examine filtering. The volunteers ran two tests of the global list (one test each on StarHub and SingNet broadband connections), one test of the high-impact list (on StarHub), and three tests of a sub-set of the high-impact and global lists (one test each on StarHub, SingNet, and at a major Singapore university). This testing of the sub-set checked 14 URLs, including each URL that our proxy server testing reported as filtered.

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66 QALA is a Singapore ISP; we believe that QALA re-sells Internet access from one of the three primary ISPs in Singapore (Pacific, SingNet, and Starhub). See QALA, About QALA, at http://www.qala.com.sg/main_aboutus.htm.

67 ONI extends its sincere appreciation and gratitude to these volunteers, who remain anonymous as a safety precaution.
For remote testing, we tested nine proxy servers from seven organizations that connect to four network providers (Pacific, QALA, SingNet, and StarHub). Results from these proxy servers varied greatly from one to the next. The Pacific server, the QALA server, one SingNet server, and two StarHub servers did not filter any Web sites. Two Starhub servers and one SingNet server did filter sites. The Starhub servers redirected us to a block page when we attempted to access a filtered site. The SingNet server uses the SurfControl filtering software to limit access to Web content.

ONI did not test the optional, “family access” services that filter Internet content more heavily that are offered by Singapore’s three main ISPs. Users in Singapore can decide whether to use these filtered services; ONI’s primary research goal is to analyze and describe state-mandated filtering regimes.

D. Topics Tested

ONI tested topics to which the Singapore government has demonstrated sensitivity. These include pornographic content, gay / lesbian / bisexual materials, dissident and political opposition sites, commentary and news pages, religious and evangelical content, illegal drugs sites, non-governmental organizations, ethnicity pages, and sites that could be mistaken for pornography.

4. RESULTS AND ANALYSIS

A. Summary

Singapore’s Internet filtering is minimal. ONI found only eight sites blocked during any of our testing, six of which were pornographic (www.formatureaudiencesonly.com, www.penthouse.com, www.persiankitty.com, www.playboy.com, www.playgirl.com, www.sex.com), one of which was a site devoted to Christian evangelism that preaches against “false religions” (www.chick.com), and one of which related to marijuana use (www.cannabis.com). Even these eight sites were not blocked consistently across all ISPs. Six sites were blocked in at least one-third of our tests: four sites (www.penthouse.com, www.persiankitty.com, www.playboy.com, and www.sex.com) were blocked in at least 60% of our tests; www.cannabis.com was blocked in almost 40% of our tests; and www.playgirl.com was blocked in roughly 35% of our tests. This variation is not unexpected when ISPs are responsible for implementing filtering;

68 QALA is a Singapore ISP; we believe that QALA re-sells Internet access from one of the three primary ISPs in Singapore (Pacific, SingNet, and Starhub). See QALA, About QALA, at http://www.qala.com.sg/main_aboutus.htm.

69 See Figure 1 in Appendix 3 for a copy of the Starhub block page.


72 This site states in its Frequently Asked Questions that “The world contains numerous religions, each teaching a different god. These gods are not the same, and therefore cannot all be the Creator. True Christianity is based upon the Bible, the historically verifiable record of what God did in history... We are unwilling to lie to [people of other religions] and say that all gods are real, when we know this is not true.” FAQ’s concerning Chick Publications, at http://www.chick.com/information/general/chickinfo.asp (last visited July 13, 2005).
different providers implement filtering with different levels of success and rigor. ONI believes that these six sites constitute the “hard center” of filtering in Singapore; other sites are blocked intermittently or less uniformly by different ISPs. Thus, ONI’s testing demonstrates that the state focuses its efforts on a small list of sites related to pornography and illegal drugs; similar content is readily available from other URLs in Singapore. These results comport with the state’s claims to filter only a symbolic set of sites as a demonstration of Singapore’s disapproval of this type of material.

B. Global List Results

Our global list analysis includes testing 753 sites in 31 categories. We tested this list once through proxy servers and twice from inside Singapore (on two different ISPs). We found partial blocking of seven different sites (9% of sites tested) in the categories of drugs (one site; www.cannabis.com), pornography (five sites; www.formatureaudiencesonly.com, www.penthouse.com, www.persiankitty.com, www.playboy.com, www.sex.com), and fanatical religion (one site; www.chick.com). This limited blocking demonstrates that Singapore is concerned only with a few types of content. The state does not attempt to prevent access to all sites with this material, since similar sites (for example, www.hustler.com and www.weedtalk.com) are readily accessible.

C. Singapore-Specific Results

To investigate Internet filtering on topics sensitive to Singapore, we tested two lists: a short, high-impact list, and a longer list of sites related to separatist, paramilitary, military, intelligence, and political organizations. Our high-impact testing found only two pornographic sites blocked, and our testing of the separatist / paramilitary list did not detect any filtering or blocking of these sites.

