

# The IT Industry and the 2022 Market

William Favre Slater, III  
PMP, CISSP, SSCP, CISA, CDCP. ITIL  
October 2022

# Six Numbers

- 16,436
- 26,500
- 30,000
- 2,300,000,000
- 3,000,000,000
- 168

# Career Planning 1960 - 2000



It used to be pretty simple...

# Challenges

For All  
IT  
Professionals  
In 2022



October 31, 2022

William Fave Slater, III

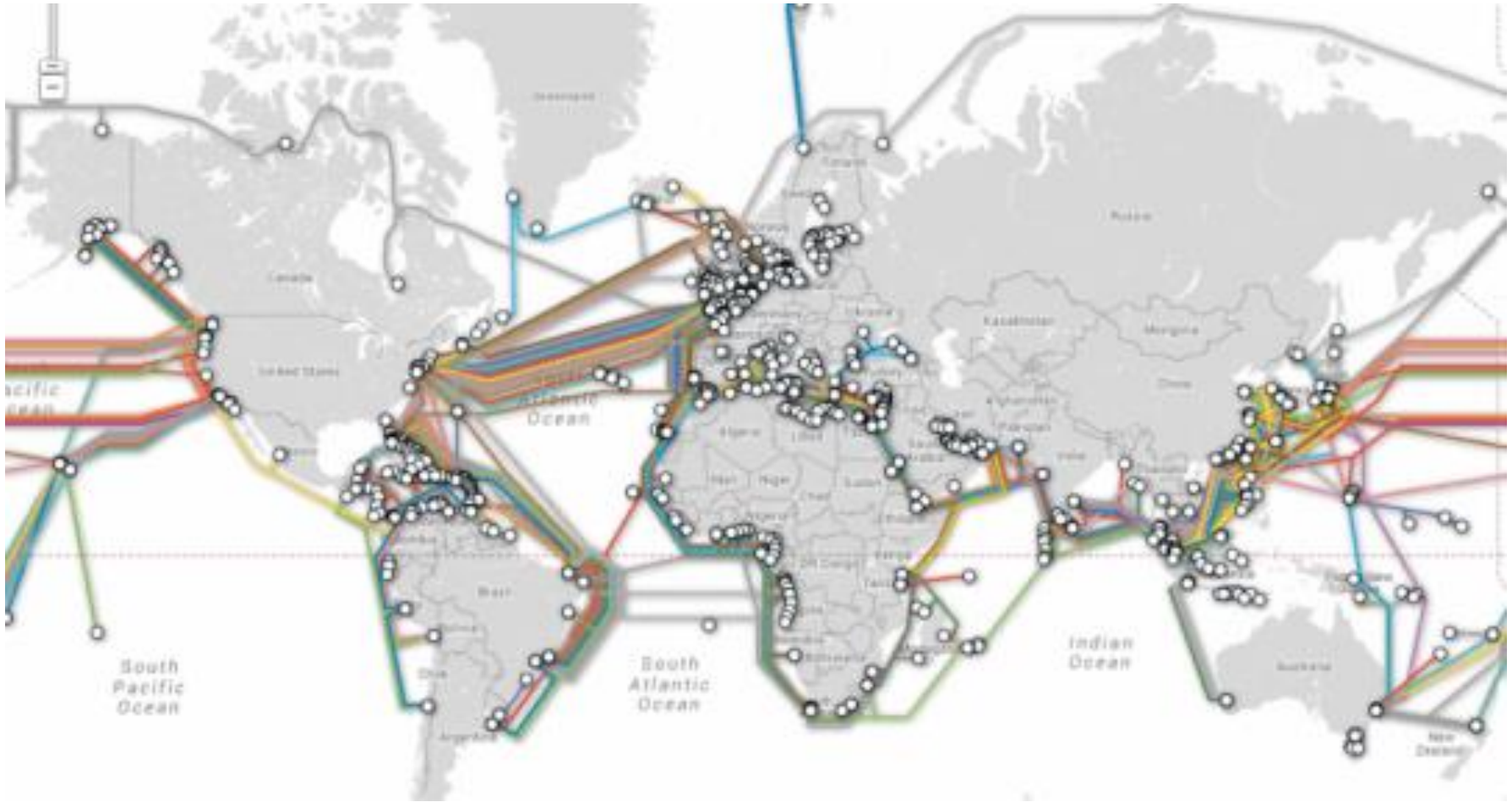
# ***THE INTERNET IN 2022***

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# The Internet is a Huge and Global Place

# Every Continent and Country Is Connected 24 x 7

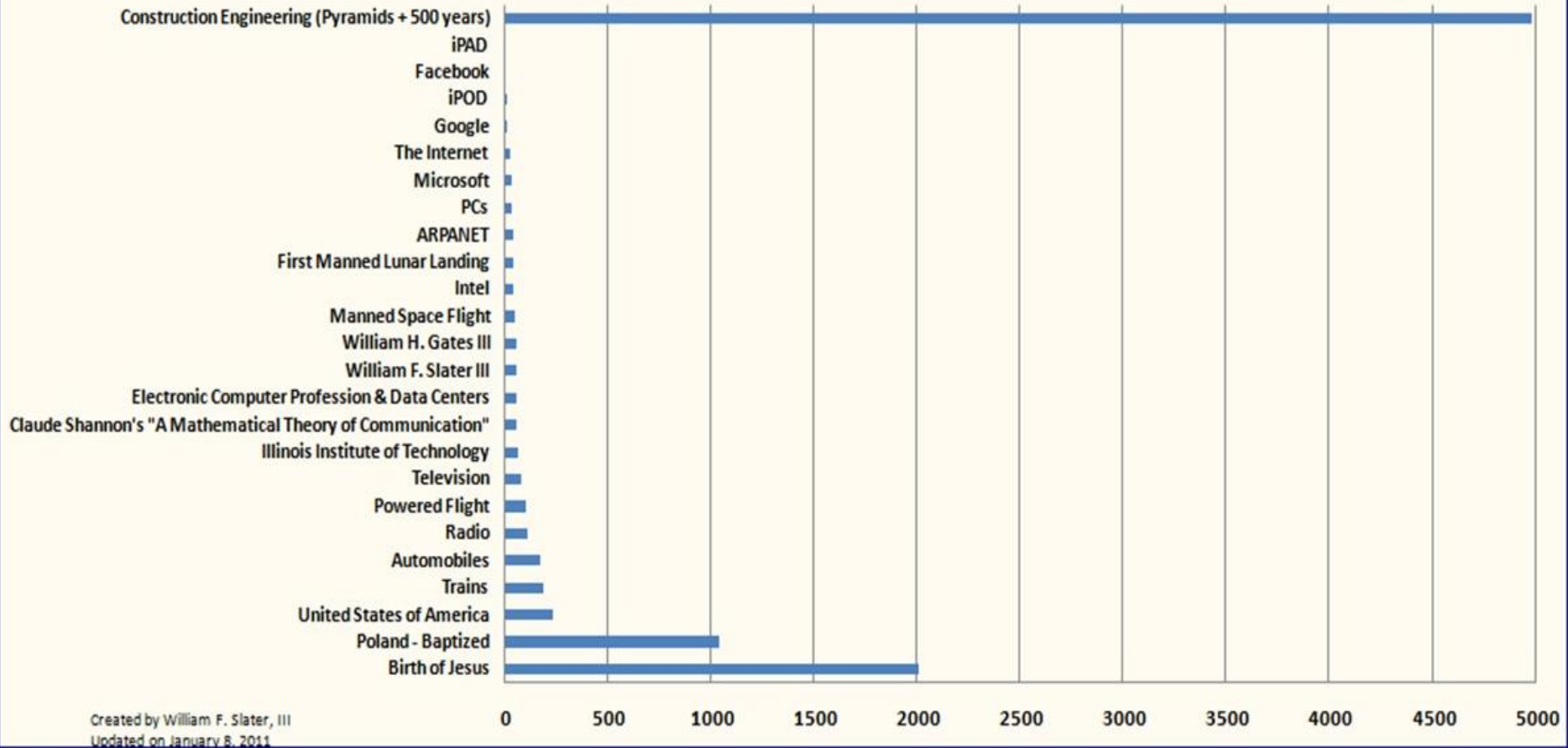


Notes: 1) Satellite connections are omitted here. 2) Due to totalitarian policies, the governments of 23 countries did temporarily shut down the Internet for their Citizens this year.

