

# THE GOOD & EVIL OF THE INTERNET AND WHY YOU SHOULD KNOW ABOUT THEM

WEEK 3

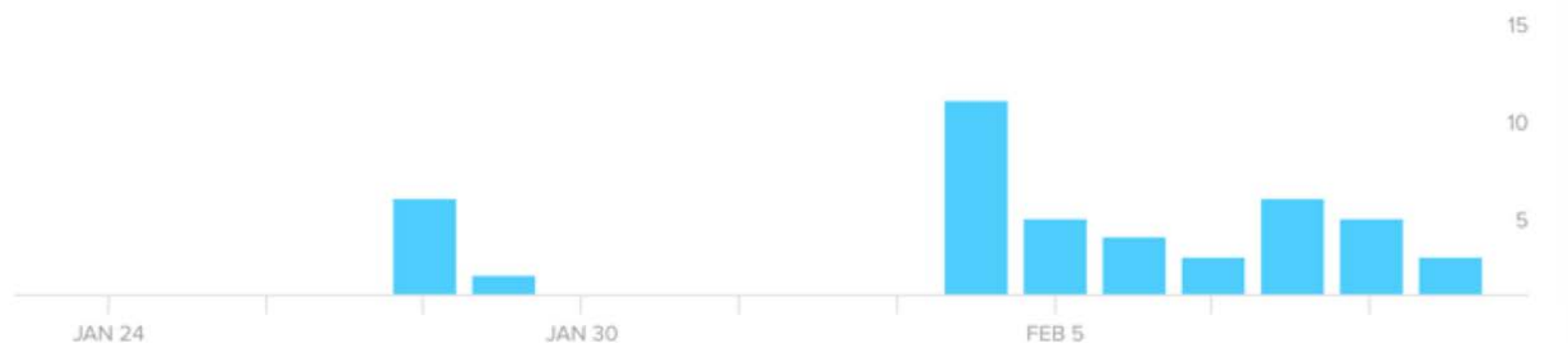
- **OLLI WINTER 2020 COURSES**
- **Mondays, January 27—March 2**
  - **9:30—11:30 a.m.**
  - **@Cooperage**
  - **Dr. Farid Farahmand**

OSHER  
LIFELONG  
LEARNING  
INSTITUTE

# A Quick Check-in.....

- Thank you for completing the survey

36  
TOTAL CLICKS

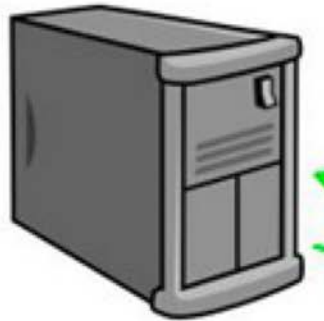


- Uploaded the slides
- Let's hold on to your questions for the first 45 min

# What We Cover Today

- Quick review.....
- Internet connection (video)
- Internet & Google
- VPN
- Encryption
- Dark Net
- Bitcoin