1. High-Impact List

From our high-impact testing, we conclude that Singapore focuses its attention primarily on pornography. Of the 170 sites we tested, only two (1.2%) were blocked on any of the Singapore servers or ISP connections: www.playboy.com and www.playgirl.com. Our testing did not uncover blocking of any other content, including that related to politics (such as political opposition or dissident sites), religion (evangelical and non-evangelical), gay and lesbian issues, Internet censorship circumvention, ethnicity, commentary and news, or non-governmental organizations. Singapore’s pornographic filtering is limited; it does not attempt to block pornography generally, and does not affect sites that are commonly filtered by mistake when a state tries to prevent access to porn.

73 See Appendix 1 for categorized results of the global list testing. To provide comparable results across multiple country studies, the majority of the sites in our global list have content only in English.

74 A partial block is one where the URL was blocked on some, but not all, of the servers or Internet connections we tested on that network. As described in Section III.C, we found inconsistent blocking on Singapore’s proxy servers.

2. SPMIPO List

We tested a list of 711 sites with material related to separatist, military, paramilitary, intelligence, and political organizations (SPMIPO). We did not find any of these sites blocked in Singapore.

5. Conclusion

Singapore’s state-mandated filtering of Internet sites is quite limited. Our testing found only six pornographic sites, one illegal drugs site, and one fanatical religion site blocked, and each of these sites could be reached in at least some of our tests. Only six sites were blocked in more than one-third of our tests, including five pornographic sites. We believe that these six sites are those most likely targeted for deliberate blocking by Singapore. Moreover, similar content is readily available at other, unblocked sites. Thus, the state’s technological Internet censorship is minimal, reflecting the MDA’s professed symbolic commitment to preventing access to this type of material.

However, ONI’s legal and background research demonstrates that Singapore uses other, non-technological measures to prevent online posting of and access to certain material, particularly that related to political groups other than the People’s Action Party and to religious and ethnic conflict. The threats of extremely high fines or even criminal prosecution as a result of defamation lawsuits, imprisonment without judicial approval under the Internal Security Act, and police monitoring of computer use may deter users in Singapore from creating or obtaining access to potentially objectionable material. Thus, Singapore’s filtering regime for political, religious, and ethnic material is primarily low-tech, yet nonetheless potentially effective.


## APPENDIX 1
Global List Testing Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Sites Tested</th>
<th>Number of Sites Blocked in Proxy Testing</th>
<th>Number of Sites Blocked in In-Country Testing</th>
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<tr>
<td>Alcohol</td>
<td>22</td>
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<td>Anonymizers</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Blogging Domains</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drugs</td>
<td>28</td>
<td>1 partial (<a href="http://www.cannabis.com">www.cannabis.com</a>)</td>
<td>0</td>
</tr>
<tr>
<td>E-mail</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
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<td>Encryption</td>
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<td>Famous Bloggers</td>
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<td>0</td>
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<td>Gay / Lesbian / Bisexual / Transgender / Queer Issues</td>
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<td>Government</td>
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</tr>
<tr>
<td>Groups (including Usenet)</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hacking</td>
<td>21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hate Speech</td>
<td>25</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Human Rights</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Humor</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Major Events</td>
<td>29</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>News Outlets</td>
<td>35</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Porn</td>
<td>36</td>
<td>4 partial (<a href="http://www.penthouse.com">www.penthouse.com</a>,</td>
<td>3 complete (<a href="http://www.penthouse.com">www.penthouse.com</a>,</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.persiankitty.com">www.persiankitty.com</a>,</td>
<td><a href="http://www.persiankitty.com">www.persiankitty.com</a>,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(<a href="http://www.formatureaudiencesonly.com">www.formatureaudiencesonly.com</a>,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.sex.com">www.sex.com</a>)</td>
</tr>
<tr>
<td>Provocative Attire</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Religion (fanatical)</td>
<td>9</td>
<td>0</td>
<td>1 (<a href="http://www.chick.com">www.chick.com</a>)</td>
</tr>
<tr>
<td>Religion (normal)</td>
<td>52</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Internet Filtering in Singapore in 2004-2005

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Partial</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Engines</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sex Education</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Translation Sites</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Universities</td>
<td>32</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Weapons / Violence</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Women's Rights</td>
<td>27</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>753</td>
<td>5 partial (.66%)</td>
<td>4 complete (.53%), 2 partial (.26%)</td>
</tr>
</tbody>
</table>
### APPENDIX 2

