

Internet Filtering in Sub-Saharan Africa



Introduction

Internet penetration in sub-Saharan Africa lags behind much of the rest of the world for a variety of economic, political, and infrastructural reasons. Despite these hurdles, most countries in the region view their future success as inextricably linked to harnessing the Internet's promise for economic development. Internet regulation in Africa, as a result, is primarily focused on infrastructure and access-related issues rather than on content regulation, though countries are making plans to broaden the scope of regulation as the Internet spreads.

Given the current restrictions on the freedoms of expression and the press in sub-Saharan Africa, one would expect similar restrictions on Internet freedom. In one way, this expectation is met: a number of countries in Africa have sought to limit the use of Voice-over Internet Protocol (VoIP) to protect incumbent telecommunications companies. However, ONI unearthed evidence of systematic blocking of Internet content in only one country, Ethiopia.¹ Uganda is also reported, by other sources, to have engaged

in one temporary incidence of filtration during the past year. Time will tell whether sub-Saharan countries choose to apply their restrictive laws and practices—targeted originally at traditional media—to the Internet realm as the Internet spreads.

Infrastructure and development

In sub-Saharan Africa Internet penetration rates are exceptionally low. West Africa generally has Internet penetration rates of around 1 percent or lower, with a pocket of countries (Benin, Nigeria, and Togo) maintaining higher Internet usage rates falling between 4 and 6 percent. Eastern and southern African penetration rates are slightly higher on the whole, between 1 and 4 percent. South Africa and Zimbabwe stand out with 11 and 8 percent, respectively.²

Various factors contribute to these low Internet penetration rates. Many areas in the region lack the basic infrastructure necessary to support the Internet. Only half of the homes in Botswana³ and as few as 10 percent in Tanzania⁴ have access to electricity.

The poorly developed state of Internet infrastructure is also a formidable problem. In West Africa, a high-capacity cable known as SAT-3 (South African Telecom-3) connects Europe to West Africa to South Africa to India. However, incumbent telecommunication companies, which are usually state owned, often have sole control over the branching unit from this cable to their country. As a result, they often charge exorbitant rates for connection via this cable, between US\$7,000 and US\$15,000 per Mb/s per month depending on the country.⁵ There is no equivalent high-bandwidth cable connecting East African countries to the Internet, though there are a number of plans to build one.⁶ As a result, many sub-Saharan African Internet service providers (ISPs) are highly reliant on expensive satellite Internet services (not lower than US\$1,800 to US\$2,000 per Mb/s per month)⁷, driving up the price and driving down the availability of Internet services for the people in the region.

Even if sub-Saharan countries were better connected to the rest of the world with more equitable pricing arrangements, it would be difficult and expensive in most cases for them to develop sufficient internal infrastructure to support widespread Internet development. Since populations are highly rural and spread out (in Rwanda, 94 percent of the population lives in rural areas;⁸ in Uganda, 85 percent),⁹ it is often a better investment for companies to build a cable into another country with more populous cities than to build further into the originating country.¹⁰ Moreover, the endemic poverty and economic degradation of the region makes any significant rural Internet development prohibitively expensive for many countries.¹¹ In Zimbabwe, for example, with inflation rates reaching nearly 1,600 percent, the government-owned TelOne has had difficulties paying its satellite provider bills to just maintain its *current* level of Internet access.¹² As a result, Internet usage remains low and concentrated in

urban areas; in Kenya, 80 percent of Internet users live in Nairobi.¹³

The recent privatization and liberalization of the telecommunications markets was promoted as a means to alleviate the infrastructure problems of Africa. Many countries have made this important step, including Botswana in 1996,¹⁴ Malawi in 1998,¹⁵ South Africa in 2002 (though there was no real competition until 2006)¹⁶, Senegal in 2003,¹⁷ and Kenya in 2004.¹⁸ Despite this liberalization, telecommunications companies that once held monopolies are still dominant,¹⁹ limiting the boost in Internet development expected from deregulation and competition in the Internet services markets.²⁰

In Uganda the spread of the Internet has been hampered by tariffs so high as to be prohibitive to the vast majority of the population. For monthly unlimited Internet access, the standard tariff is priced at US\$50, along with local phone charges for dial-in users that, for an hour of usage a day, could run from US\$31 to US\$93 a month (depending on whether the connection was used at peak or off-peak times).²¹ Even Internet usage in cybercafés costs around US\$6/hour.²² Compared to Uganda's annual GDP per capita of US\$525 in 2005,²³ the cost of Internet use is strikingly disproportionate to the disposal income of most of the population.²⁴