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# Relatively Speaking

Putting Things into Even Larger Perspective - Important Milestones in Technology

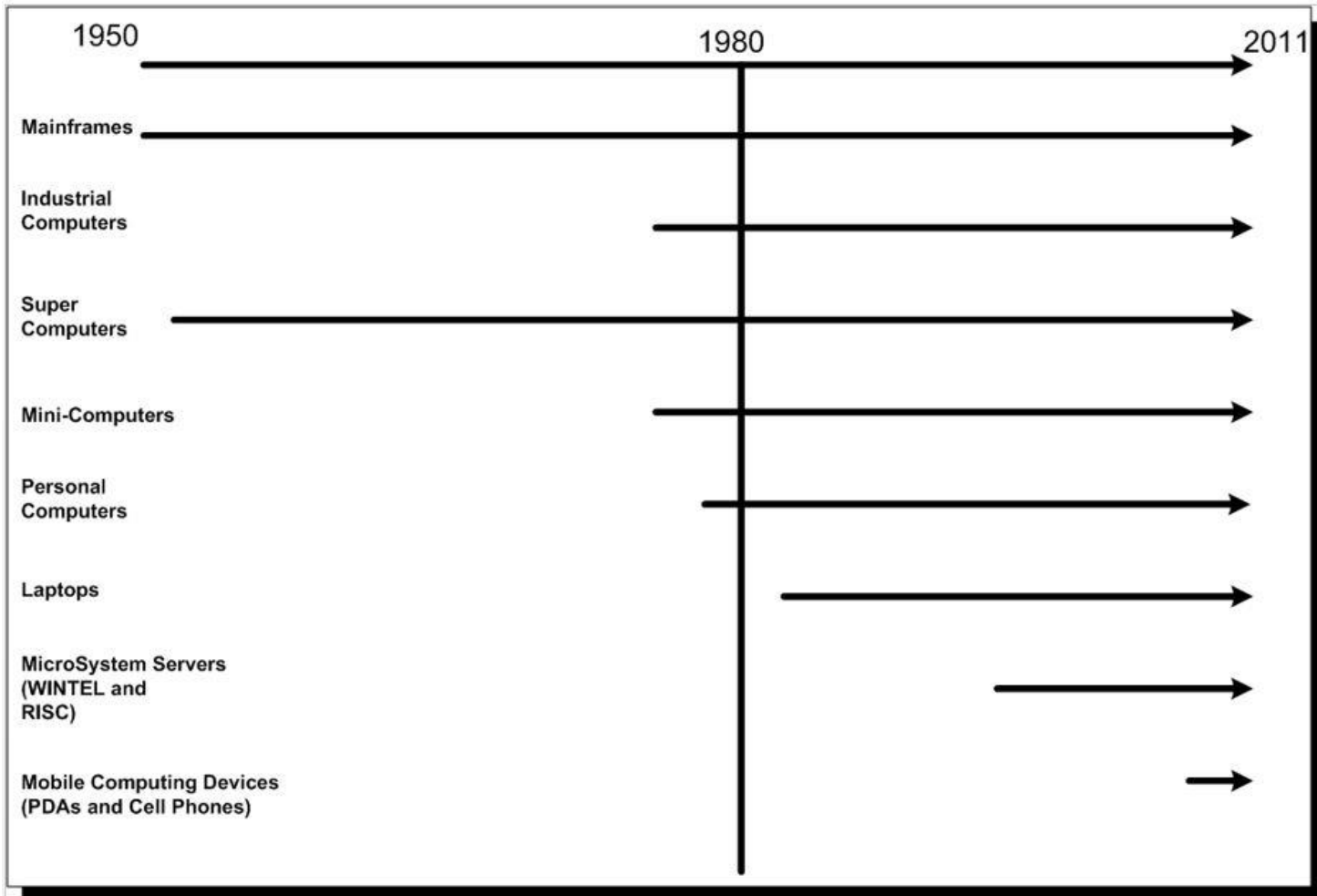


Created by William F. Slater, III  
Updated on January 8, 2011





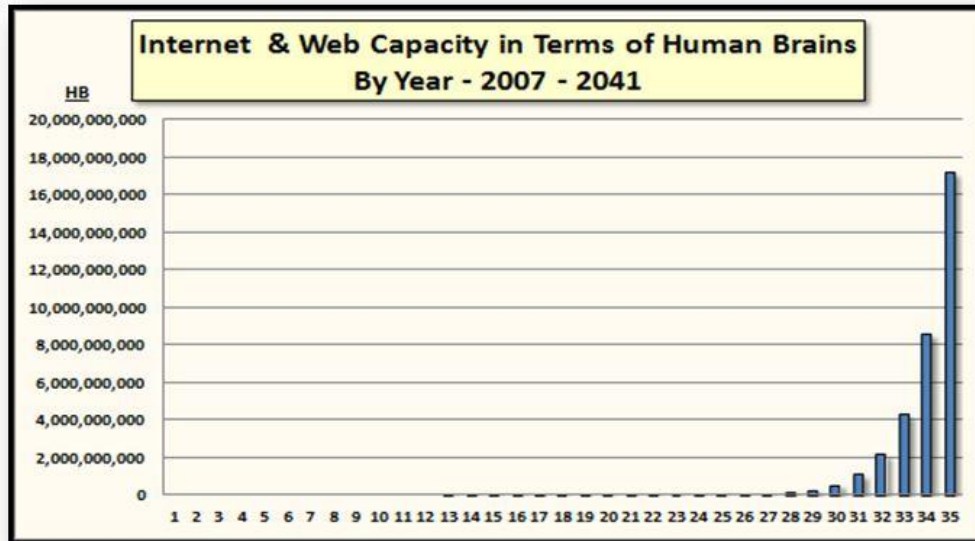
# Relatively Speaking



**Evolution of Modern Computing Platforms**

# Relatively Speaking

## Capacity of the Internet and the Web

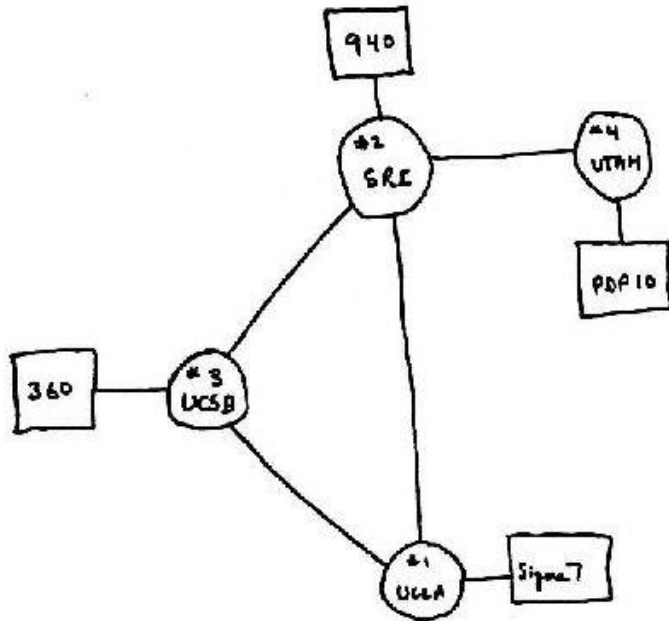


Count	Year	HB
1	2007	1
2	2008	2
3	2009	4
4	2010	8
5	2011	16
6	2012	32
7	2013	64
8	2014	128
9	2015	256
10	2016	512
11	2017	1,024
12	2018	2,048
13	2019	4,096
14	2020	8,192
15	2021	16,384
16	2022	32,768
17	2023	65,536
18	2024	131,072
19	2025	262,144
20	2026	524,288
21	2027	1,048,576
22	2028	2,097,152
23	2029	4,194,304
24	2030	8,388,608
25	2031	16,777,216
26	2032	33,554,432
27	2033	67,108,864
28	2034	134,217,728
29	2035	268,435,456
30	2036	536,870,912
31	2037	1,073,741,824
32	2038	2,147,483,648
33	2039	4,294,967,296
34	2040	8,589,934,592
35	2041	17,179,869,184

# In the Beginning...

## ARPANET September 1969

From Computer Desktop Encyclopedia  
Reproduced with permission.  
© 2000 The Computer Museum History Center



### Humble Beginnings

Scrawled on this paper in 1969 were the first four nodes of the ARPANET. Little did they realize these four nodes would grow to millions. (Image courtesy of The Computer History Museum, [www.computerhistory.org](http://www.computerhistory.org))



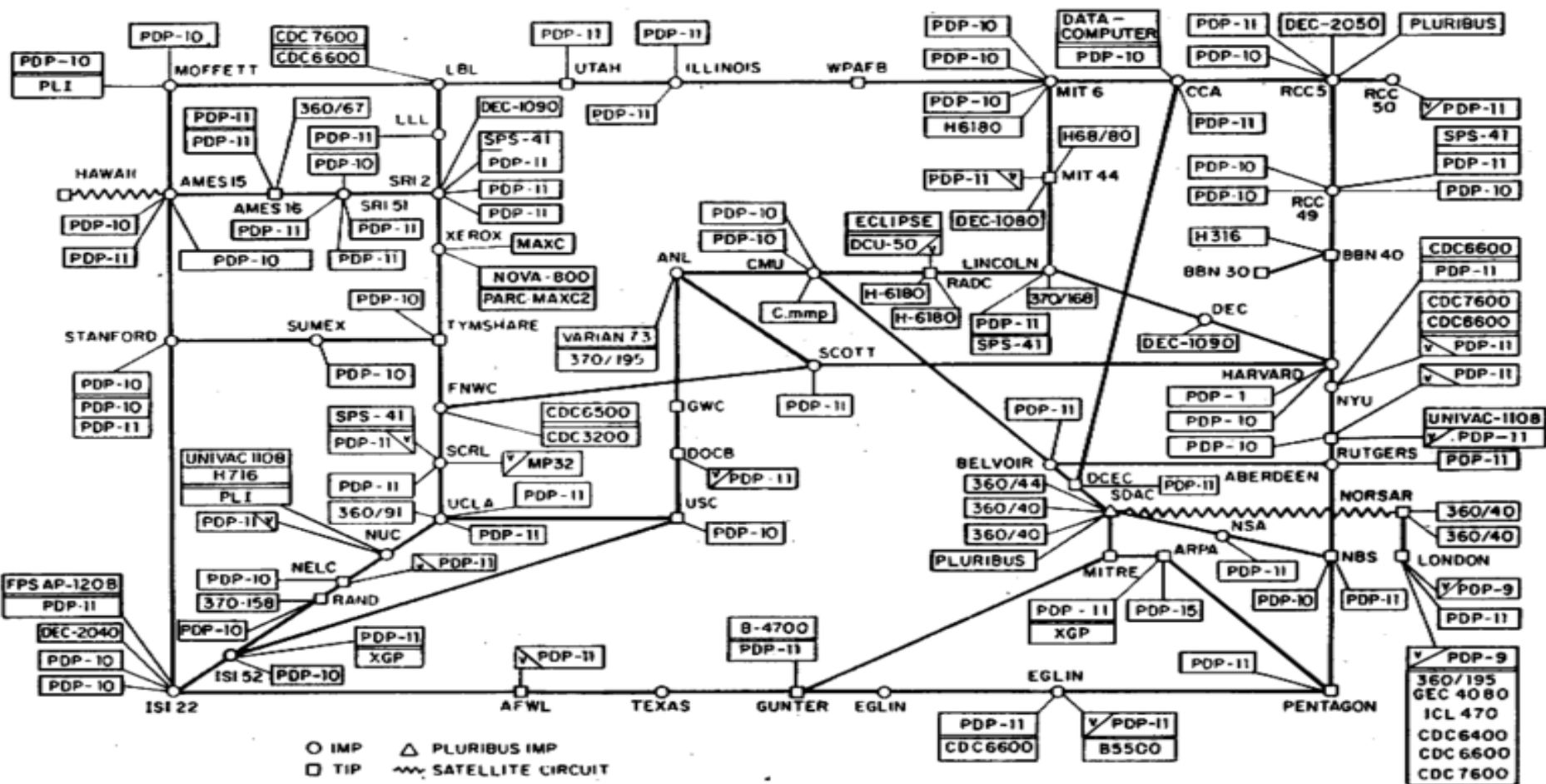
**The Founding Fathers: Leonard Kleinrock, Paul Baran, and Larry Roberts**

