the *Availability Digest*

Can a Country Shut Down Its Internet?
October 2016

Can a country shut down its own Internet? It depends. Probably not in the United States, Britain, or the Western European countries. But countries in Africa and Asia have done so frequently. Reasons range from stifling dissent to preventing cheating on exams.

How Does a Country Shut Down It's Internet

A government's ability to shut down its country's internet depends upon its control of the Internet Service Providers (ISPs). These are typically private-sector companies that provide services for accessing and using the Internet. If the government has the authority or the will to do so, it can force its ISPs to power down routers, change routing tables, or do other damage to the Internet so that it is not usable by its citizens.

How easy it is for a government to take this action depends upon two variables:

- What is the country's Internet infrastructure?
- How many ISPs offer connections within, into, and out of the country?

There are sixty-one countries in which there are only one or two providers connecting to the outside world. These countries include Lybia and Syria. In these countries, shutting down the Internet is a trivial task. All it takes is to turn off power to a couple of central facilities.

However, even if a country's Internet is turned off, all Internet access is not lost. People can still use smart phones to communicate with the global Internet. Furthermore, many companies may be utilizing private Internet connections.

Why Some Countries Can't

It would be nearly impossible for a government to shut down the Internet in the United States or in Western Europe. There are just too may paths into and out of these countries. A government would have to coerce or damage thousands of ISPs in order to fully clamp down on Internet access.

Besides, U.S. law prevents such an authoritarian action, even in a time of crisis. However, a bill introduced into the U.S. Senate entitled "Protecting Cyberspace as a National Asset" would provide the president with an Internet kill switch to be used in the event of a national cyber-emergency. It is intended to protect the U.S. infrastructure from cyber-terrorists.

Some Examples

Government censorship tends to fall under one of several categories:
- Filtering or blacklisting, such as cutting off access to Google or Facebook
- Wholesale blocking of access to sites outside the country
- Complete shutdown of all Internet access

The Internet has been shut down in Syria, Libya, North Korea, Burma, Nepal, Maldives, Iran, and Egypt. In many cases, this was the easiest way to stifle dissent.

Egypt

Egypt turned off its Internet on January 28, 2011. Doing so was relatively easy for Egypt, since the government owns the main service provider, Telecom Egypt. Even so, it took Egypt five days to accomplish this feat.

Egypt ordered its country's five main ISPs to barricade online traffic. The Egyptian ISPs altered the routing information in their Border Gateway Protocols[1] to stop resolving addresses ending in ".eg," Egypt's domain name. This in effect shut down all the routers that filter traffic, throwing away all incoming and outgoing traffic.

Following Egypt's action, Vodafone released the following statement:

> "All mobile operators in Egypt have been instructed to suspend services in selected areas. Under Egyptian legislation the authorities have the right to issue such an order and we are obliged to comply with it. The Egyptian authorities will be clarifying the situation in due course."

Iraq

In early July, 2016, Iraq's government turned off all broadband and mobile broadband connections, effectively cutting the entire country off from the rest of the world. The reason? So students couldn't cheat on their exams. No other country has ever blocked the Internet during exams.

In 2015, it was reported that Iraq imposed fifteen shutdowns of its Internet. In 2014, Iraq ordered specific blocks on social media in an attempt to stop the spread of Islamic State propaganda.

For Iraq, turning off the Internet is relatively straightforward. The government owns the majority of the country's communication network, including the fibre-optic backbone that connects the country's major cities. The Iraq government sells bandwidth to ISPs who use the backbone to communicate within the country and with the outside world. Thus, the government can turn off the Internet with impunity

Syria

On Thursday, November 29, 2012, everyone in Syria discovered that they had no Internet service. The Syrian government had intentionally caused the blackout to make life difficult for rebels in the country. Internet service was again lost in May, 2013.

Syria frequently uses Internet closures to stifle revolt.

---

[1] <u>Eavesdropping on the Internet</u>, *Availability Digest*; March 2009.
http://www.availabilitydigest.com/public_articles/0403/bgp.pdf

Chad

Chad is central to the fight against Islamic militants. The Chad government shut down its Internet for several days around the time of its presidential vote. The incumbent president soundly defeated more than a dozen challengers.

Ethiopia

Nearly 400 deaths and thousands of arrests in Ethiopia occurred as protests raged against the marginalization of the Oromas and Amharas, Ethiopia's two largest ethnic groups. Protestors relied on the Internet to plan, mobilize, and coordinate with each other. This prompted the government to shut down the Internet to stifle the protests.

Zimbabwe

Zimbabwe's increasingly totalitarian government shut down access to WhatsApp during anti-government protests Wednesday morning, July 6, 2016. WhatsApp constitutes about 34% of all mobile Internet traffic in Zimbabwe. The shutdown sparked outrage throughout the Zimbabwe user base, and access was restored in the afternoon. In total, WhatsApp was down about four hours.

Zimbabwe's collapsed economy has seen severe cash shortages. The government blasted "irresponsible use of social media and telecommunications services." It proclaimed that anyone generating, passing on, or sharing abusive and subversive material was engaging in criminal behavior.

Congo

Like Zimbabwe, Congo is another country that is in dire financial straits and is suffering high unemployment. Congo headed to the polls to elect its next president. Its current president, Denis Sassou, had been president for thirty-two years. Recent referendums had removed a two-term limit and a 70-year-old age restriction.

Telephone, Internet, and SMS services were shut down for 48 hours for "reasons of security." The government wanted to stop any illegal publication of the elections. Mr. Sassou won the election.

Gabon

The government of Gabon shut down its internet after two days of rioting following its recent elections in an attempt to stop the demonstrations. The Internet was closed down for two days.

China

Though China has not closed down its Internet, it frequently filters traffic coming into and going out of the country. It can do this easily because most of the country's Internet access runs through fibre-optic cables at just three points.

Summary

Internet access within a country cannot be shut down without government authority, whether legally granted or not. Notwithstanding the legalities of the acts, there have been many cases in which governments have shut down their Internet, typically to discourage dissent.

Acknowledgements

Information for this article was taken from the following sources:

How Do You Shut Down the Internet in a Whole Country?, *Live Science*; January 28, 2011.
Here's How To Shut Down A Country's Internet Access, *Business Insider*; January 2011.
Could the U.S. shut down the Internet?, *CNN*; February 3, 2011.
How easy is it to shut off a country's Internet, *Washington Post*; December 1, 2012.
Syria and 7 Other Places the Internet Has Been Shut Off, *PC Magazine*; May 8, 2013.
Congo in media blackout for presidential elections, *Al Jazeera*; March 20, 2016.
Chad's leader, in power since 1990, secures 5th term, *Big Story*; April 21, 2016.
How Iraq turned off the Internet, *Wired*; July 4, 2016.
WhatsApp Shut Down in Zimbabwe During Protests – Following Burundi, DRC, Uganda, *Forbes*; July 6, 2016.
How the Ethiopian protests were stifled by a coordinated Internet shutdown, *QZ*; August 14, 2016.
Unrest in Gabon leads to Internet shutdown, *Cloud Flare*; September 1, 2016.