The lack of local content may also serve as a disincentive to Internet use. Although English is the official language of Uganda, for instance, very few of the country's inhabitants speak it as a first or even as a second language, although that number is growing.²⁵ Botswana's own telecommunications regulatory body, the Botswana Telecommunications Authority, has pointed out that "another factor hampering Internet uptake is the lack of indigenous local content."²⁶

Nevertheless, many countries actively promote the Internet through ICT policies as an element in their overall development plans. Rwanda, for example, has an ambitious, long-term "ICT-led socio-economic development plan" to trans-

form “Rwanda into a middle-income country by 2020.”²⁷ The plan covers everything from general infrastructure (such as improving electrical power quality), to Internet regulatory issues, and plans for social development (such as the Citizen’s Guide to Health Information Services).

Though other countries’ plans may not be as ambitious or far-sighted, most countries also have policies to spread Internet use. For example, Nigeria’s National Information Technology Development Agency has implemented programs such as the Mobile Internet Unit, the Rural Internet Resource Center,²⁸ and the Computers for All Nigerians Initiative.²⁹ In addition, at least thirteen sub-Saharan countries have made huge leaps in providing Internet services by launching Internet exchange points so that Internet traffic can travel easily within their borders.³⁰ Overall, governments are attempting to shake off these limitations to Internet development and create vibrant ICT systems throughout their countries. In many cases, they have been fairly successful, as Internet usage rates in the region grew by roughly 530 percent between 2000 and 2004.³¹

Legal framework: Freedom of expression and freedom of the press

Before examining the state of Internet content regulation in the region, it is important to understand how countries handle traditional media. Though countries do have protections for free expression and press in sub-Saharan Africa, these protections are often limited and, in a few cases, seem honored most in the breach thereof.

Freedom of expression and press freedoms are subject to constitutional protection in most African countries. “Everyone has the right to free expression, which includes freedom of the press and other media,” in South Africa.³² “Every person shall have the right to freedom of expression” and “the press shall have the right to report and publish freely, within Malawi and abroad, and to be accorded the fullest possible facilities for access to public information” in Malawi.³³ Explicit

constitutional exceptions to free speech are common as well, such as an exclusion for hate speech (South Africa),³⁴ for defamation (Ghana),³⁵ for anything that may impact the enjoyment of rights by others (Zimbabwe),³⁶ and broader topics such as public safety and welfare (Rwanda,³⁷ Kenya,³⁸ and Ghana³⁹).

Legislation designed to limit free speech and the press is found in a number of countries. Some laws protect the government from defamation and insult (Botswana)⁴⁰ and restrict the dissemination of obscenity (Liberia),⁴¹ while other laws restrict journalism based on security concerns (Malawi).⁴² Fortunately, a number of countries are making efforts to reform their laws to make them less restrictive. Rwanda, for example, has drafted a new, less restrictive press bill to replace its oppressive 2002 Press Law.⁴³ Other countries in the region, however, are actively pursuing even greater restrictions of free speech. Nigeria, for example, is considering an anti-gay bill entitled the “Same Sex Marriage (Prohibition) Act,” which would restrict free speech, association, and assembly relating to homosexuality.⁴⁴

Sub-Saharan governments have also taken significant action against the media under the auspices of antidefamation or national security law. In Nigeria, the leader in media abuses in West Africa,⁴⁵ two newspapers were raided in 2004 by the State Security Service for alleged libel of government officials,⁴⁶ and in 2006 journalists were charged with an annulled sedition law for questioning the president’s new plane purchase.⁴⁷ In Côte d’Ivoire, the government has been accused of using the media under its control to promote its own agenda⁴⁸ while suppressing oppositional newspapers and arresting journalists, even though the December 2004 press law was supposed to have abolished jail time for journalists.⁴⁹ Reporters in Rwanda were threatened by the government after criticizing the administration.⁵⁰

In Uganda there have been reports of journalists being harassed by the military and, in one

case, a foreign journalist being excluded from the country altogether.⁵¹ In Kenya there have been numerous reports of journalists harassed by state actors and, in some cases, even jailed.⁵² Although Tanzania enjoys widespread press freedom as a general rule, the semiautonomous region of Zanzibar has been marked by threats to the independent press, which has been accused of being “a threat to national unity.”⁵³ The Ethiopian People’s Revolutionary Democratic Front arrested seventy-six journalists, politicians, and civil society activists for “‘treason,’ ‘conspiracy’ to overthrow the government and ‘genocide’” in the ongoing crackdown on opposition to the government following the disastrous May 2005 legislative elections.⁵⁴ Self-censorship runs rampant in the Malawi Broadcasting Company because, as a current employee put it, “a mere negative joke about the ruling party can cost someone a job here.”⁵⁵