They were present at the creation. Baran, at the Rand Corporation in the late 1950s, conjured the idea of "packet switching." Roberts, chief computer scientist at the Pentagon's Advanced Research Projects Agency, oversaw the creation of the Arpanet in the late 1960s. In Kleinrock's laboratory at U.C.L.A., in 1969, this new digital way of transmitting data—precursor of today's Internet—came to life.

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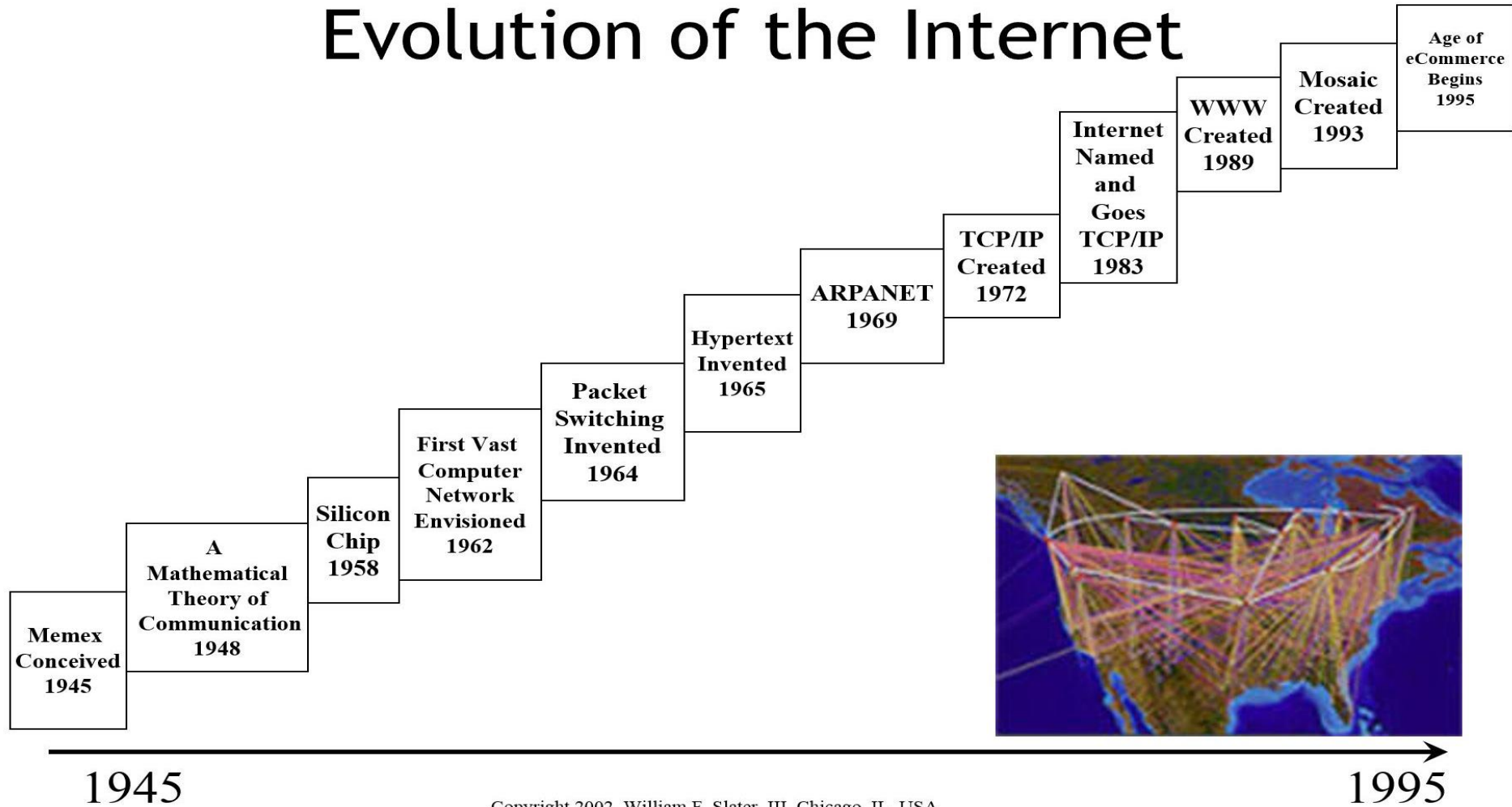
# ARPANET, March 1977

ARPANET LOGICAL MAP, MARCH 1977



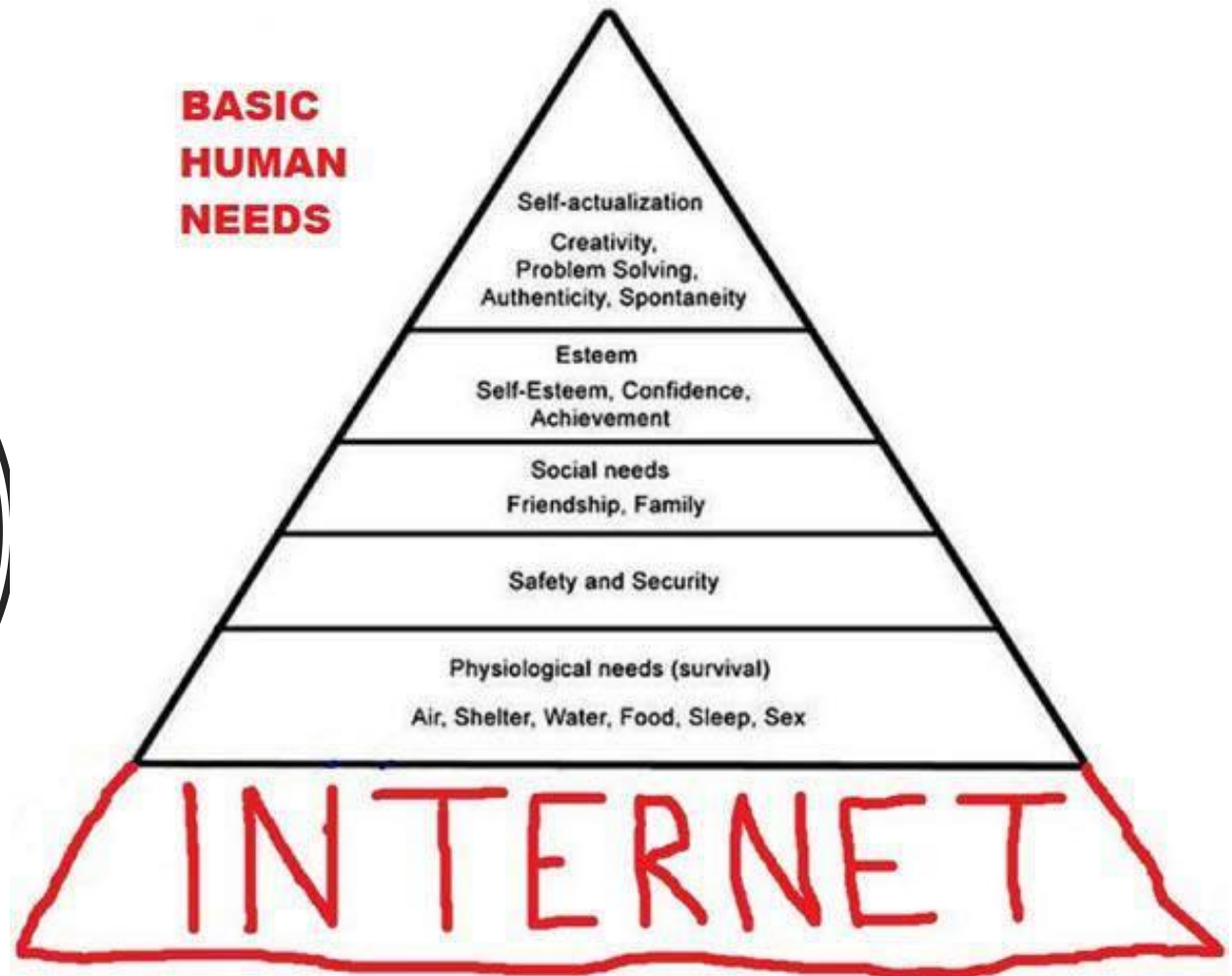
# Innovations that led to the Modern Internet

