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China's Great Firewall: A Heavier VPN Ban
Stricter censorship online in China
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Introduction

As one of the Seven Wonders of the World, the Great Wall of China, spans a massive distance. Yet, despite its impressive stature, the wall was very inefficient at keeping out northern invaders. Similarly, China's 'Great Firewall' censorship program has also proven to be less effective than the ruling communist party originally hoped. Clever dissidents of the 'Great Firewall' program have always found ways to evade government censorship, the most common method is through the use of a Virtual Private Network (VPN). Authors Kalia and Galperin define a VPN,

> A commercial VPN is a private service that offers to securely relay your internet communications via their own network. The advantage of using a VPN is that all of the data you send and receive is hidden from local networks. VPNs may be hosted in a foreign country, which is useful both for protecting communications from a local government, and bypassing national censorship (Kalia, 2017).

The change in China's policy on VPN usage is worth devoting attention to.

An Easy Intro For Beginners - VPNs and The Internet

Before understanding what a VPN is, it is important to have a simple understanding of how the Internet works. Although most view the Internet as some technical monstrosity beyond comprehension, it is anything but. Most simply, it is a giant web of wires. Some of these wires are huge and span ocean floors to other continents; others are tiny and run under your office desk. Sometimes a wireless signal is used instead of of a wire, but that merely just connects you to a physical location that is attached to wires, where your data continues over wires for the rest of its trip through the Internet. Additionally, devices are plugged into this web such as computers, servers, and other gadgets. These devices then have the ability to communicate to other things plugged into the network, just like telephones.

That being said, there are *billions of devices* connected to the network. Therefore, it's difficult to find where you want to go. To remedy this, there are address digital books called Domain Name Service (DNS) servers. Every time you type in your favorite website, you are really asking this digital phone book where to go and it will respond with exactly the right address.

The last part is getting there, you have an address, but there's still a lot of wires and devices, so you need someone to tell you where to go. To solve this problem, there is a device that does exactly this and points

you in the right direction. This device is called a router because it 'routes' you in the right direction. Although you might not notice it, it's not uncommon for you to go through ten or more routers to get to your favorite website. With that knowledge covered, we can start to discuss China's Great Firewall and their recent policy change.

Commercial VPNs serve many purposes beyond evading government censorship and are used globally for a variety of reasons. Many corporations use these to allow their employees to securely connect to their networks from outside the office, allowing workers to securely work from home or while on trips. Individuals often use this extra security feature to protect themselves from prying criminals and companies that would like to collect and sell their data. Yet, VPN usage remains a vital tool for citizens in China, and other regions lacking the right of freedom of speech, to access the outside Internet and freely use the Internet while under heavy censorship.

A VPN business runs a commercial router with added security for its users. Before using a VPN, users install a software component on their computer. This software encrypts all the data that must be sent on the Internet, called 'traffic'. It then sends this traffic to the VPNs router before going to where it is supposed to go. Often, this is in another country or region. From here traffic goes to the website the user wants. Without a VPN, governments and businesses can easily see who accesses certain websites as well as when and what they do on those sites. However, when users are using a VPN, the only thing that governments can see is encrypted traffic that goes to a VPN server.

Alright – So What Exactly Is The Great Firewall
In general, a firewall is software that runs on a device and watches all the traffic leaving and entering that device. In some instances, it blocks criminals from breaking into your computer, and in others, it allows your office to block you from accessing social media. Users, or the businesses they work for, can tell the firewall to block certain types of traffic. Now imagine a Firewall blocking, or otherwise interfering, with content trying to enter or leave an entire country. More broadly, the 'Great Firewall' refers to multiple tools, and the related authorities, that all work to enforce Internet censorship within China.