# How Do We Access A Web Page?

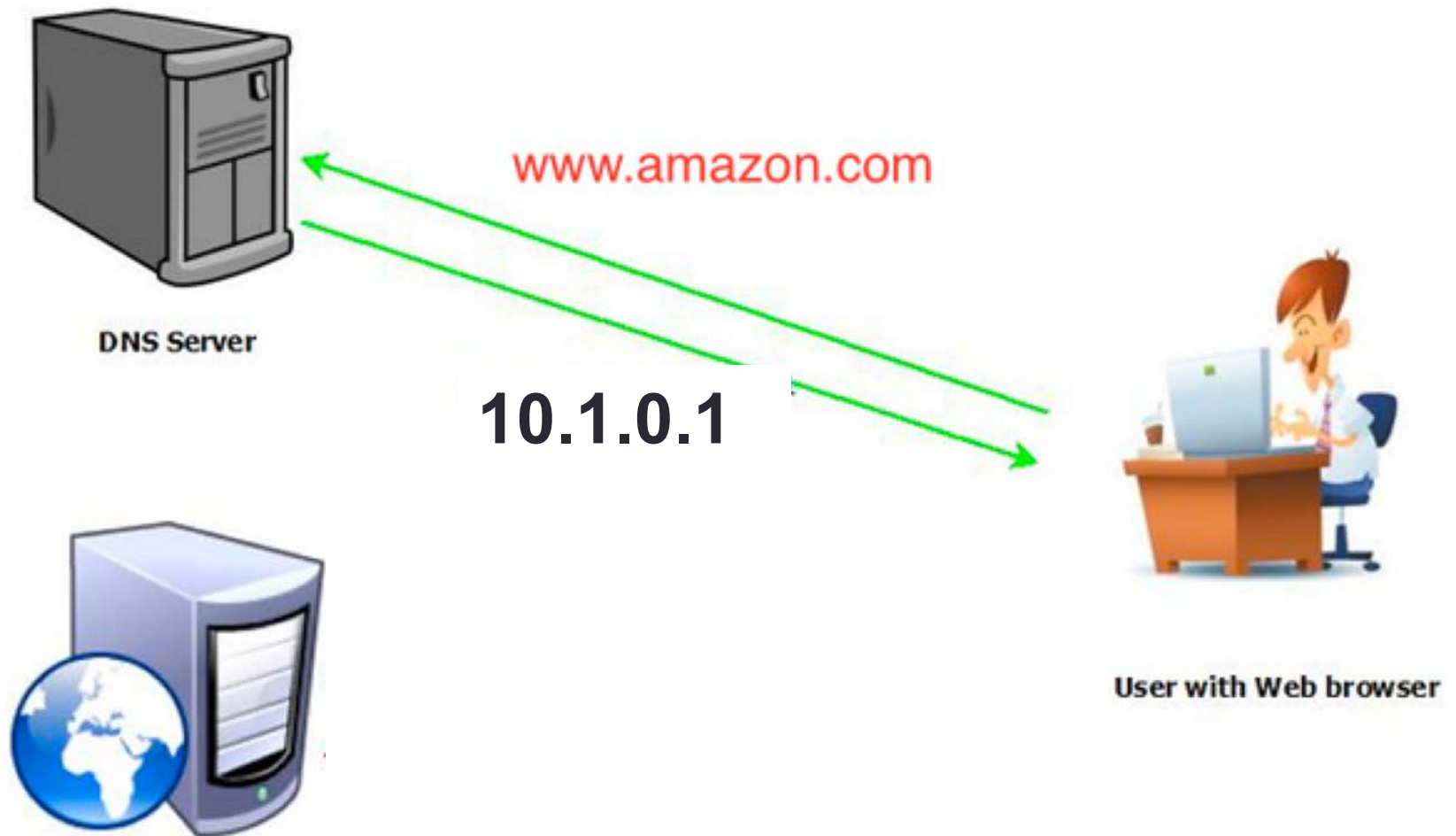


**DNS Server**



**User with Web browser**

# How Do We Access A Web Page?



# How Do We Access A Web Page?



DNS Server

10.1.0.1



User with Web browser

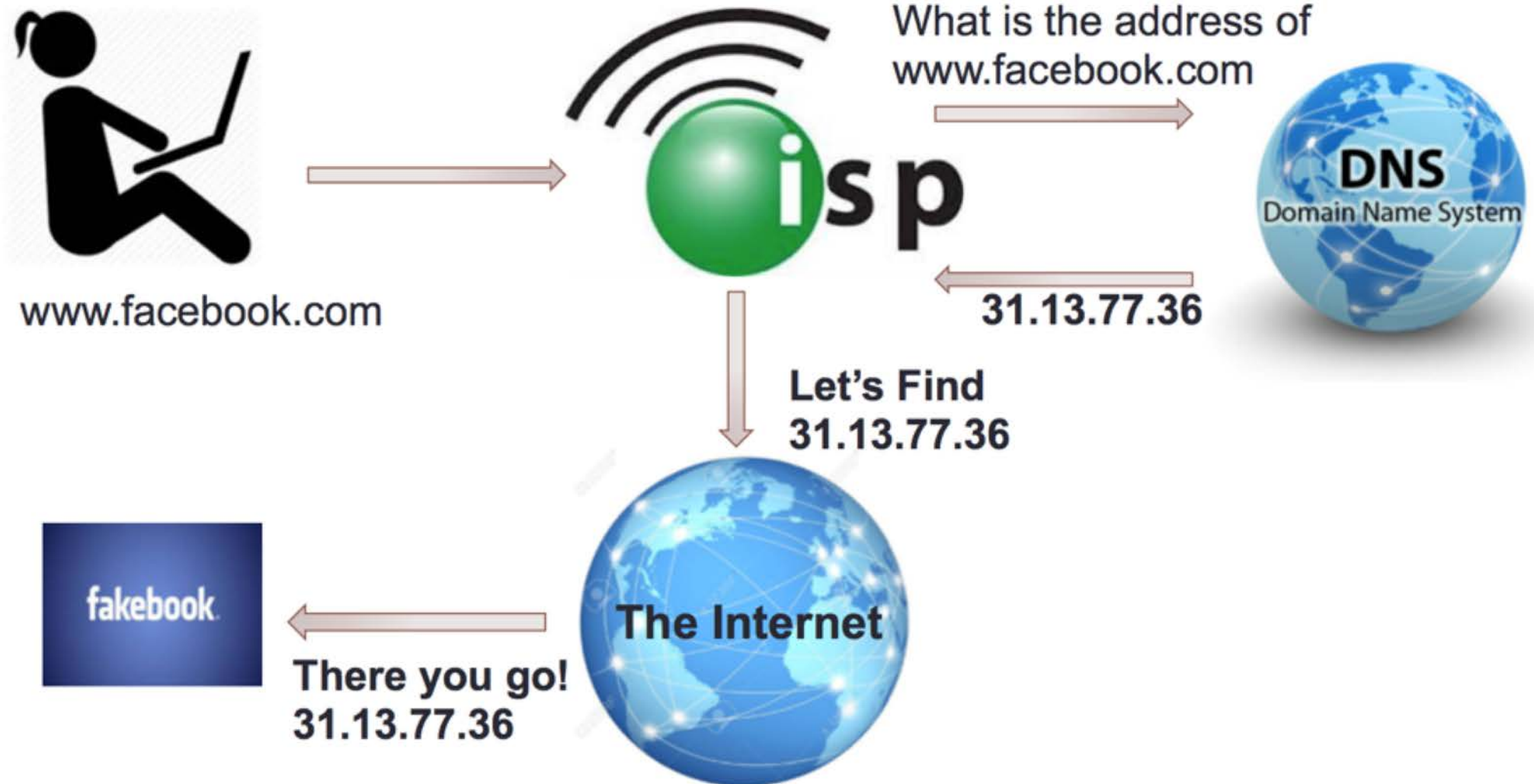


4. HTTP Response



# The Internet In Action

## Getting Connected to a Site Needs Name Resolution





# Connecting to the Internet

1



IP Address:  
130.118.23.100



Let's have a BLOG!

130.118.23.100  
www.stopbailout.org

2

Register with a domain name registrar



Domain name:  
www.stopbailout.org

**BLOG**



Why do we bailout BANKs  
& not ordinary people?

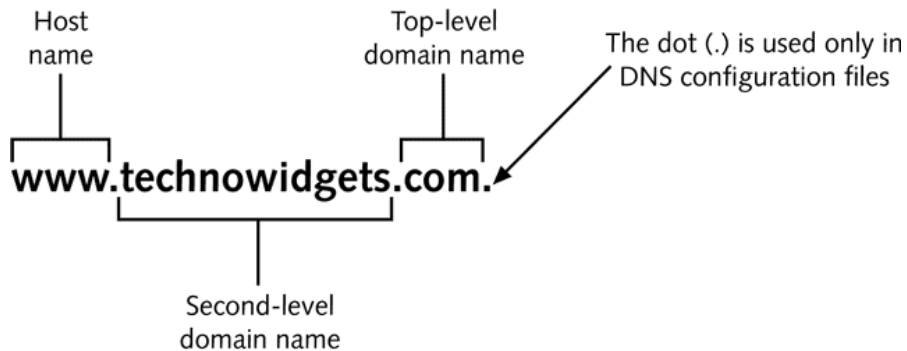
3

Internet Corporation for  
Assigned Names and  
Numbers





# Domain Names



Domain Name	Assigned To
aero	Air transport industry
arpa	Infrastructure domain
asia	For or about Asia
biz	Businesses
com	Commercial organizations
coop	Cooperative associations
edu	Educational institutions
gov	United States Government
info	Information
int	International treaty organizations
jobs	Human resource managers
mil	United States military
mobi	Mobile content providers
museum	Museums
name	Individuals
net	Major network support centers
org	Non-commercial organizations
pro	Credentialed professionals
travel	Travel and tourism
country code	A sovereign nation

# Country Codes (.mx or .cn)

- **.mx** is the Internet country code top-level domain (**ccTLD**) for Mexico, controlled by **Network Information Centre México**
  - **.com.mx**: Commercial entities (actually unrestricted)
  - **.net.mx**: Network providers (registration limited to qualifying entities)
  - **.org.mx**: Non-profit organizations (registration limited to qualifying entities)
  - **.ngo.mx**: Non-profit organizations or Civil society org.
  - **.gob.mx**: Federal, State or Municipal Governmental entities (similar to gov.)
  - **Currently second level domains can be registered directly under .m**
- **.cn** is for the People's Republic of China
  - Domain name administration in mainland China is managed through a branch of the **Ministry of Industry and Information**.
  - The registry is maintained by China Internet Network Information Center (CNNIC).