## A Brief Summary of the Evolution of the Internet

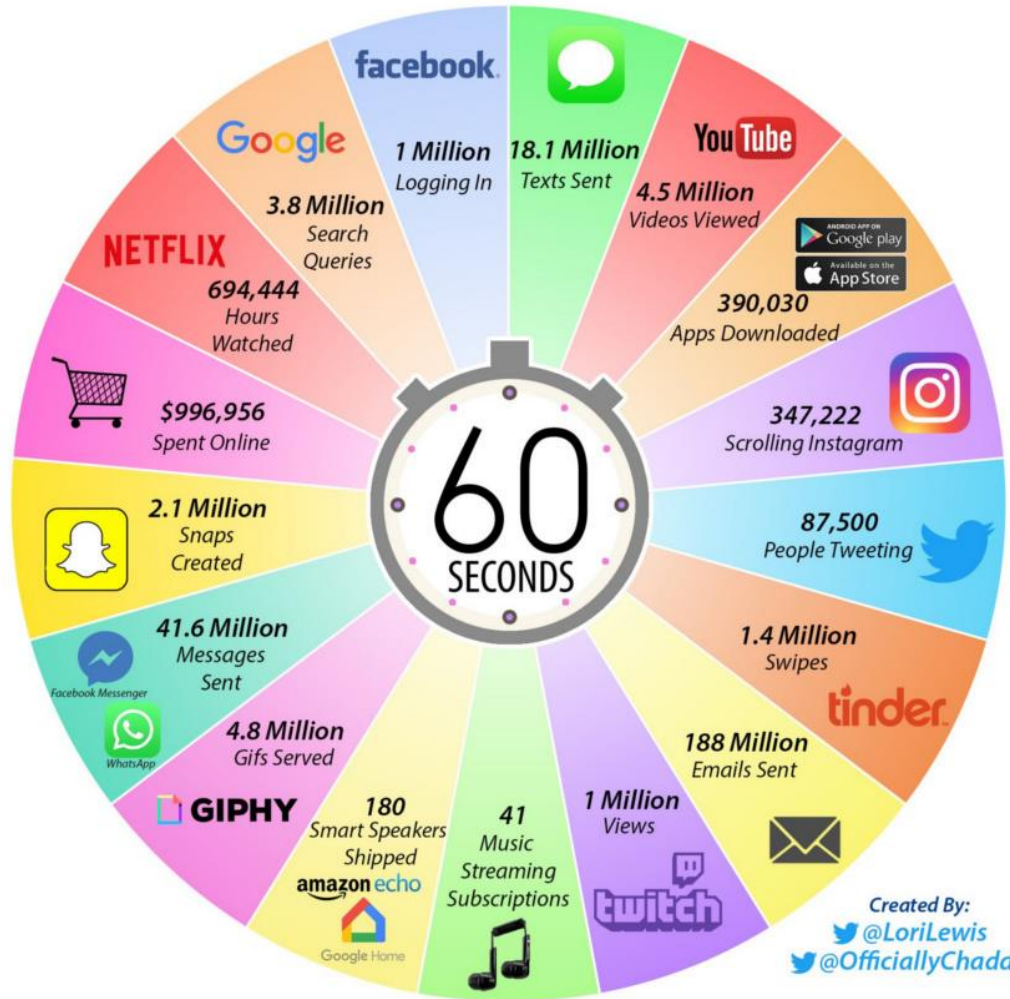


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Modern  
Version of  
Maslow's  
Hierarchy of  
Needs



# 2019 *This Is What Happens In An Internet Minute*



2019 - What Happens on The Internet in 60 Seconds?

Created By:  
 @LoriLewis  
 @OfficiallyChadd



# 2020 *This Is What Happens In An* Internet Minute



Created By:  
 @LoriLewis  
 @OfficiallyChadd

2020 - What Happens on The Internet in 60 Seconds?

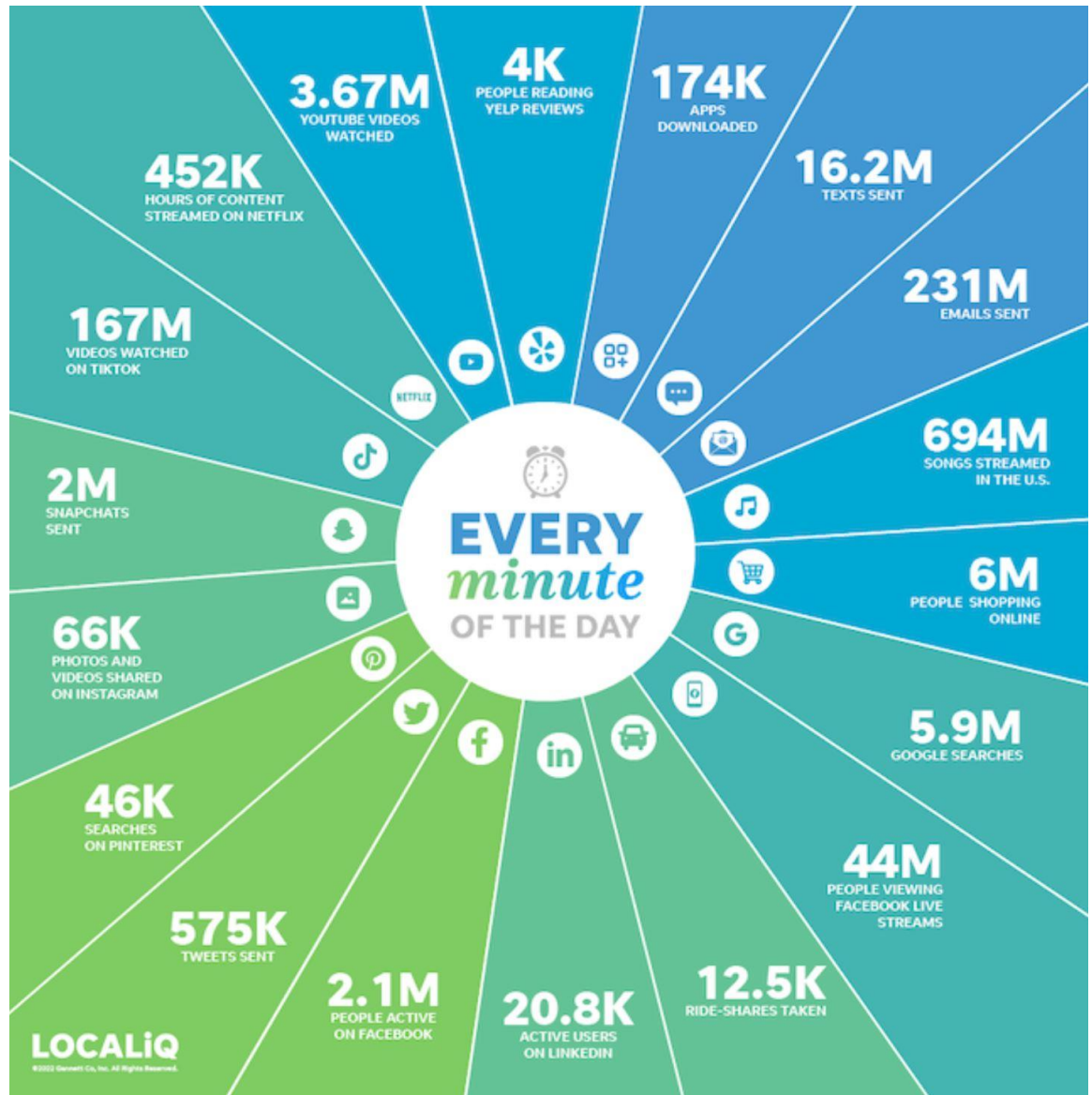




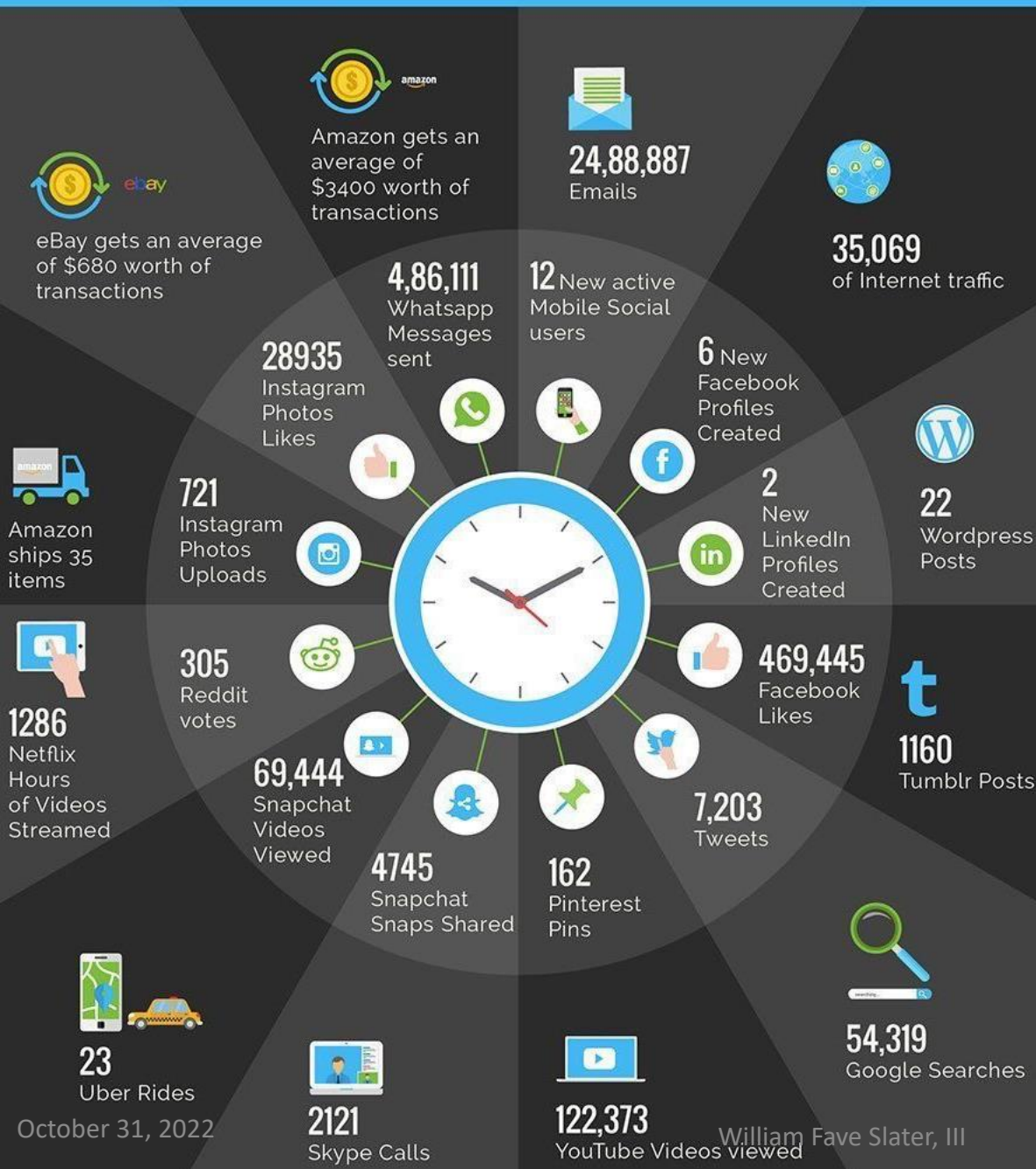
# 2021 - What Happens on The Internet in 60 Seconds?