Nor has radio been immune to government intervention. In Zimbabwe the government jammed opposition radio stations in 2006,⁵⁶ and in Zambia the government forcibly shut down and revoked the license of a radio station that broadcasted opposition views.⁵⁷

Though some countries, such as Botswana and South Africa, protect free speech and are recognized for their level of freedom, the continent as a whole is characterized by its severe, entrenched restrictions of expression and the press.⁵⁸

Internet content regulation

The regulation of Internet content in sub-Saharan Africa is still in its formative stages. Given the generally low penetration rates across the region, the inchoate nature of Africa’s Internet regulatory regimes is not surprising. With a few exceptions, including South Africa, sub-Saharan Africa has just begun to consider options and put together plans for regulating Internet content. In this section, we investigate the current trends and likely futures of Internet content regulation in the region

relating to obscene content, defamation, political opposition, security, copyright, and Voice-over IP (VoIP).

Obscene content

Many sub-Saharan African countries have laws that restrict the traditional distribution of obscene materials and empower organizations to enforce those laws. In South Africa all material classified by the Film and Publications Board as XX, including child pornography and violent sexual acts, and X18, including any depictions of explicit sexual conduct, is illegal to distribute.⁵⁹ X18 material can be legally distributed, however, if it occurs in a face-to-face manner honoring age restrictions and within a building.⁶⁰ The Malawi Censorship Board, established in 1968 under the harsh Banda regime, remains active in restricting pornographic material. For example, in 2002 the board ordered the takedown of a billboard advertisement showing a woman’s navel.⁶¹ Zimbabwe similarly restricts pornographic content, with laws making the possession and dissemination of any “indecent or obscene” content (that is, anything “subversive of morality”) illegal.⁶²

Many countries, however, have not directly applied these laws to the Internet. In many cases, it is still unclear whether they actually could be applied. For example, a nonprofit media organization focusing on gay and lesbian affairs in Africa, known as Mask, argues that Zimbabwe’s Censorship and Entertainments Control Act, which regulates obscene content, has not kept pace with technology and, therefore, may not apply to Internet pornography.⁶³ Similarly, Botswana’s Telecommunications Act 1996 makes illegal the transmission “by means of a public telecommunication system, a message or other matter which is offensive or of an indecent, obscene or menacing character,”⁶⁴ but the country’s ICT policy document questions whether this covers actions such as “exporting” child pornography over the Internet.⁶⁵

Countries have come to the realization that they will need to develop policies to address the social and political ramifications associated with the availability of obscene content online as the Internet spreads through the region. For example, the Malawi ICT for Development (ICT4D) policy calls on the government to “put in place mechanisms that will safeguard girls, boys and women from fraud, misuse of information and immoral behavior brought about by the use of ICTs” and puts the Malawi Censorship Board in charge of “addressing ethical issues of the digital culture in order to ensure the protection of the rights of the vulnerable consumers.”⁶⁶ Tanzania’s ICT policy document comes to a similar conclusion, stating that “the Government will seek to discourage inappropriate use of ICT that is detrimental to our cultural values, ethics, mores, and morality such as viewing pornography.”⁶⁷

Countries with greater Internet penetration rates than Malawi and Tanzania, at 0.4 percent and 0.9 percent respectively,⁶⁸ are further along in their handling of the issue. Nigeria, for example, with a 4 percent penetration rate,⁶⁹ is currently considering the Computer Security and Critical Information Infrastructure Protection Bill 2005, which would explicitly make distribution of child pornography online a crime.⁷⁰ In Clause 12 of Ghana’s (which has a 2 percent penetration rate)⁷¹ Computer and Computer Related Crimes Act, 2005, there are strict prohibitions for online child pornography.⁷² South Africa, with the highest penetration rate in sub-Saharan Africa, at about 11 percent,⁷³ took the most drastic step of all when, in September 2006, the government notified all pornography sites hosted in South Africa that they must cease posting XX and X18 classified materials by December 31, 2006, or face criminal action under the Film and Publications Act 1996.⁷⁴ So far, the vast majority of pornography sites have complied and removed their infringing content, but some remain. The government is currently compiling a

list of sites that have refused to remove their content for shut-down and prosecution.⁷⁵

In sum, it appears likely that obscene content on the Internet will be increasingly regulated as Internet development progresses in the region. Obscenity laws that might be applied to Internet content already exist in most sub-Saharan countries. As the South African precedent has shown, decisive action is a possibility.