# Internet Country Codes

Country / territory	Country code top-level domain (TLD)
Afghanistan	.af
Åland	.ax
Albania	.al
Algeria	.dz ( <i>stands for الجزائر or, in the Latin alphabet, al-jazā'ir, pronounced as Al Dzayer</i> )
American Samoa	.as
Andorra	.ad
Angola	.ao
Anguilla	.ai
Antarctica	.aq ( <i>stands for Antartique</i> )
Antigua and Barbuda	.ag
Argentina	.ar
Armenia	.am
Aruba	.aw ( <i>stands for Aruba West Indies</i> )
Ascension Island	.ac
Australia	.au
Austria	.at
Azerbaijan	.az
Bahamas	.bs
Bahrain	.bh
Bangladesh	.bd
Barbados	.bb

Togo	.tg
Tokelau	.tk
Tonga	.to
Trinidad & Tobago	.tt
Tunisia	.tn
Turkey	.tr
Turkmenistan	.tm
Turks and Caicos Islands	.tc
Tuvalu	.tv
Uganda	.ug
Ukraine	.ua ( <i>stands for Україна, or, in the Latin alphabet, Ukraina</i> )
United Arab Emirates (UAE)	.ae
United Kingdom (UK)	.uk
United States of America (USA)	.us
United States Virgin Islands	.vi
Uruguay	.uy
Uzbekistan	.uz
Vanuatu	.vu
Vatican City	.va
Venezuela	.ve
Vietnam	.vn
Wallis and Futuna	.wf
Western Sahara	.eh (not in use; instead .ma is used)
Yemen	.ye
Zambia	.zm
Zimbabwe	.zw

<https://www.worldstandards.eu/other/tlds/>

# Check (Top-Level) Domain Names

The screenshot shows the MARCARIA.com website interface. At the top, there is a navigation bar with links for Home Page, About Us, Domain Services, Other Services, Search, Contact Us, and English. A login section is visible in the top right corner. The main content area is titled "Domain Registration in China" and includes a search form for domain names. A table lists the annual prices for various domain extensions: .CN, .COM.CN, .NET.CN, .ORG.CN, .SH.CN, and .BJ.CN, all priced at \$28. A "Live Help Online" button is also present in the sidebar.

**MARCARIA.com NETWORK**

Login to your account:    [View Cart](#)

[New User](#) [Recover password](#)

[Home Page](#) [About Us](#) [Domain Services](#) [Other Services](#) [Search](#) [Contact Us](#) [English](#)

Home > Domains China

## Domain Registration in China

Please enter the ".CN", ".COM.CN", ".NET.CN", ".ORG.CN", ".SH.CN" and/or ".BJ.CN" domain name(s) you would like to search, differentiating them by a space or a line.

www.

- .CN
- .COM.CN
- .NET.CN
- .ORG.CN
- .SH.CN
- .BJ.CN

[IDN Extensions](#)

- FREE Web Builder & Email**  
Build your Website online and setup Email accounts. [More](#)
- FREE Email & Web Forwarding**  
Forward your Email to any address and redirect Web traffic to other domain. [More](#)
- FREE DNS Records Management**  
View and manage all your DNS records (A, MX, CNAME and more). [More](#)

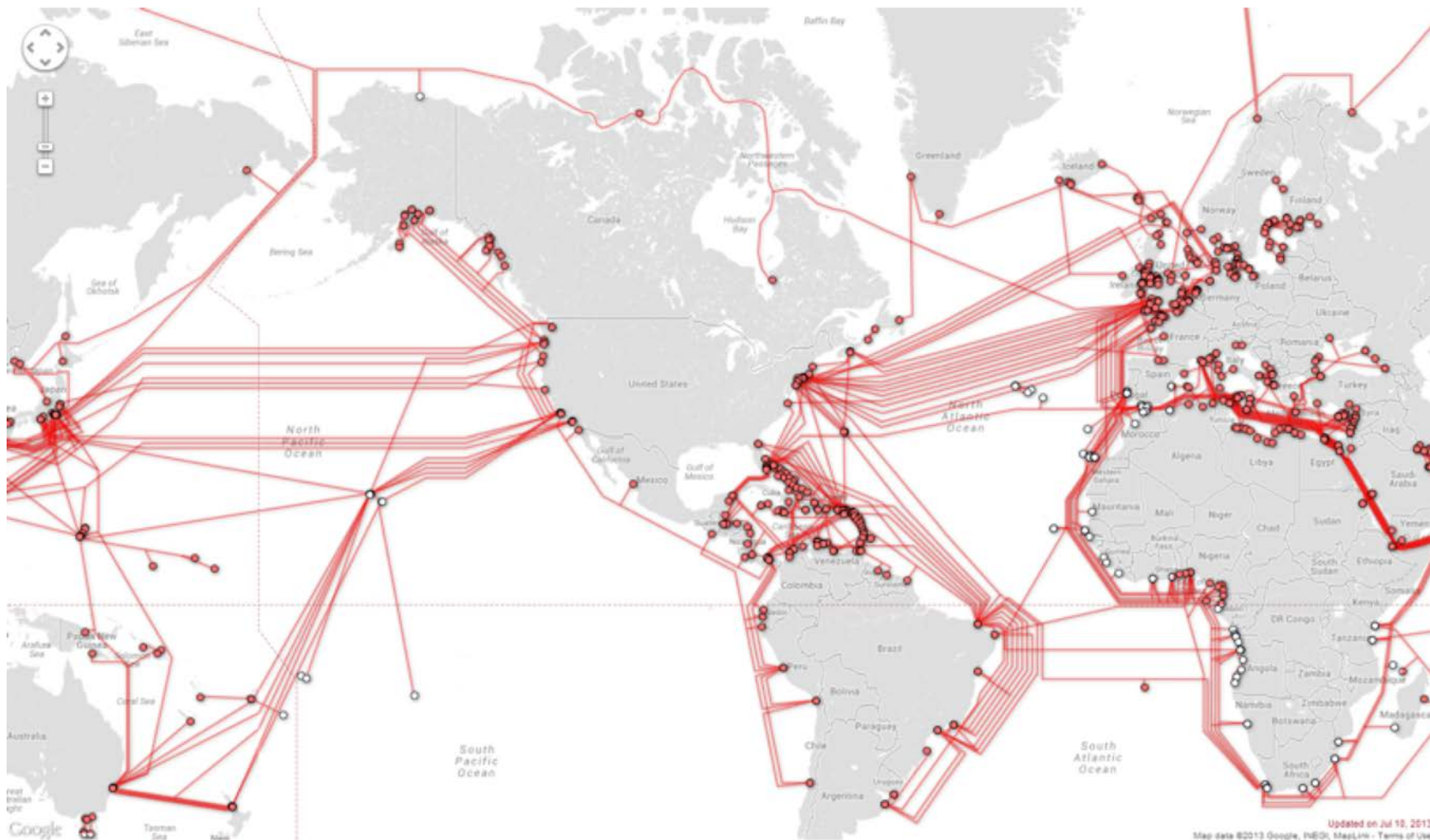
Domain	Annual Price
.CN	\$ 28
.COM.CN	\$ 28
.NET.CN	\$ 28
.ORG.CN	\$ 28
.SH.CN	\$ 28
.BJ.CN	\$ 28