2022 - What Happens on The Internet in 60 Seconds?



# WHAT HAPPENS IN 1 SECOND OF THE INTERNET



# What Happens on The Internet in One Second?

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# Digital Around the World - 2020

JUL  
2020

## OVERVIEW OF GLOBAL INTERNET USE

A SNAPSHOT OF INTERNET USE AROUND THE WORLD

TOTAL NUMBER  
OF GLOBAL  
INTERNET USERS



we  
are  
social

**4.57**  
BILLION

INTERNET USERS AS A  
PERCENTAGE OF TOTAL  
GLOBAL POPULATION



we  
are  
social

**59%**

ANNUAL GROWTH  
IN THE NUMBER OF  
GLOBAL INTERNET USERS



KEPIOS

**+8.2%**  
**+346 MILLION**

AVERAGE AMOUNT OF TIME PER  
DAY SPENT USING THE INTERNET  
BY EACH INTERNET USER



**6H 42M**

20

**SOURCES:** ITU; GLOBALWEBINDEX; GSMA INTELLIGENCE; EUROSTAT; SOCIAL MEDIA PLATFORMS' SELF-SERVICE ADVERTISING TOOLS; APJII; CNNIC; UNITED NATIONS (ALL LATEST AVAILABLE DATA IN JULY 2020). TIME SPENT DATA FROM GLOBALWEBINDEX (Q1 2020), BASED ON A BROAD SURVEY OF INTERNET USERS AGED 16 TO 64. SEE [GLOBALWEBINDEX.COM](https://www.globalwebindex.com) FOR MORE DETAILS.  
**COMPARABILITY ADVISORY:** SOURCE CHANGES.

we  
are  
social

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# Digital Around the World - 2021

APR  
2021

## OVERVIEW OF GLOBAL INTERNET USE

A SNAPSHOT OF INTERNET USE AROUND THE WORLD

 INTERNET USER NUMBERS NO LONGER INCLUDE DATA SOURCED FROM SOCIAL MEDIA PLATFORMS, SO VALUES ARE **NOT COMPARABLE** WITH PREVIOUS REPORTS

TOTAL NUMBER  
OF GLOBAL  
INTERNET USERS



**4.72**  
BILLION

INTERNET USERS AS A  
PERCENTAGE OF TOTAL  
GLOBAL POPULATION



**60.1%**

ANNUAL CHANGE  
IN THE NUMBER OF  
GLOBAL INTERNET USERS



**+7.6%**  
**+332 MILLION**

AVERAGE DAILY TIME SPENT  
USING THE INTERNET BY  
EACH INTERNET USER



**6H 56M**

PERCENTAGE OF USERS  
ACCESSING THE INTERNET  
VIA MOBILE DEVICES



**92.8%**

12

**SOURCES:** KEPIOS (APR 2021) BASED ON EXTRAPOLATIONS OF DATA PUBLISHED BY: THE ITU; LOCAL GOVERNMENT BODIES; GWI; GSMA INTELLIGENCE; EUROSTAT; APJII; CNNIC; THE UNITED NATIONS. DATA FOR TIME SPENT AND MOBILE INTERNET SHARE FROM GWI (Q4 2020). SEE [GLOBALWEBINDEX.COM](https://www.globalwebindex.com) FOR MORE DETAILS. **COMPARABILITY ADVISORY:** SOURCE AND BASE CHANGES. INTERNET USER NUMBERS NO LONGER INCLUDE DATA SOURCED FROM SOCIAL MEDIA PLATFORMS. FIGURES ARE **NOT COMPARABLE** WITH DATA PUBLISHED IN PREVIOUS REPORTS.

**we  
are  
social**

 **Hootsuite®**

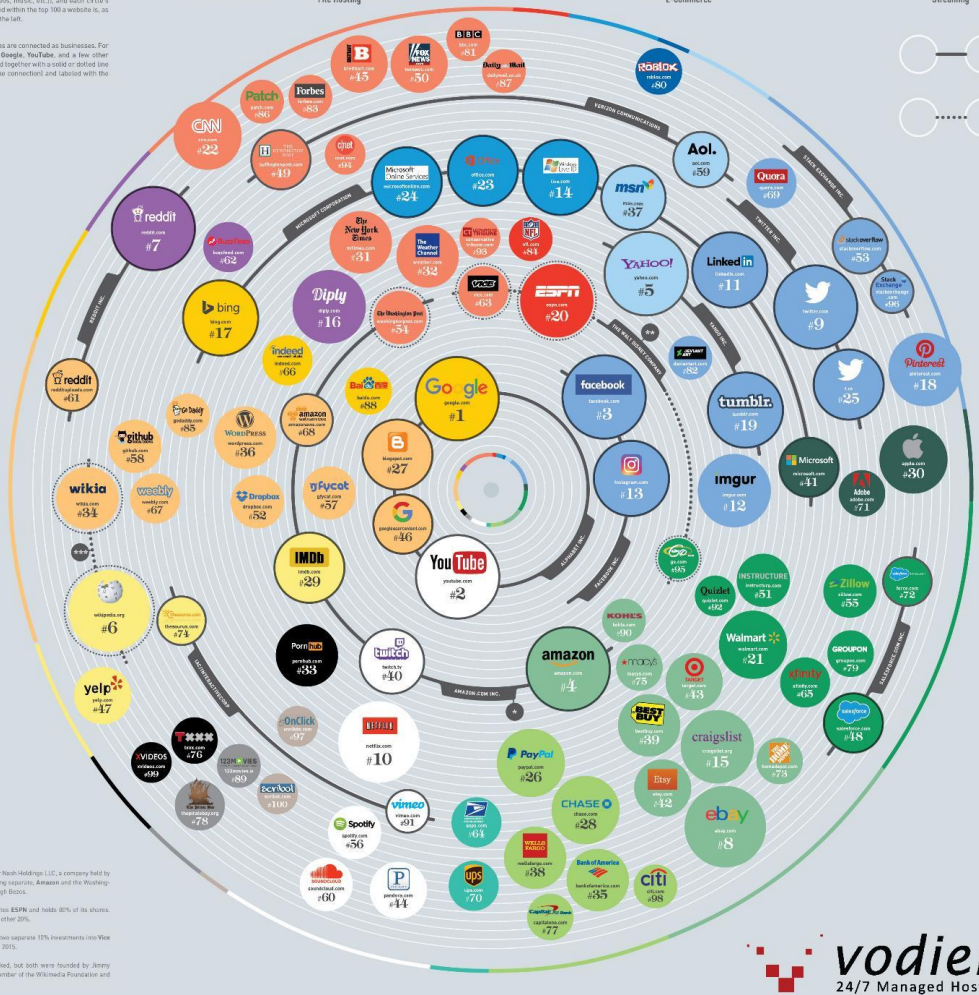
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# The 100 Biggest Websites on the Internet

## 100 WEBSITES that Rule the Internet

These are the top 100 websites, ranked by traffic, in the United States, according to data from Alexa. They are color-coded by type: Banking sites, Streaming (videos, music, etc.), and each site's size indicates how highly ranked within the top 100 a website is, as you can see by the diagram to the left.

You can also see which websites are connected as businesses. For instance, Alphabet Inc. owns Google, YouTube, and a few other sites. Those websites are linked together with a solid or dotted line (depending on the nature of the connection) and labeled with the organization they fall under.



- The Washington Post is owned by News-Holdings LLC, a company held by Amazon's Jeff Bezos. Despite being separate, Amazon and the Washington Post share a connection through blogs.
- The Walt Disney Company operates ESPN and holds 80% of its shares. The Hearst Corporation holds the other 20%.
- The Walt Disney Company made two separate 10% investments into Web Media, one in 2014 and another in 2015.
- Wikipedia and Wikia are not linked, but both were founded by Jimmy Wales. Wales remains a board member of the Wikimedia Foundation and president of Wikia Inc.

Sources: <http://www.alexametrics.com/topsites/summary/2015/> | <https://www.wikipedia.org/>



# How People Use the Internet

Internet users say they spend about 6.5 hours a day online. What do they do there?

## They have fun:

Netflix has  
**125m**  
subscribers.  
**NETFLIX**  
about 55%  
of whom are  
international.

2018 data

About  
**1m**  
people  
**twitch**  
are always  
watching  
Twitch.