Like many other regimes that restrict freedom of speech, China uses a Firewall and other tools to block websites and content it does not like. China monitors traffic on its routers and DNS servers [phonebook equivalents] that users need to use in order to enter and exit the country. Therefore, when a Chinese citizen searches for "Tiananmen Square" online, the 'Great Firewall' on a DNS server sees this, blocks it, and sends a report to the authorities. Likewise, if it sees too much encrypted traffic to one specific router, it learns that a VPN is being used and blocks anyone from being able to reach it. Yet, China is unique from other censorship regimes because it possesses the unique technical capability to deploy such a massive operation. Where other countries often release strict laws prohibiting unwanted content and behavior online, the Chinese government relies on its impressive technical capabilities to enforce censorship. Censorship not only monitors content, but impact. When a post starts to go viral, or comes from a more famous source, it is automatically given more attention by the Great Firewall and the authorities, making it more likely to be taken down.

Yet, along with its technical components, the communist party outside of 'cyberspace' plays a large role in the Great Firewall as well. They pressure companies that go against their political views and encourage

those that support them. Likewise they pursue people who have spoken out against the government politically or have broken other censorship laws. In one example, one of the most popular search engine and map apps in China, Baidu, shows this. On Baidu's map app, the Diayu Islands (the Senkakus to the Japanese) are included, and many military locations are simply left blank. (Fish, Randall, 2013). In another example Apple was denounced and deemed "arrogant" in the news for breaking the law, this was due to Apple hosting a religious app on the Chinese app store (Fish, Randall, 2013). Along with political dissidence and religious content, pornography and marijuana related content is also illegal. Many Western social media sites and online tools are blocked. Author Wertime explains "the line between what's allowed and what isn't, and the consequences that flow from the latter, remains strategically fuzzy" (Wertime, 2015). There are a lot of factors to consider: "how likely a post is to travel, whether it runs counter to government priorities, and whether it calls for action or is likely to engender it" (Wertime, 2015). The Chinese government is believed to have the ability to enforce much stricter censorship over its networks, however as a general rule, the government's goal is in shaping public discourse; not in catching every dissident.

Recently the government has gone further than it has ever before. It is now forcing citizens to download spyware on their smartphones to prevent users from accessing 'terrorist information', 'pornography', 'illegal religious content', etc. Frighteningly, this application allows the government to access any phone and the spyware is installed on remotely. Security forces have been documenting and inspecting residents' phones at checkpoints in order to ensure that they have the spyware app installed (Lam, 2017).

VPN Ban

VPNs have been technically prohibited since 2002. However, such legislation has been unsuccessful in preventing their use because they are relatively easy to obtain. Often, hotels and other businesses aimed at foreigners provide VPNs to attract customers. In the first week of August 2017, an escalation of policy and severity against VPNs began dissuading common citizens from using or providing these services. That month, under Chinese orders, Apple was forced to remove VPN apps it was offering for its devices. This makes it significantly more difficult for citizens to obtain a VPN, especially those who are less technically inclined.

> As the Electronic Frontier Foundation (EFF) points out, this new policy banning VPNs is only set to last 2 years, they comment :Enforcement of China's internet censorship policies has historically waxed and waned, depending on the authorities' concerns over domestic political unrest. Crackdowns can be triggered by concerns over a one-time event, such as the Beijing Olympics in 2008, or regularly-occurring events such as the Communist Party Congress or the June 4 anniversary of the Tiananmen Square protests. Crackdowns have usually been followed by an easing of restrictions after the politically-sensitive event has passed (Kalia, 2017).

Those who are determined enough to evade censorship will still have other options available to them. Android devices can find VPN apps on a multitude of knock-off Google Play stores (where Android devices generally download apps from). Also, tech-savvy individuals can 'jailbreak' their iPhones with different software that might allow for a VPN. Also useful, are the abundance of apps that have their own strong encryptions, such as Telegram and Signal.

Conclusion

Growing censorship in China, both in technical capabilities and in enforcement, is becoming increasingly concerning. It is unclear whether this increased intensity is a temporary move to crack down on possible opposition and undesirable narratives for upcoming events, or if this might become the new norm. Similarly, this leaves a large ethical question for Western tech companies operating in the region. They may be forced to make a tough decision between complying with Chinese government mandates in order to continue conducting business, or standing up for their ethical standards. Given the amount of business at stake, the latter seems less likely. Authoritarian governments are intensifying crackdowns on the freedom of speech with strict censorship. There is little doubt that China, and its technical capability, are a leader in that effort.

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