Prices are in U.S. Dollars  
[» Change Currency](#)

[Live Help Online](#)  
[Click here](#)

# How is The Internet Connecting Different Countries?

Watch video: <https://www.youtube.com/watch?v=eTBLIYJSzdc>





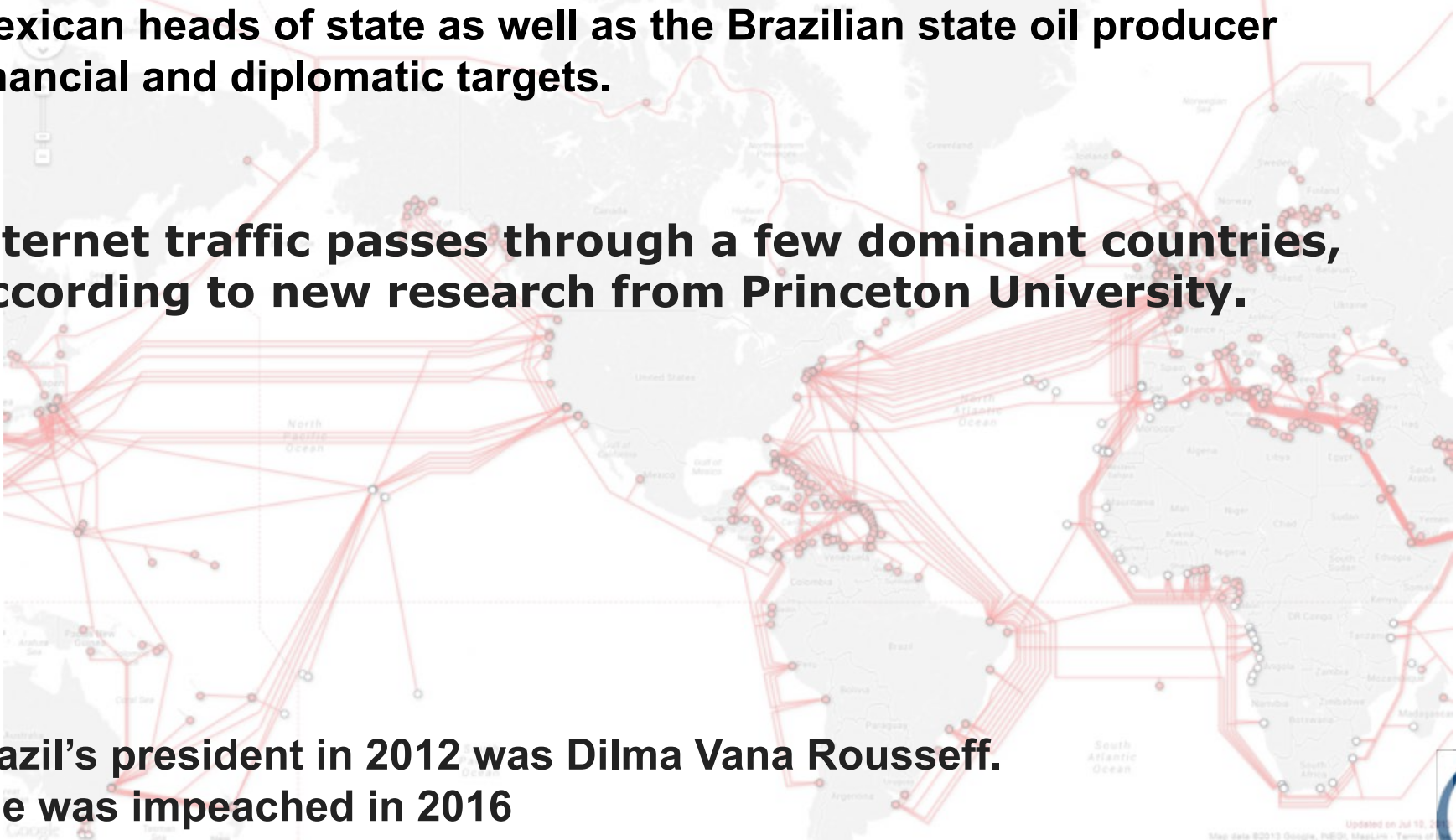
# Where is the Internet Traffic Going?