Defamation

As discussed in the legal framework section, most countries in this region have existing defamation or insult laws restricting what can be broadcast or published. For example, Botswana’s Penal Code bans insults directed at its president and flag.⁷⁶ As many of these laws in the region are criminal, free expression watchdog groups such as the International Freedom of Expression Exchange (IFEX) have called for their repeal.⁷⁷

Few countries in sub-Saharan Africa, however, have put their defamation laws to use in the Internet sphere. South Africa is an exception, as it often is, with a small amount of case law relevant to civil defamation over the Internet. In the case of *Tsichlas v. Touch Line Media*, the manager (Natasha Tsichlas) of a South African soccer team filed suit against Touch Line Media for anonymous defamatory posts directed at her on Touch Line’s Web site, Kick Off. Among the “prayers” of the suit was a requirement for Touch Line to actively monitor posts on Kick Off for defamatory material.⁷⁸ The judge found, however, that freedom of speech on the Internet would be significantly curtailed if the hosts of discussion boards were required to self-regulate material posted on their sites.⁷⁹ What makes this ruling interesting is that 1) it upheld the principle of limited liability for content hosts under a system of takedown notices similar to the U.S. Digital Millennium Copyright Act (DMCA) for defamatory, copyright infringing, and illegal material, as instituted by the Electronic Communications and

Transactions Act 2002,⁸⁰ and 2) it established an Australia-like jurisdictional rule for Internet defamation cases in which publication occurs where the material is experienced.⁸¹ Even though the material was hosted by an ISP in Cape Town, the case was held in the Johannesburg High Court.⁸²

One incidence of Internet filtering found in the region was based on defamation in the lead-up to the Ugandan presidential and parliamentary elections on February 23, 2006. On February 16, the government ordered all of the country's ISPs to block the Web site of Radio Katwe, where a user had posted criticism of President Museveni. In addition, on February 18, the government ordered a temporary block on *The Monitor*, an independent daily, though the exact reasoning for the block is unknown. The ISPs complied in both cases, making the sites inaccessible.⁸³

In Senegal the French national Christian Costeaux in 2004 was sentenced in absentia to a year in prison and fined 600 million CFA francs (USD1.2 million)⁸⁴ for posting an allegedly defamatory article on his tourism Web site www.senegalaisement.com from the Senegalese newspaper *Walfadjiri* that accused aides of the mayor of Ziguinchor of embezzling more than 100 million CFA francs (USD200,000). The site, however, was never blocked.⁸⁵

Finally, in Zimbabwe the government has been cracking down on criminal defamation and insult transmitted by e-mail. In 2005 authorities arrested forty people in a raid on a local Internet café because an e-mail insulting President Robert Mugabe was allegedly sent from the location.⁸⁶

Overall only a small number of countries in the region have begun to apply defamation and insult laws to the Internet. However, as the Internet spreads across the region, there is no reason to doubt that an increasing number of countries will also come to apply their laws to the Internet, as has occurred in the rest of the world.

Political opposition

Though one could imagine other countries in the region doing the same, Ethiopia is so far the only country in sub-Saharan Africa to actively engage in political Internet filtering. ONI research has found that Ethiopia focuses its filtering primarily on political bloggers with oppositional views by blocking two major blog services, blogspot.com and nazret.com. This blanket ban of these blogging domains results in extraordinary overblocking, filtering thousands of Weblogs that have no relevance to politics or Ethiopia. In addition, the government blocks Web sites of opposition parties, sites representing ethnic minorities, sites for independent news organizations, and sites promoting human rights in Ethiopia.⁸⁷

Ethiopia's Internet penetration rate of 0.2 percent⁸⁸ is the lowest rate of any country that ONI has identified as implementing an active Internet filtration regime. Other countries such as Zimbabwe, which have higher rates of Internet usage and similarly repressive regimes, filter neither political nor any other content. One possible explanation is location. Ethiopia's proximity to the heavily filtering Middle East and North Africa (MENA) region may influence its decision making on the subject. Whatever the reason, it is striking that a country with such a small population of Internet users would choose to implement an Internet content filtration regime.