## They send information and updates to friends and colleagues:



**269bn**  
emails are  
sent and  
received  
each day.

## They run errands:



According to  
one survey  
**42%**  
of global  
respondents say they  
paid a bill using their  
mobile device.

## They pursue education:



Online education  
is worth  
**\$165bn**  
and is projected  
to reach  
**\$275bn**  
by 2022.

## They keep in touch with old friends and make new ones:



**2.2bn**  
people  
are monthly  
active users  
on Facebook.

On average, users say they spend about 6.5 hours a day on the internet. Here's what they

Source: Business Insider; Global Web Index; Nielsen; Recode; Reuters; Statista.

World101

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# *CYBERSECURITY*



ACFTI

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# SECURITY – WHAT IS IT EXACTLY?

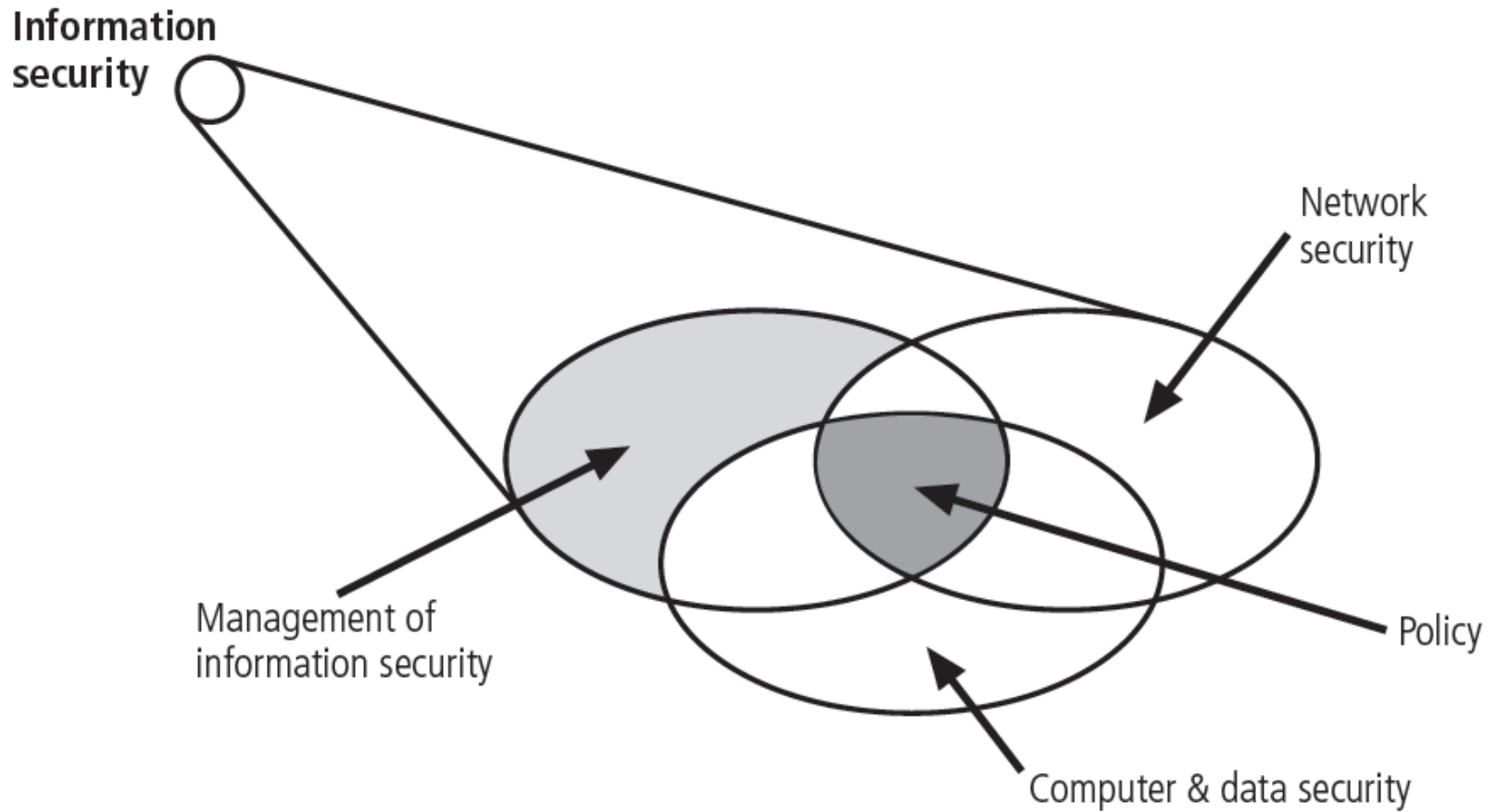
# What Is Security?

- Definitions
  - Security is defined as “the quality or state of being secure—to be free from danger”
  - Security is often achieved by means of several strategies undertaken simultaneously or used in combination with one another
- Specialized areas of security
  - Physical security, operations security, communications security, and network security

# What Is Security? (cont'd.)

- Information security
  - The protection of information and its critical elements (confidentiality, integrity and availability), including the systems and hardware that use, store, and transmit that information
    - Through the application of policy, technology, and training and awareness programs
- Policy, training and awareness programs and technology are vital concepts

# CNSS Security Model



# Key Concepts of Information Security

- Confidentiality
  - The characteristic of information whereby only those with sufficient privileges may access certain information
- Measures used to protect confidentiality
  - Information classification
  - Secure document storage
  - Application of general security policies
  - Education of information custodians and end users

# Key Concepts of Information Security (cont'd.)

- Integrity
  - The quality or state of being whole, complete, and uncorrupted
- Information integrity is threatened
  - If exposed to corruption, damage, destruction, or other disruption of its authentic state
- Corruption can occur while information is being compiled, stored, or transmitted

# Key Concepts of Information Security (cont'd.)

- Availability
  - The characteristic of information that enables user access to information in a required format, without interference or obstruction
  - A user in this definition may be either a person or another computer system
  - Availability does not imply that the information is accessible to any user
    - Implies availability to authorized users

# Key Concepts of Information Security (cont'd.)

- Privacy
  - Information collected, used, and stored by an organization is to be used only for the purposes stated to the data owner at the time it was collected
  - Privacy as a characteristic of information does not signify freedom from observation
    - Means that information will be used only in ways known to the person providing it



# Key Concepts of Information Security (cont'd.)

- Identification
  - An information system possesses the characteristic of identification when it is able to recognize individual users
  - Identification and authentication are essential to establishing the level of access or authorization that an individual is granted
- Authentication
  - Occurs when a control proves that a user possesses the identity that he or she claims

# Key Concepts of Information Security (cont'd.)

- Authorization
  - Assures that the user has been specifically and explicitly authorized by the proper authority to access, update, or delete the contents of an information asset
  - User may be a person or a computer
  - Authorization occurs after authentication

# Key Concepts of Information Security (cont'd.)

- **Accountability**
  - Exists when a control provides assurance that every activity undertaken can be attributed to a named person or automated process

# Parkerian Hexad

- Confidentiality
- Integrity
- Availability
- Control
- Authenticity
- Utility



Elements of Information Security Management  
© simplicable.com



**Donn B. Parker**  
1929 - 2021

# What's Wrong with Information Security and How to Fix It

- Video Lecture by Donn B. Parker
  - <http://www.youtube.com/watch?v=RW9hOBCSy0g>