**U.S. National Security Agency documents from 2012 revealed that the intelligence agency recorded email and telephone calls of Brazilian and Mexican heads of state as well as the Brazilian state oil producer financial and diplomatic targets.**

**internet traffic passes through a few dominant countries, according to new research from Princeton University.**

**Brazil's president in 2012 was Dilma Vana Rousseff.  
She was impeached in 2016**

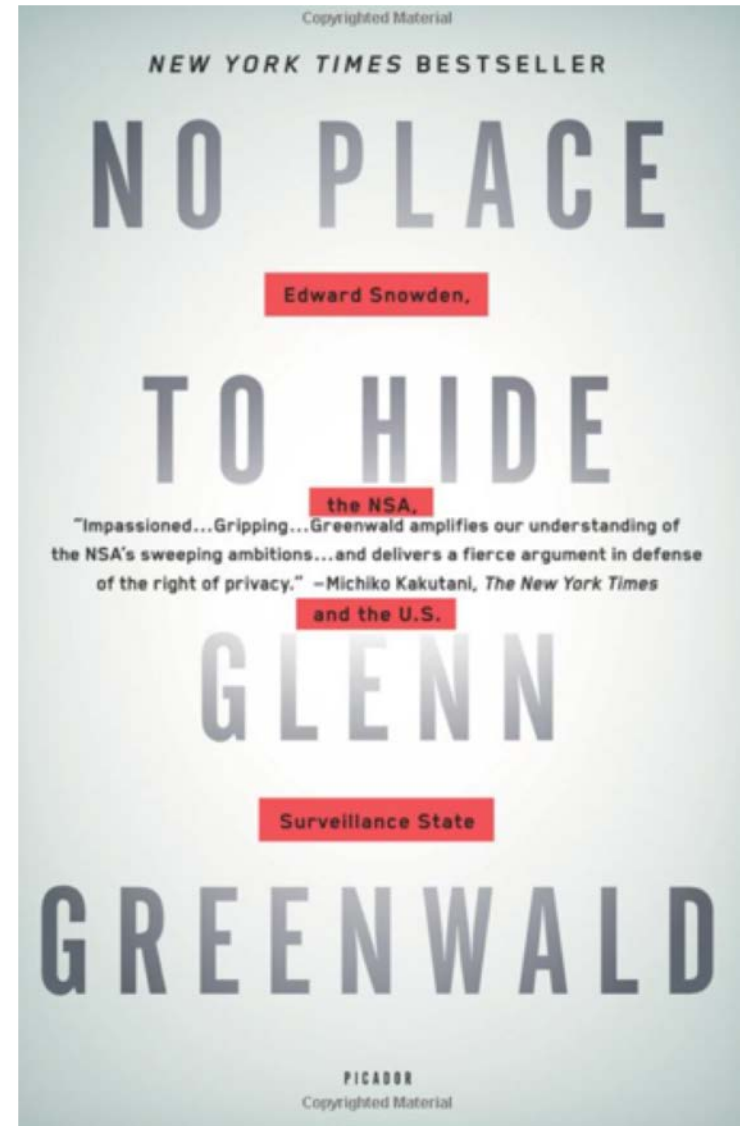
<http://america.aljazeera.com/articles/2013/9/20/brazil-internet-dilmarousseffnsa.html>



Updated on Jul 10, 2013  
Map data ©2013 Google, INEGI, MapLine - Terms of Use

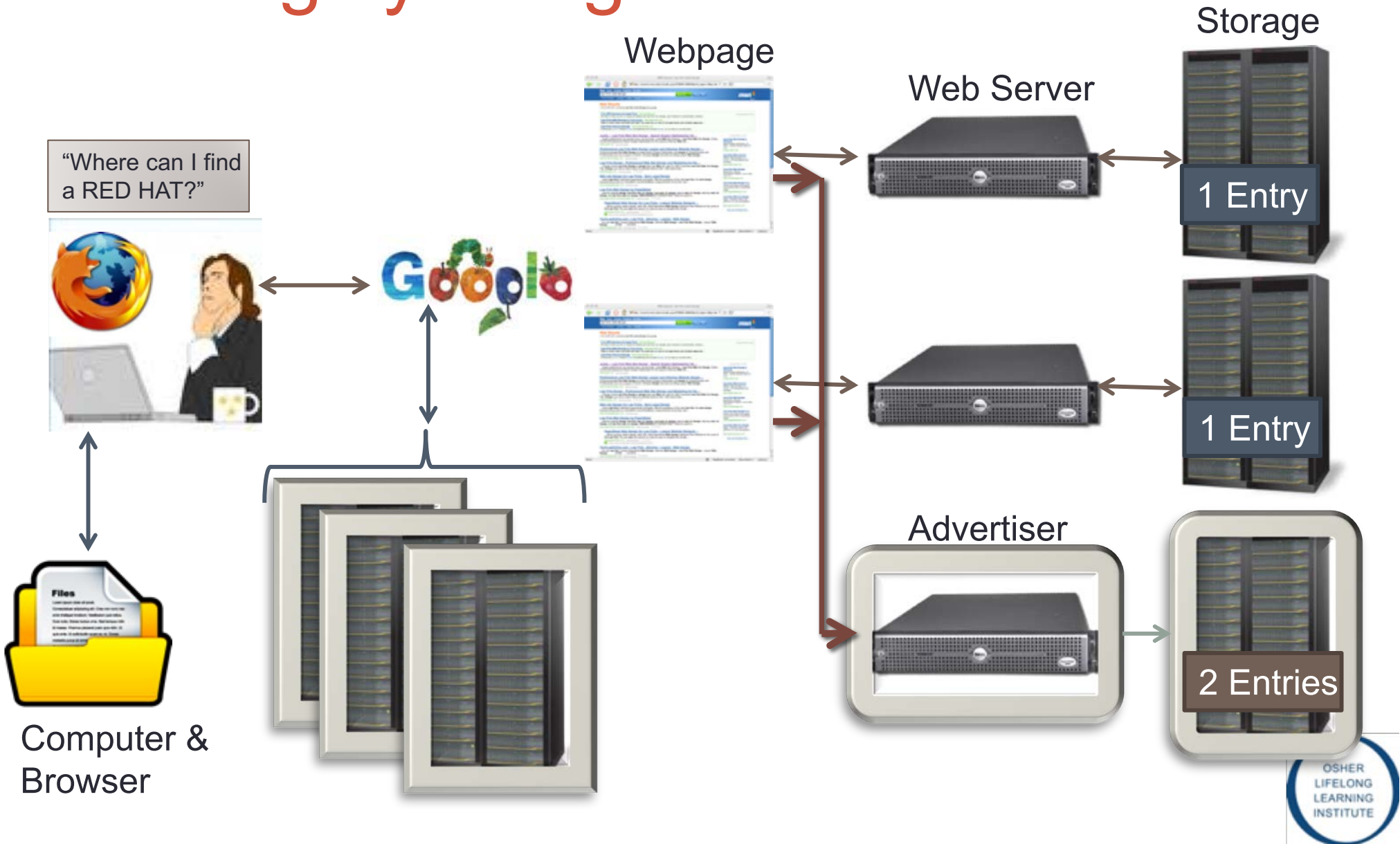
# Book:

