User Privacy provided by VPN companies

A critical analysis of the privacy claims made by commercial VPN companies and how it impacts VPN users

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Abstract :

With popular features such as being able to access geo blocked content, and being able to circumvent censorship, VPN companies have been able to scale their user base at a significant growth rate in the past few years. Millions of users trust these VPN providers to provide security privacy online, which their ISP does not provide. The user expectations are aligned with the claims commercial VPN companies make in their marketing. However, under further inspection, it seems like there is little guarantee that the VPN companies are able to provide in regards to safeguarding user data and privacy. Thus, this paper aims to provide evidence which suggests that VPN companies could use better protocols and also provide more transparent information to the users on their capabilities.

Introduction:

On the surface, VPNs are supposed to protect your personal information on the internet as you are browsing. “In response to the repeal of the rules, public concern has prompted privacy advocates and other responsible entities to point to VPNs as a viable way to regain some control over their private information. “ [1] When you connect to a VPN (or virtual private network) server, your IP address changes, and the data traffic on your device gets encrypted. It creates a private network between your device and the VPN server (hence the name, virtual private network).

Changing your IP changes the location that's associated with you online: if you're using the internet in Australia, but connect to a VPN server in the US, you'll appear online with an American IP address. Meanwhile, encryption scrambles data, making it look gibberish to anyone who tries to read it. If you're using a trustworthy VPN service, your browsing activities become illegible to snoopers.

However, this doesn't mean a VPN user is entirely untraceable online. Internet service providers (ISPs), websites, and even governments can determine whether you're using a VPN. They might not know what you're up to online, but they will have no difficulty with VPN detection. So, how can a VPN be traced?

Some of the things ISPs can do is rerouting other servers through yours and allow criminal activities to exit through your ISP address making it look like you are engaging in criminal activity. They can track cookies. Getting access to your smartphone to look through your history and locate your phone through gps.

By doing these activities, ISPs can detect important VPN encrypted data, without having direct access to the information. Free VPN services even put limits on data, usage and speed. Choosing a VPN service means selecting a security company that can provide multiple services in an ever changing, competitive environment.

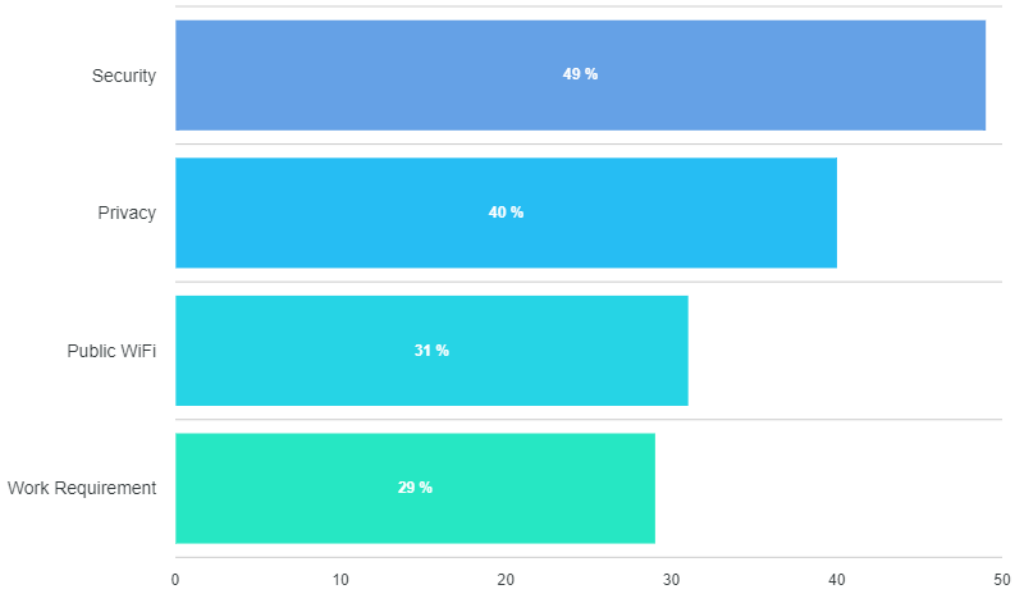
Preliminary Research Findings:

VPN companies can allow third party sites to track user data. Free VPN providers especially engage in this since this is one of the ways they are able to keep the servers running. That is why it is important for the users to read the terms of service carefully before joining a VPN network. Moreover, VPN companies may share your email address and payment information that you provide when you sign up, with other third parties which essentially strips all privacy. It is also worth noting that VPN companies keep different kinds of logs such as connection logs and usage logs. These logs can be used to identify the user as the source of internet traffic. Therefore, users should demand their VPN providers provide transparency reports, participate in vulnerability disclosure programs and be able to provide users with all the data they have collected about the user.

Most people pay for VPN services. This is not surprising as free VPN services limit a number of things including data usage, and bandwidth. Very few PC users use VPNs, while many more use their phones. This is probably because people value their privacy more when communicated directly with other people. According to statistics found online, the most common gender using VPNs is male. While the most common income level is middle class. Finally, the largest number of users is from the 45-50 age group.