As the Internet spreads, there is likely to be a convergence between the regulation of traditional media and the Internet, with countries in the region enacting restrictions on political content online, as they already do offline. This may well take the form of Internet filtration, as it has in many of the other countries which ONI has studied.

Security

Despite limited Internet access in the region, a number of countries have implemented Internet security policies to increase communication interception abilities and curb illegal online

activities. In South Africa, parliament passed the Regulation of Interception of Communications and Provisions of Communication-Related Information Act 2002, which requires ISPs to retain data from customers for an as-yet undetermined period of time and makes any Internet system that is unable to be monitored illegal.⁸⁹ In addition, the Electronic Communications and Transactions Act 2002 created a legion of cyber inspectors whose job it is to, as Privacy International describes, “inspect and confiscate computers, determine whether individuals have met the relevant registration provisions as well as search the Internet for evidence of ‘criminal actions.’”⁹⁰

Zimbabwe’s government, on the other hand, has been fighting for years with its High Court for wider powers to monitor and intercept e-mails. As of publication, the court has successfully limited the legal ability of the government to perform these tasks.⁹¹ The raid, mentioned earlier, on a cybercafé in 2005, however, shows that the government appears to be achieving its ends despite these limitations. Furthermore, the government has recently stepped up its surveillance of Internet activity by placing plain clothes agents in cybercafés.⁹²

Nigeria has a relatively well developed Internet security regulatory system in place involving agencies such as the Nigerian Cybercrime Working Group.⁹³ As mentioned earlier, Nigeria is currently considering the Computer Security and Critical Information Infrastructure Protection Bill 2005, which contains provisions to combat cyberterrorism and to allow the government to request that ISPs hold information about users without due process.⁹⁴ Additionally, the Nigerian Communications Act 2003 contains vaguely worded “information-gathering powers” in the name of security.⁹⁵

Under the Telecommunications Act 2005 in Ghana, ISPs can be instructed under court order to intercept communications transmitted online and gather all information they can about users.⁹⁶

In special cases, the president can grant authorization, avoiding the need to obtain a court order.⁹⁷ Clauses 20–24 of the Computer and Computer Related Crimes Act 2005 also delineate specific data retention and Internet communication interception rules for criminal investigations.⁹⁸

In addition to those countries that have already adopted Internet security measures, a handful of countries are formulating strategies to address this issue. Malawi’s ICT4D policy, for example, calls for the government to “formulate and enforce laws and regulations that combat cyber crimes; institute mechanisms and laws to curb vandalism and theft of ICT infrastructure; and enact a law to validate digital signatures on documents in relation to the technology on the market today.”⁹⁹ Botswana, as another example, has acknowledged in its ICT Policy that it lacks “comprehensive legislation in Botswana to deal with data crimes, such as interceptions, modification, data theft, or trafficking in digital signatures or domain names” and has called for further investigation into these topics.¹⁰⁰

As Internet usage develops in Africa, regulations to ensure increased Internet security will be enacted to address cybercrime and the rights and responsibilities of government investigators, including such topics as investigation powers, surveillance, and data retention laws. Even with limited Internet penetration, a number of countries have already taken or are currently taking significant steps to secure the Internet. The intrusiveness of these measures will likely vary by the repressiveness of the government in question. If South Africa’s relatively draconian policies are any indication, however, these security measures are likely to be highly invasive.

Copyright

Copyright protection is generally well established in law in sub-Saharan Africa, covering materials such as written works, music, and videos. Exceptions for “fair use” are also commonplace.

Kenya's Copyright Act 2001, for example, protects "literary works, musical works, artistic works, audio-visual works, sound recordings and broadcasts,"¹⁰¹ and establishes exceptions to the rights of copyright holders.¹⁰² Even with this legal structure, however, DVD and software piracy is rampant in the region. Sixty percent of all DVDs sold in South Africa and 81 percent of all software in use in Africa is pirated.¹⁰³ Few countries have established policies to apply their copyright laws to the Internet.

International pressure is a growing factor in the application and enforcement of copyright laws, particularly in cyberspace; the World Intellectual Property Organization's (WIPO) "Internet treaties" are intended to compel countries to apply copyright protections to the Internet. The WIPO Copyright Treaty (WCT) obligates countries to protect traditional works, and the WIPO Performances and Phonograms Treaty (WPPT) obligates countries to protect producers and performers of sound recorders. WIPO explains that "the treaties thus clarify, first, that the traditional right of reproduction continues to apply in the digital environment, including to the storage of material in digital form in an electronic medium. Second, they clarify that the owners of rights can control whether and how their creations are made available online to individual consumers at a time and a place chosen by the consumer, e.g., at home via the Internet."¹⁰⁴ Only thirteen—including South Africa, Ghana, Nigeria, and Botswana—of the forty-eight sub-Saharan countries included in this overview (but not including Sudan) are parties to these treaties. As a result, there is only moderate international obligation imposed on the region to protect copyright over the Internet.