**No Place to Hide: Edward Snowden, the NSA, and the U.S. Surveillance State**



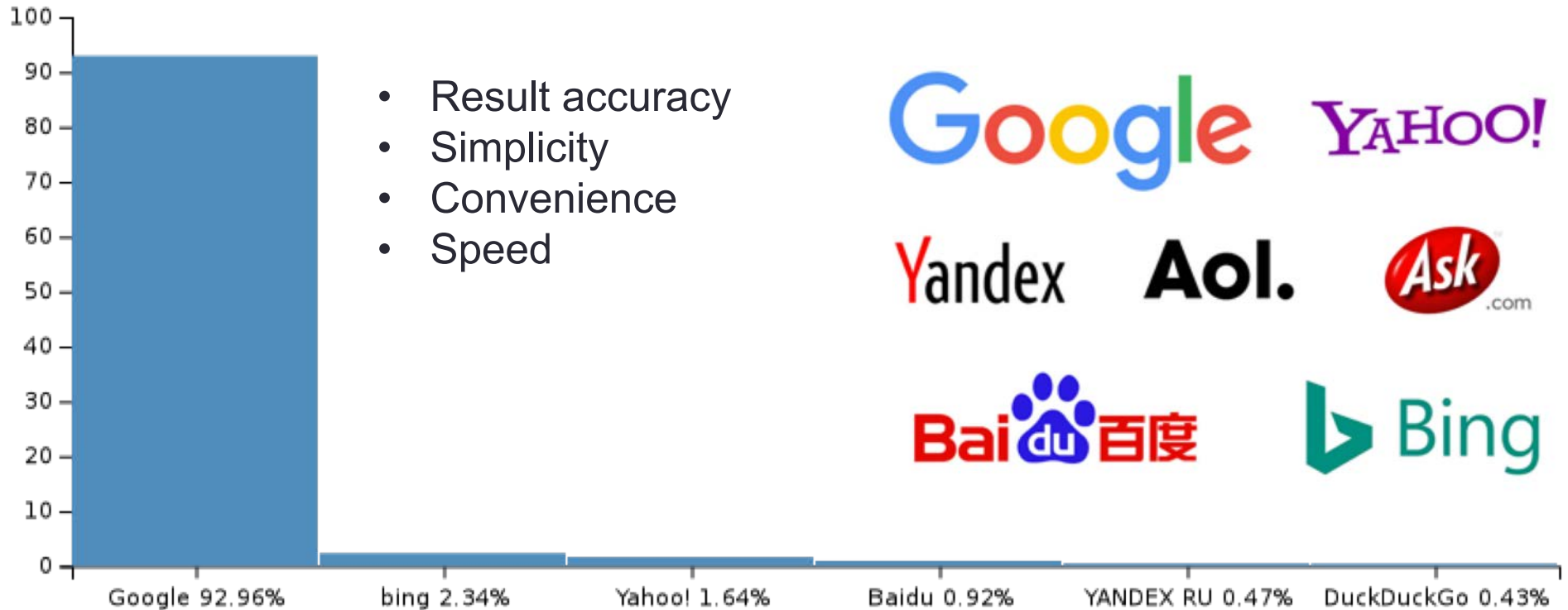


# Tracking by Google!



# Search Engines....

As of September 2019, [Google](https://www.google.com) is the **world's most used search engine**, with a **market share of 92.96 percent**, and the world's most used search engines are:



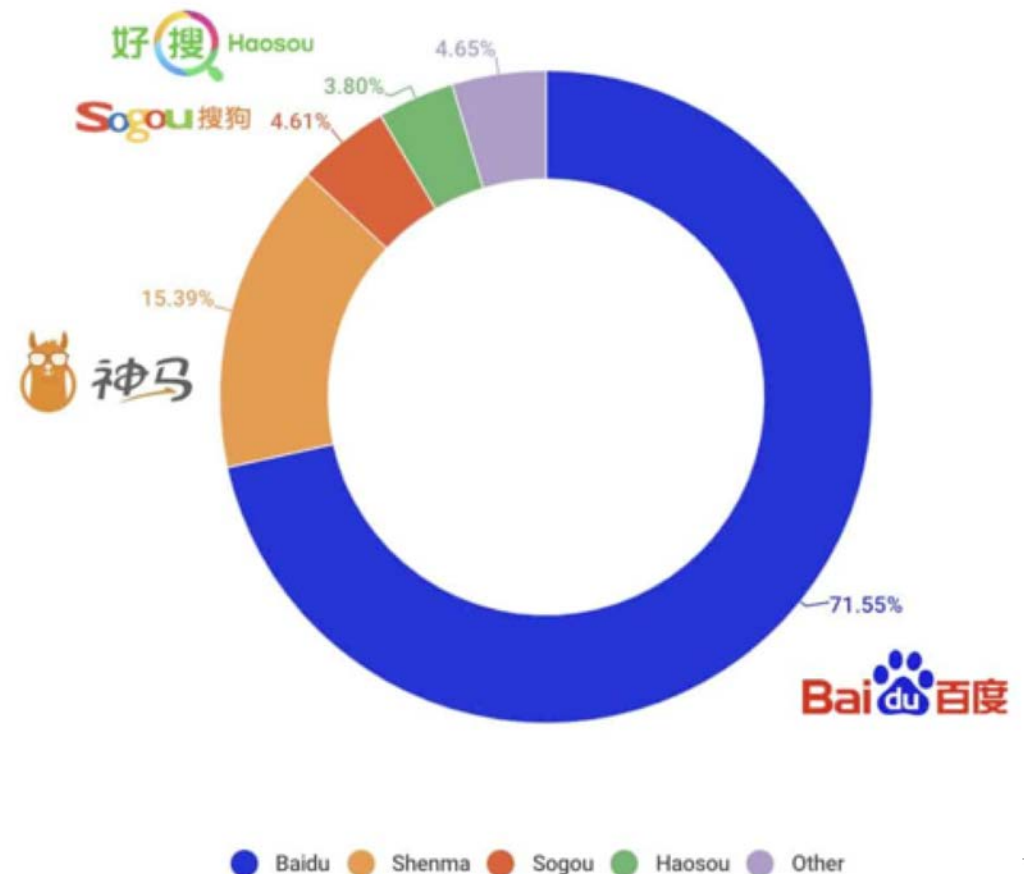
# Search Engines (China)

Baidu has maintained its leading market position with around 70% of market share

China has long blocked major US tech companies, including Facebook and Google, from operating in the country

The Trump administration has had added 28 Chinese organizations to a United States blacklist over concerns about their role in human rights violations, effectively blocking those entities from buying American products.