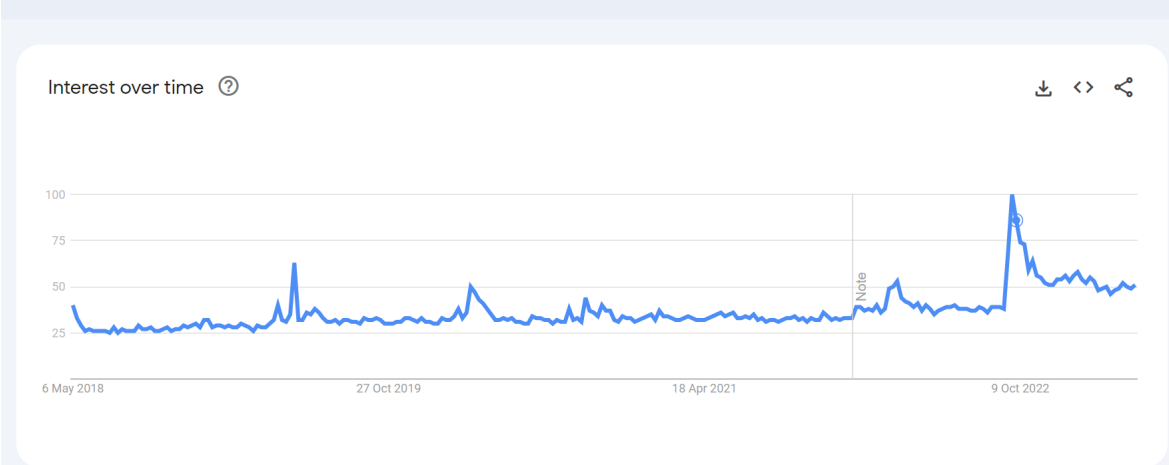
Data and Statistics on VPN

1)



According to the above statistics from security.org, security and privacy seem to be the most touted reason given by people for using VPN services. Thus, it is important for VPN service providers to follow the state of the art data security and privacy protocols in order to to deliver on user expectation

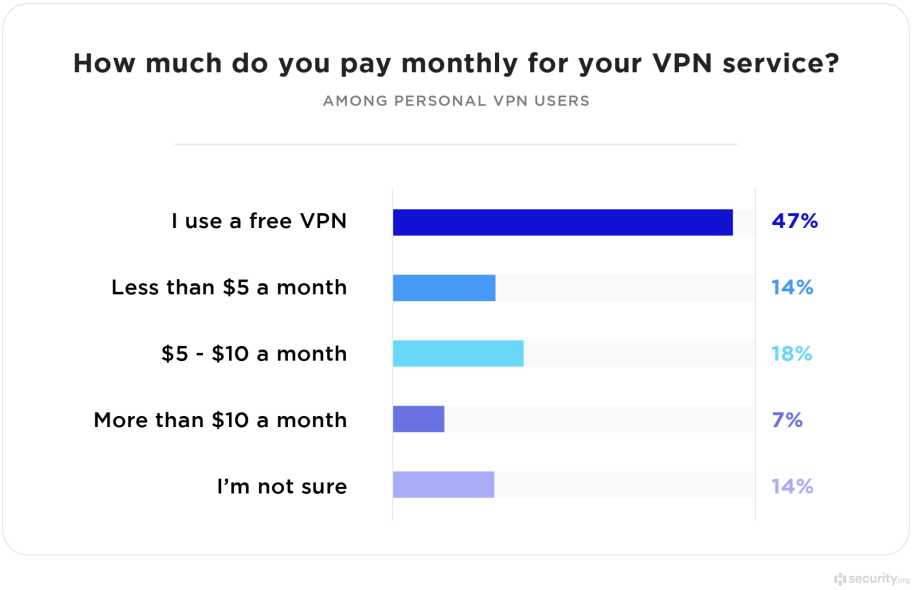
2)



According to the above statistics from google trends, there has been a huge surge of interest in VPN products from the public. The more casual people tend to be less aware of the security and privacy issues with using