**High-Impact List Testing Results (Proxy and In-Country)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Sites Tested</th>
<th>Number of Sites Blocked</th>
<th>Sites Blocked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blogs</td>
<td>7</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Dissidents</td>
<td>33</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Homosexuality</td>
<td>21</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Human Rights Organizations</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>General Commentary</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>General Content</td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>General Religion</td>
<td>12</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>International News</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Internet Censorship</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Non-Governmental Organizations</td>
<td>9</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Political Opposition</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Pornography</td>
<td>13</td>
<td>2 partial</td>
<td><a href="http://www.playboy.com">www.playboy.com</a>, <a href="http://www.playgirl.com%5E%7B80%7D">www.playgirl.com^{80}</a></td>
</tr>
<tr>
<td>Pornography Overblocking</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Religious Conflicts</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Religious Evangelism</td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Satirical Commentary</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sexual Content</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Singapore Factual Information</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Singapore General Content</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Singapore Specific Commentary</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>170</strong></td>
<td><strong>2 partial</strong></td>
<td><strong>(1.2%)</strong></td>
</tr>
</tbody>
</table>

^{80} www.playboy.com was generally blocked in both proxy and in-country tests, but www.playgirl.com was generally available during our in-country tests.
**APPENDIX 3**

*Copies of Block Pages from Singapore’s Filtering System*
Figure 1 - StarHub Block Page

Access Denied

The site you requested is not available. For more info on Singapore Internet regulation, please check on SBA website at:

A. General Description

The Republic of Singapore is a group of islands located off the coast of Malaysia, just north of Indonesia, in Southeast Asia. It is one of the world’s most densely populated states, with 4.5 million citizens (as of July 2004) comprised of people of Chinese (77%), Malay (14%), Indian (8%), and other (1%) backgrounds. Generally, the Chinese tend to practice Buddhism and the Malays Islam; Christians, Hindus, Sikhs, Taoists, and Confucianists make up the remainder of major religious groups. This plurality of ethnicity and religion is reflected in the languages spoken: Malay is the national language, but Mandarin, Tamil, and English are also designated as official languages. English is the language used for education, business, and government. Literacy is high, and the infant mortality rate is lower than in the United States.\(^{81}\) Singapore is one of the wealthiest countries in Asia, second only to Japan in per-capita income. The state has a strong free-market economy, with electronics and manufacturing as key industries.\(^{82}\) Although the global recession of 2001-2003 hurt the state’s electronics- and export-dependent economy, unemployment remains low, prices are stable, and investment is high in Singapore’s relatively corruption-free business environment.\(^{83}\)

Modern Singapore history began in 1819, when the British East India Company arrived. The British bought the island in 1824, and Singapore was incorporated into the Straits Settlement. During the 1800s, Singapore developed into an important trading hub, attracting workers from nearby Malaysia and China. In the 1920s and 1930s, the British built a number of naval and air bases on the island, only to have them overrun by Japanese forces in February 1942. The British recaptured Singapore in September 1945, and the island became a Crown Colony the next year. The state attained self-governance in 1959, after nearly a decade of negotiations with the British (who would continue to control on the island’s internal affairs, security, and foreign policy).\(^{84}\) In 1963, Singapore entered with Malaya, Sabah, and Sarawak to form the Federation of Malaysia. This short-lived union deteriorated in 1965 when Singapore seceded due to political and ethnic hostilities, forming an independent republic. As a result, relations with Malaysia remained tense through the 1970s. Since the 1970s, Singapore has experienced remarkable growth, and in recent years the government has made clear its ambition to establish Singapore as the high-tech capital of Southeast Asia.\(^{85}\)

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B. Political System

In principle, Singapore has a parliamentary system of government; authority rests in the prime minister and elected members of Parliament. In practice, the People’s Action Party (PAP) has dominated Singapore since the state achieved independence and has often been accused of using authoritarian methods to maintain its position and suppress political opposition. In Singapore’s first general election, the People’s Action Party won a supermajority of seats in the Legislative Assembly, and a PAP candidate, Lee Kuan Yew, became prime minister. This marked the beginning of a period of one-party rule, and it was not until 1990 that Lee resigned (and did so only to transfer power to a PAP successor). The PAP currently holds 81 of the 83 seats in Parliament, with the other two seats held by the socialist Worker’s Party and the liberal Singapore People’s Party.\textsuperscript{86}

Though Singapore has achieved impressive economic growth, the PAP has faced international criticism for its suppression of political opposition, its enforcement of an unusually harsh penal code (including the death penalty and caning as punishments), and its heavy-handed management of the economy.\textsuperscript{87} PAP candidates continue to enjoy the support of the electorate, but often run unopposed. The prominent opposition Web site Sintercom recently complained that “Singaporeans have become so regulated that they have lost their initiative, their ability to make their own decisions and the spirit to take risks.”\textsuperscript{88} Amnesty International reports that in 2004, “[f]reedom of expression continued to be curbed by restrictive legislation and by the threat of civil defamation suits against political opponents.”\textsuperscript{89} Religious freedoms are also curbed: Jehovah’s Witnesses and the Unification Church are banned in Singapore, and the state imposes restrictions on forms of expression which it deems a threat to ethno-religious harmony.\textsuperscript{90}

\textsuperscript{86} CIA, The World Factbook 2004 – Singapore.