Search Engine Market Share in China Jan 2019



[List of tech companies banned in China:  
https://www.businessinsider.com/major-us-tech-companies-blocked-from-operating-in-china-2019-5#slack-8](https://www.businessinsider.com/major-us-tech-companies-blocked-from-operating-in-china-2019-5#slack-8)

<https://www.dragonsocial.net/blog/top-chinese-search-engines/>

Source: Statcounter, Dragon



# Search Engines (Iran)

...localizing services and startups!



- 4 main search engines in Iran
- Can handle 700K searches per day plus 200K Q&A.
- 80 percent accurate!

<http://techrasa.com/2016/03/10/4-iranian-search-engines-to-know-about/>

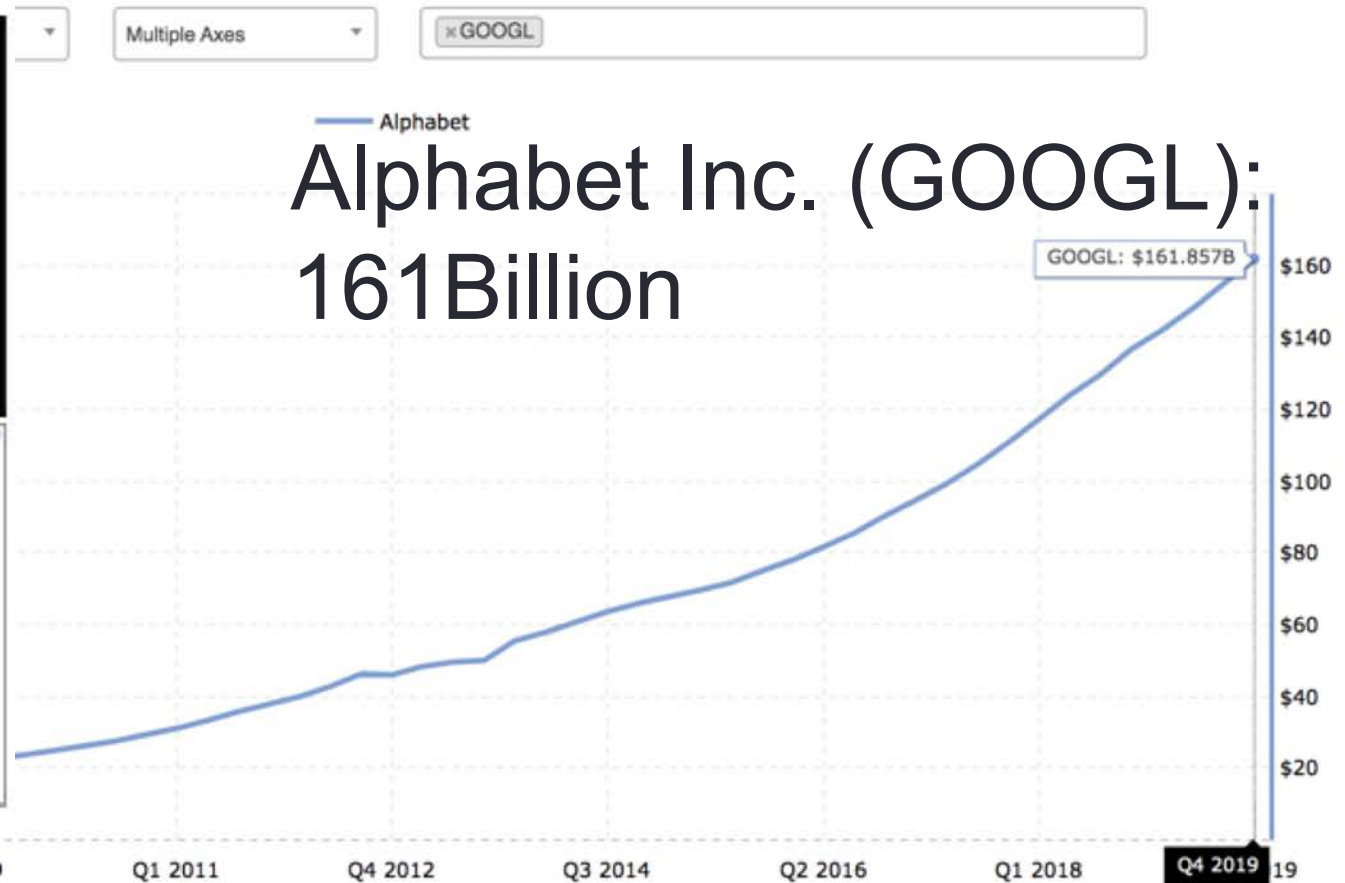
<https://gs.statcounter.com/search-engine-market-share/all/iran/#monthly-201901-202001-bar>



# So what does Google do, actually?

- Google is an advertising company.
  - 88.7% of Google's revenue comes from advertising
- Alphabet, Google's holding company created in 2015, is one of the most valuable companies in the world
  - It has a market value of over \$500 billion.

# A Few Interesting Facts



- A simple change of background color from white to black can save us 750 Mega-Watts-hours of electricity / year
- With 1MW of electricity available, you can light up 2000 household

# What does Google know about you?

- **Who You Are (to some degree)**
- **Where You've Been (totally)**
- **Who Your Friends Are (mostly)**
- **What You Like and Dislike (somewhat)**
- **Your Future Plans (maybe)**
- **Your Online Life (mostly)**



# What does Google know about you?

- **Who You Are (to some degree)**  
Google knows what you look like, what you sound like, your political and religious beliefs, and how healthy you are. The search giant also knows if you have children, or if you have specific dietary restrictions.
- **Where You've Been (totally)**  
Google uses location tracking to know where you live, where you work, and everywhere you've traveled.
- **Who Your Friends Are (mostly)**  
Google knows who you talk to, and what you talk about. It also knows who you've been with, and when.
- **What You Like and Dislike (somewhat)**  
Based on your search queries, Google knows the food, books, movies, videos, and stores that you like or dislike.
- **Your Future Plans (maybe)**  
Your search queries tell a story about what you are thinking about, including your future plans. Have you started searching for information about parenting techniques? If so, Google knows that you are expecting.
- **Your Online Life (mostly)**  
Google also knows all of the websites you've visited, your data that **autofills**, and your bookmarked pages.

# What does Google know about you?

- **Who You Are (to some degree)**

Google knows what you look like, what you sound like, your political and religious beliefs, and how healthy you are. The search giant also knows if you have children, or if you have specific dietary restrictions.

- **What You Do**

Google knows what you do every day.