There has been even less action on the related issue of ISP liability, both in general and for copyright infringement specifically. Only South Africa has done anything on the matter. As mentioned earlier, the Electronic Communications and Transactions Act 2002 establishes blanket

liability limitation for South African ISPs through a notice and takedown system similar to that in the DMCA.¹⁰⁵ Botswana, however, has also recognized the need to address this issue in its ICT Policy, in which the writers directly point out the lack of any "appropriate legislative limitation on the liability of Internet Service Providers" and call for the government to "examine the liability of third parties, including Internet Service Providers."¹⁰⁶

On the whole, online copyright protection in sub-Saharan Africa is still in an embryonic state. As with defamation, however, there does not seem to be any reason that copyright laws will not be applied to the Internet on a widespread basis as the Internet expands. It is unclear, however, what balance will be struck over ISP liability. The one example in the region, South Africa, points to the development of systems with blanket liability, but other models may yet emerge.

VoIP

The introduction of voice over Internet protocol (VoIP) represents a major challenge to sub-Saharan governments with the stiff competition it presents to the incumbent telecommunications companies by offering significantly cheaper calling rates.¹⁰⁷ This challenge has elicited a number of responses. Most countries, such as Botswana, Côte d'Ivoire, Ethiopia,¹⁰⁸ and Malawi, do not allow ISPs to provide VoIP.¹⁰⁹ Only seven sub-Saharan countries—Kenya, Mauritius, Somalia, South Africa, Tanzania, and Uganda¹¹⁰—actually allow it. In yet other countries, the policy is less clear. Though Zimbabwe technically allows VoIP, the regulatory agency Potraz has not yet promulgated regulations on the issuance of the particular license that would allow a company to provide VoIP services.¹¹¹ In Ghana, while no laws specifically make VoIP illegal, the government chose to protect a duopoly (of Ghana Telecom and Westel) over the international voice gateways by having the National Communications Authority shut down ISPs that offered VOIP services.¹¹²

Although this duopoly was supposed to end in 2002, in 2003 there were still reports of the national phone company “turning off the lines of those suspected of” using VoIP.¹³

Conclusion

It is striking that a region with such high levels of speech and media restrictions would have only two countries that have engaged in Internet content filtration. The explanation lies partially in the low Internet penetration rates in sub-Saharan Africa; filtration strategies are likely judged to be too expensive, given the limited impact of Internet on access to information. Even if content restrictions were seen to be desirable, there are not enough people online to warrant the expense. Moreover, the governments most likely to institute filtering lack the technical, administrative, and financial resources necessary for implementation (Zimbabwe, for example, fits this mold). However, as the Internet spreads, the balance of costs to benefits may shift, yielding a situation in which a growing number of countries in the region actively filter the Internet. This is by no means inevitable, however. As we see in the experiences of countries around the world, there are no easy answers to the dilemmas that arise with the spread of the Internet—along with its potential as an engine for human and economic development, the Internet is profoundly disruptive, both socially and politically. Filtering is a likely response, but one fraught with many challenges.

Authors: Evan Croen, Jehae Kim, Katie Mapes

NOTES

1. Our finding of limited Internet filtering is based primarily on secondary sources. The ONI tested only in Ethiopia and Zimbabwe during the past year. Sudan, an active Internet filterer as confirmed by ONI testing, is included in the MENA overview.
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16. Jackie Mackenzie, “The SNO is finally here,” August 31, 2006, <http://business.iafrica.com/news/984828.htm>.

17. Reporters Without Borders, "Internet under surveillance 2004: Senegal," http://www.rsf.org/article.php3?id_article=10727.
18. International Telecommunication Union, Regulatory Newslog, "Privatisation of Telkom Kenya Limited," March 29, 2007, <http://www.itu.int/ituweblogs/treg/Privatisation+Of+Telkom+Kenya+Limited.aspx> (explaining the slow and limited process of privatizing Telkom Kenya).
19. Some countries have even regressed. In Zimbabwe the government unsuccessfully tried to reinstate TelOne's monopoly status in 2004 after the market was liberalized by the High Court in 1998.
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