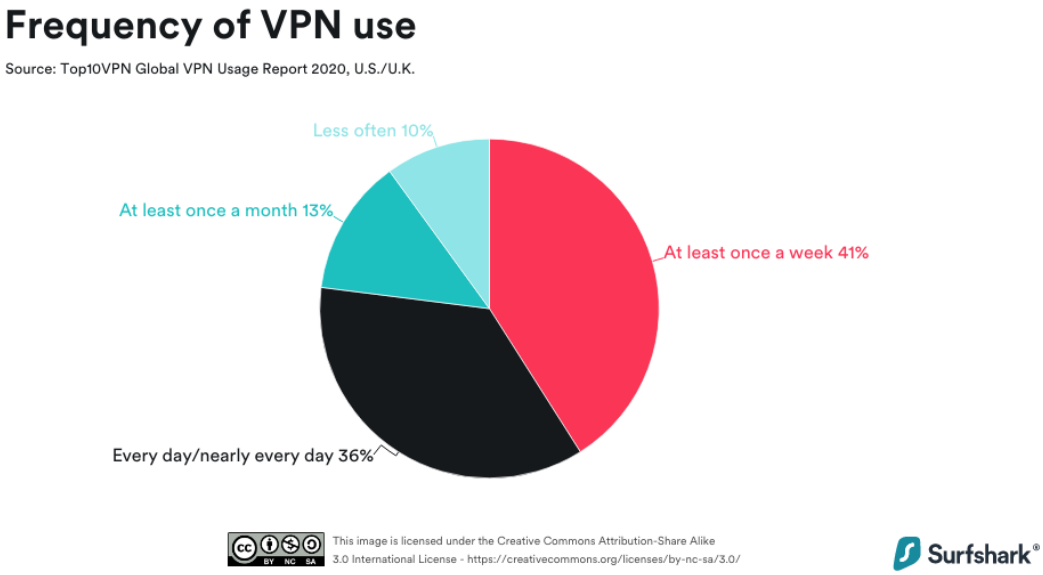
VPN services. Hence, it is important to raise awareness about VPN security and privacy issues among the public

3)



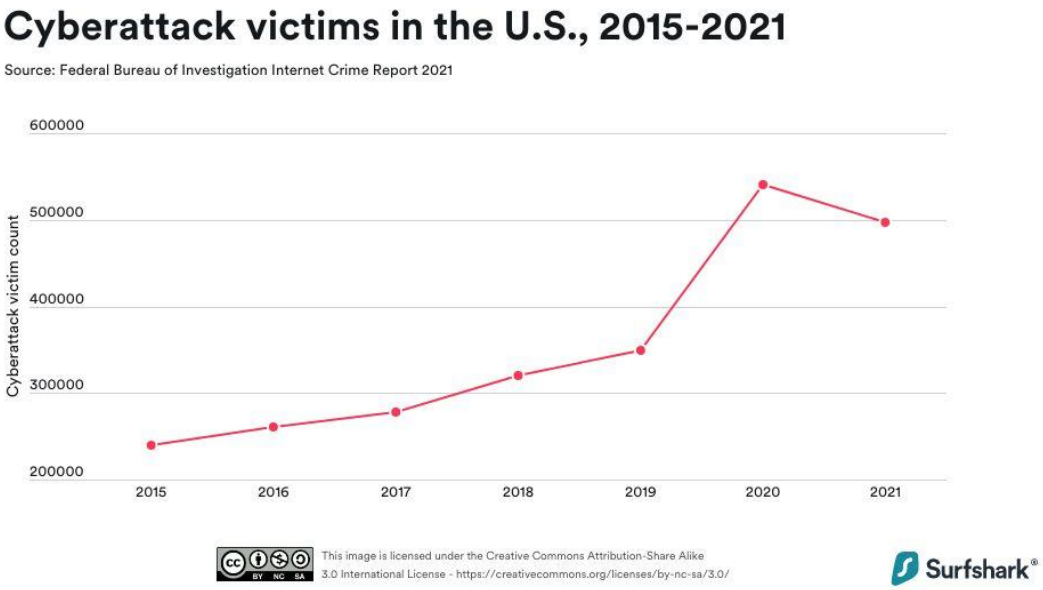
According to this statistic collected among VPN users, almost half of them claim to be using a free VPN service. As mentioned earlier, free VPN users are even more susceptible than paid VPN services when it comes to security and privacy of your personal data since many of the free VPN services rely on selling personal data of users to cover business costs.

4)



According to the above statistics it is clear that many people use VPNs on a regular basis which indicates that a lot of communication and information exchange occurs within these VPN networks. Hence, it is important for people to understand the security and privacy limitations of VPN's when trusting them with your personal data

5)



This statistic shows the number of growing cyberattack victims in the US. Therefore, people flock to services such as commercial VPN services which claim to guarantee security and protection to their consumers but fail to do so in practise

6) IPVanish Data Privacy Scandal

A VPN service provider known as IPVanish claimed to have a no-log policy. However, after they were investigated for a criminal case, they were able to hand the user log of the criminal to the authorities. This proved that they were in fact keeping track of user logs.

7) Free VPN Usage logs leaked

In early 2021, accounts of 21 million users using the free VPN services - GeckoVPN,SuperVPN and ChatVPN were listed for sale on the dark web.

Conclusions:

The need for secure VPN services is at an all time high. This is likely to continue into the future. Continued reliance on free VPN's will mean a reduction in security for the user. People will need to take care with not only their phones, but also their personal computers, as companies will continue to make the general public's personal data a target for commercialization. A small monthly fee type of service goes a long way in

ensuring privacy by incentivizing companies to protect user data instead of selling it on the darkweb. At the very least, increasing one's awareness of the privacy limitations of their current service will prevent losing valuable information. This keeps pressure on VPN companies to provide a service that their customers would want. The risk is that VPN companies will tend to go behind the consumers back and sell their data to even less known parties, who can then use that information for nefarious purposes.

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