- **What You Buy**

Google knows what you buy because of its partnership with Amazon.

- **What You Want**

Based on your search history and other data, Google knows what you want.

- **Your Future**

You know your future plans.

Have you started searching for information about parenting techniques? If so, Google knows that you are expecting.

- **Your Online Life (mostly)**

Google also knows all of the websites you've visited, your data that autofills, and your bookmarked pages.

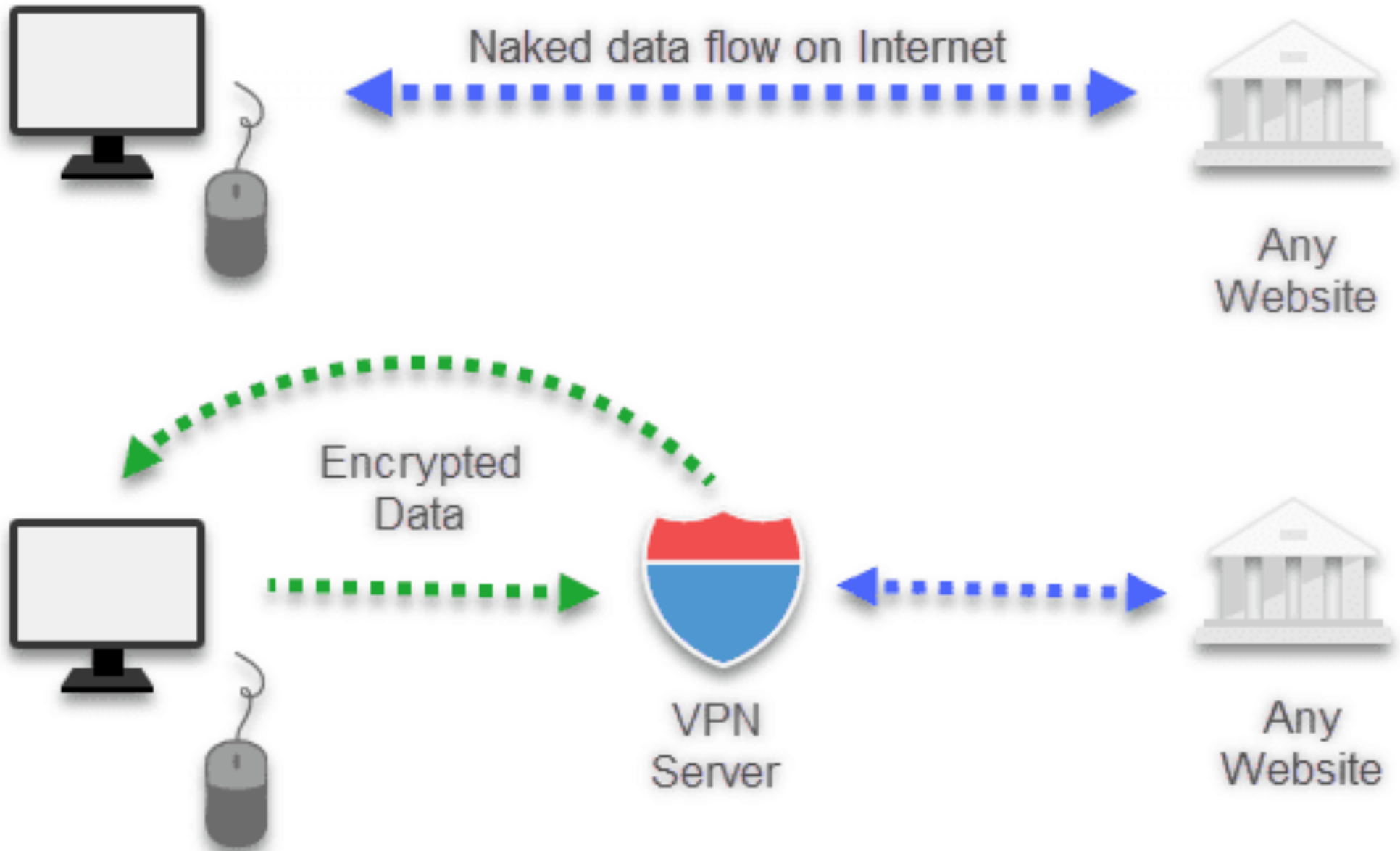
The Proof is in your customized news, searches, and autofills!

# Interested to decrease the amount of data that Google has on you?

- Adjusting privacy settings
- Using private browsing
- Using a different browser for search
- Turning of your location settings
- Deleting your Google accounts
- **Using a VPN ←**

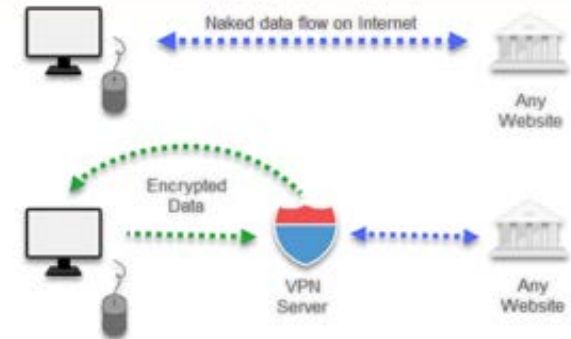
# How a VPN works?

Virtual Private Network



# What is VPN?

- Virtual Private Network
- It secures your computer's internet connection
  - Guarantees that all of the data you're sending and receiving is encrypted
- Benefits:
  - Enhanced security. ...
  - Online anonymity.
  - Unblock websites & bypass filters.
  - Change the IP address.
  - Reduce costs.
- List of some VPNs: <https://www.wizcase.com/best-vpn-guide/>



# Turkish people turn to VPNs as Istanbul protests spread (2013)

- Started over redeveloping a park in Istanbul!
- Turkish people turn to VPNs as Istanbul protests spread
- AnchorFree has reported a 1000% growth in the local use of its free virtual private network (VPN) **Hotspot Shield**
- Erdogan condemned social media as "the worst menace to society."



# Are VPNs Totally Secure?

- In 2017 AnchorFree, a major VPN provider listed government demands for user data by country, and the legal mechanism used
- 81 formal legal requests received by the company - 63 came from the US government

**The US government keeps subpoenaing VPN companies for customer information**



# How Does Encryption Work?

- The key to VPN is creating an encrypted channel
- So, what is encryption?
- Watch the video! (6 min)

# Dark Net (Watch Video)



# What is Cryptocurrency or Bitcoin!

...Let's remove the bank as the central organization!

- Watch the Video!