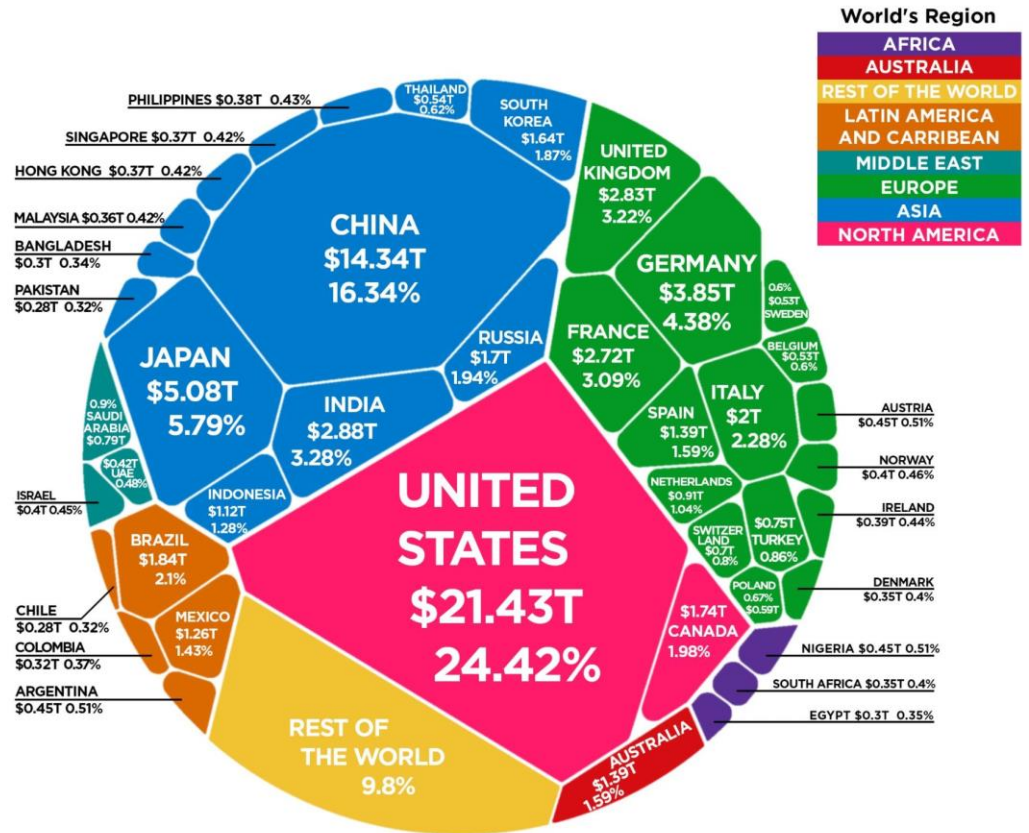


**Donn B. Parker**  
1929 - 2021

# ***CYBERCRIME***

# 2019 Annual GDPs By Country

## The World Economy Gross Domestic Product (GDP) by Country 2019



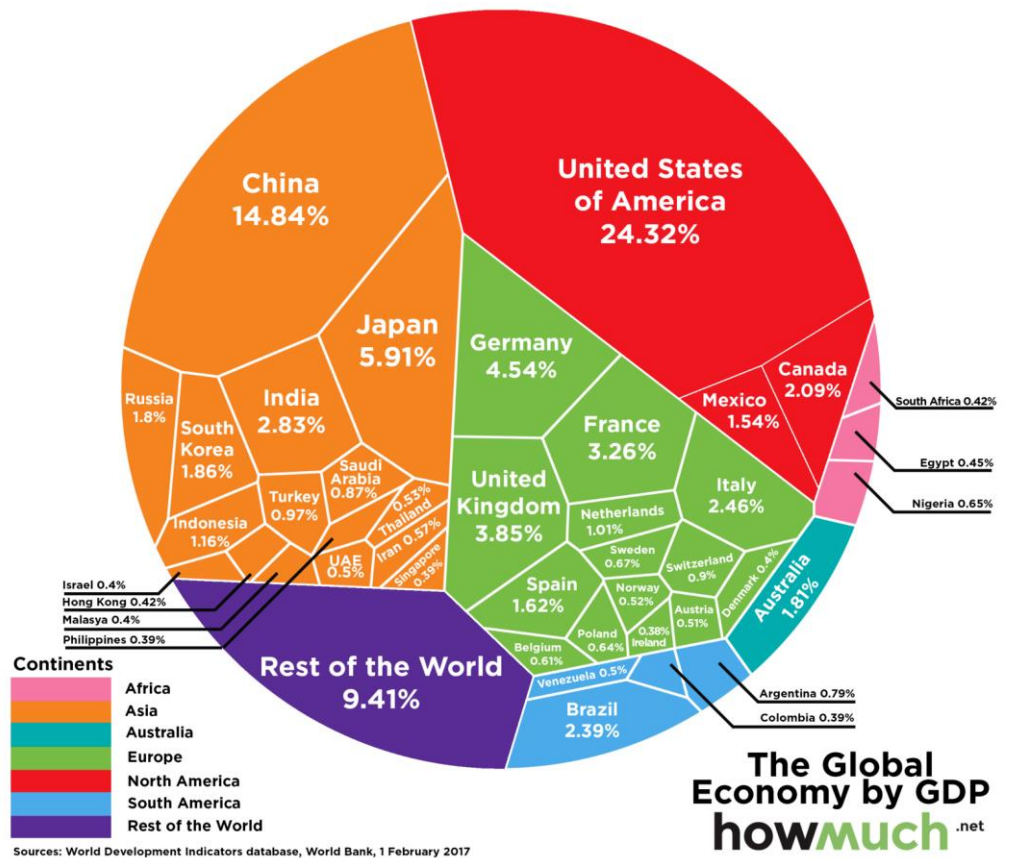
**Article & Sources:**

<https://howmuch.net/articles/the-world-economy-2019>  
<https://databank.worldbank.org>

howmuch.net

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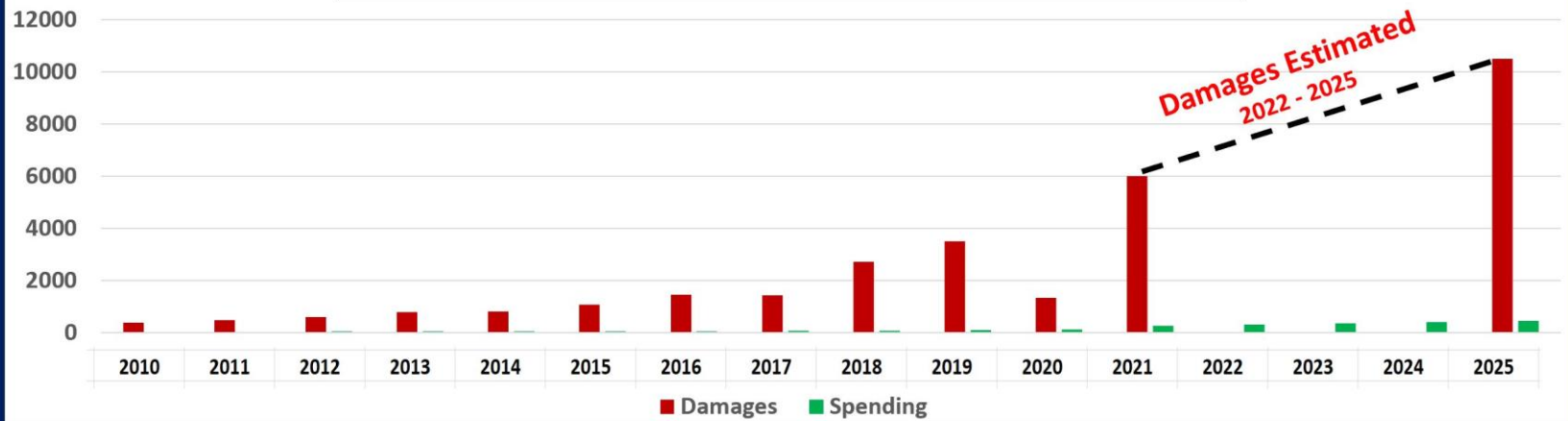
# 2021 Annual GDPs By Country





# Cybercrime

**Cybercrime Damages vs. Cyber Defense Spending  
2010 - 2025  
Global Data**



Damages	388	485.25	581.44	781.84	800.49	1070.71	1450.7	1418.7	2700	3500	1330	6000				10500
Spending	27.4	30.5	34.5	40	43.5	49	54.8	60.4	66	103	123	262.4	301.8	347	399	458.9
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025

Notes: Damages - 2001 - 2017 - US DoJ  
Spending - 2010 - 2018 - TIA and Statista  
Spending - 2021 - 2025 - Cybersecurity Ventures

Chart created by:  
William Favre Slater, III, Chicago, IL, USA  
[williamslater@gmail.com](mailto:williamslater@gmail.com)  
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10/20/22

# Cybercrime

## Global Cybercrime Damage Costs:

- **\$6 Trillion USD a Year.** \*
- **\$500 Billion a Month.**
- **\$115.4 Billion a Week.**
- **\$16.4 Billion a Day.**
- **\$684.9 Million an Hour.**
- **\$11.4 Million a Minute.**
- **\$190,000 a Second.**

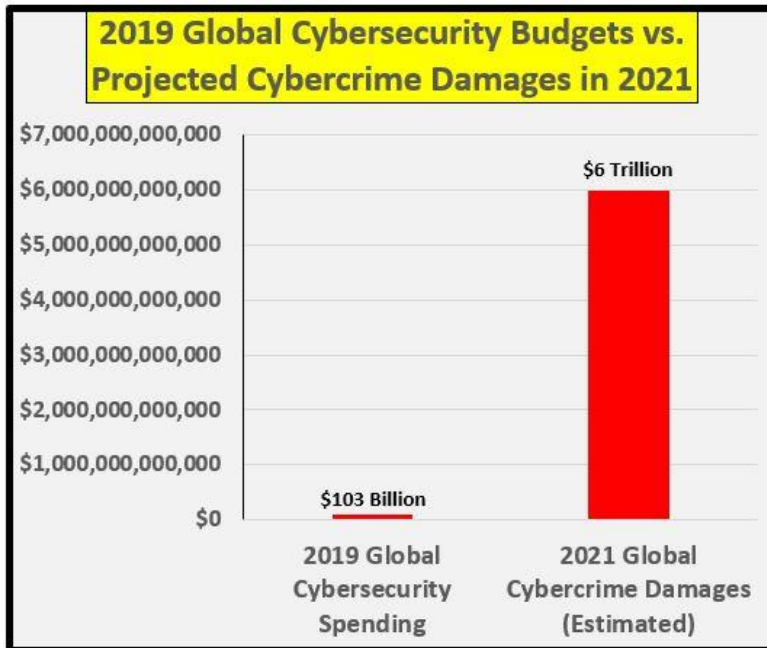


ALL FIGURES ARE  
PREDICTED BY 2021

\* SOURCE: CYBERSECURITY VENTURES



# Cybercrime



Sources:

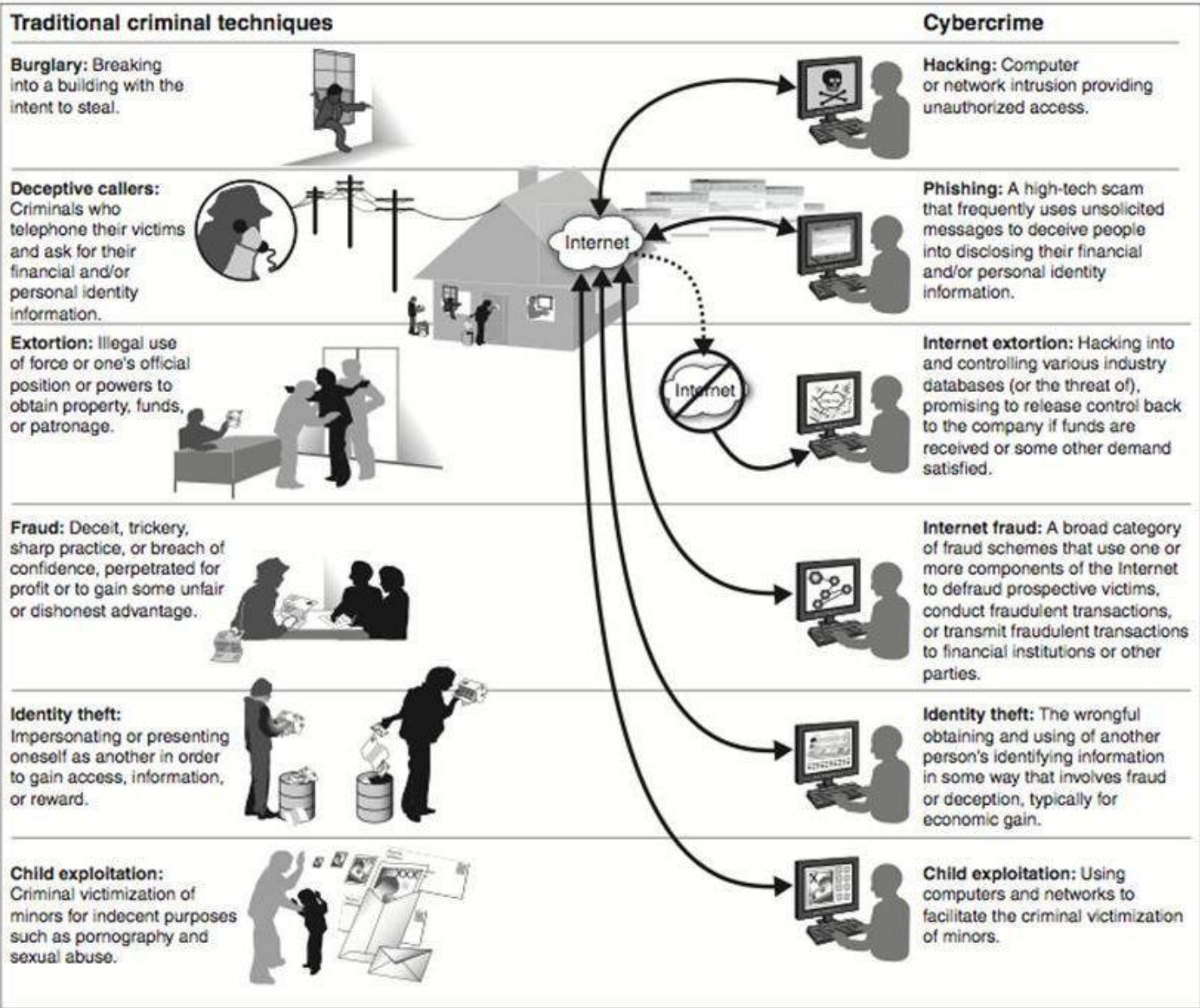
2017 Cybercrime Report by the Herjavec Group - <https://www.herjavecgroup.com/resources/the-2017-cybercrime-report/>  
ZDNet - <https://www.zdnet.com/article/global-security-spending-to-top-103-billion-in-2019-says-idc/>

Graphics:

William Favre Slater, III  
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Copyright 2019



**Figure 1: Comparison between Traditional Criminal Techniques and Cybercrime**




Source: GAO.

# Comparing Traditional Crime and Cybercrime




# 10 Reasons Why Cybersecurity Should Be Your Top Priority in 2019


10 REASONS WHY  
**CYBER SECURITY**  
SHOULD BE TOP PRIORITY FOR ORGANIZATIONS IN  
**2019**




Financial loss of \$1.3 billion from cybercrime alone in the US<sup>1</sup>




**CYBER CRIME** is costing organizations, on average **\$11,7 MILLION** per year<sup>2</sup>




The costs for Cybersecurity will rise up to **\$6 TRILLION** by 2021<sup>3</sup>




**67% OF CIOs THINK** the possibility that their company will have a data breach or cyberattack in 2018 IS GIVEN<sup>4</sup>




**39% OF CEOs THINK** that digital transformation is at the top of their agenda<sup>5</sup>




**GLOBAL SCALABILITY** of **CYBERCRIME** is becoming easier for attackers, as criminals find new business models<sup>6</sup>




**55% OF ORGANIZATIONS** work together with external partners to **REDUCE SECURITY RISKS**<sup>7</sup>




the number of hired security professionals increased from **25 PROFESSIONALS** in 2015 to 40 in 2017/**ORGANIZATION**<sup>8</sup>




Organizations lose an average of **\$1.6 MILLION** PER YEAR DUE TO **DDoS ATTACKS**<sup>8</sup>





**46%** of all UK businesses experienced at least one attack in the last year<sup>9</sup>





**CONCLUSION** Do not wait until it is too late and safeguard your business now! Building brands takes ages, destroying them can take less than a night. In times of digitalization, it is vital to avoid outages. Therefore, organizations must collaborate with an IT security provider who offers a fully automated, self-learning and cloud-based IT security solution that protects against even the worst cyber threats such as DDoS attacks.

**SOURCES:**  
 1) Amn: The Black Market Report, a look inside the dark web  
 2) Ponemon Institute LLC: Cost of Cyber Crime Study 2017  
 3) HERJAVEC Group: 2017 Cybercrime Report  
 4) Ponemon Institute LLC: What CIOs Worry About in 2018  
 5) BT: Leading from the front: CEO perspectives on business transformation in the digital age  
 6) University of Portsmouth: Cyber Security breaches survey 2017, Main Report  
 7) PWC: CIO and CSO: The Global State of Information Security® Survey 2017  
 8) Cisco 2018: Security Capabilities Benchmark Study

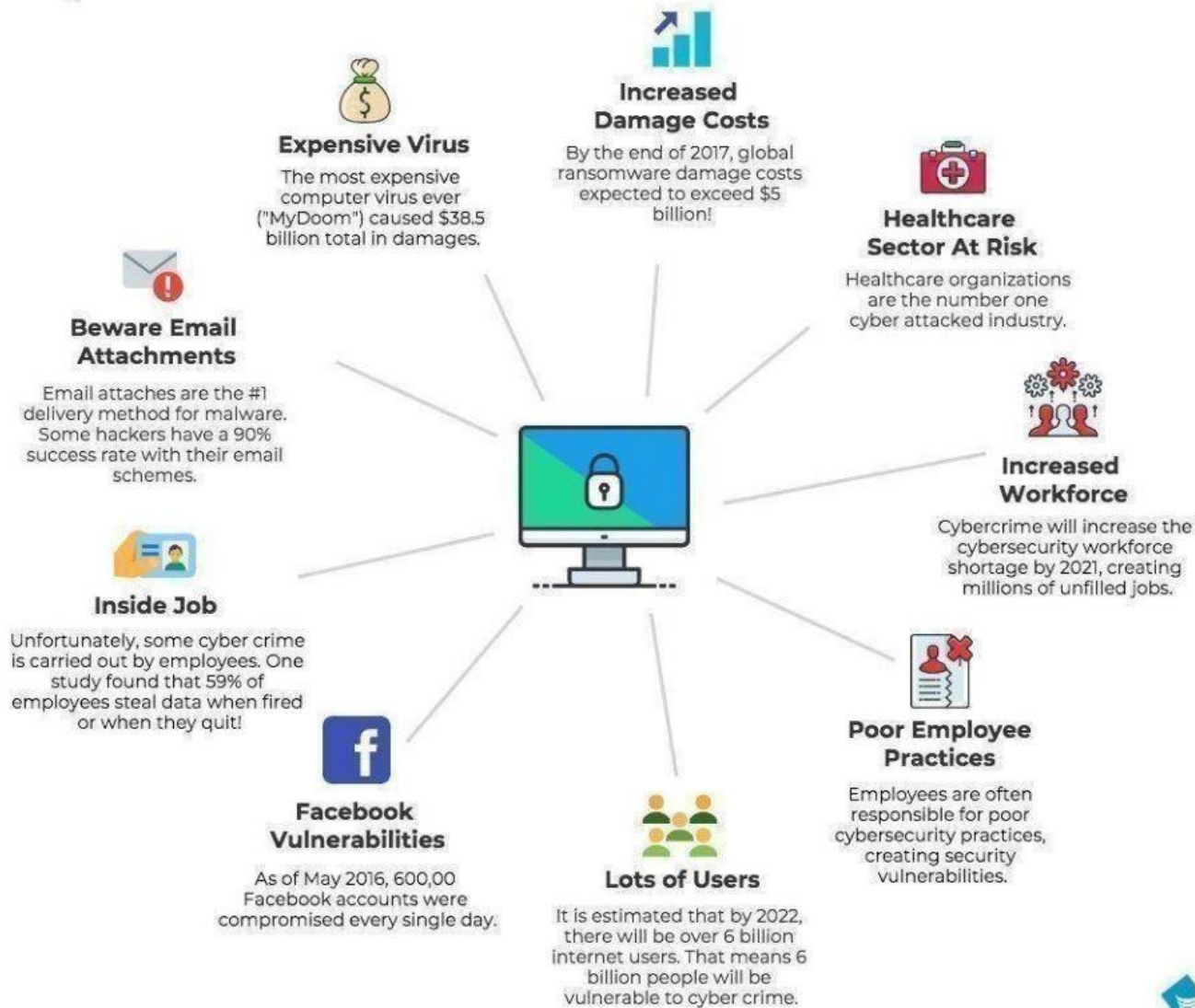
 @Link11GmbH
  link11.com

October 31, 2022

William Fave Slater, III

45

# Cybercrime Facts & Stats



# Cybercrime Facts & Statistics

**Sources:**  
<http://www.blue-pencil.ca/top-12-cyber-crime-facts-and-statistics/>  
<https://www.csoonline.com/article/3153707/security/top-5-cybersecurity-facts-figures-and-statistics.html>  
<https://www.darkreading.com/endpoint/5-reasons-cybercriminals-target-healthcare/d/d-id/1325210?>  
<https://www.optus.com.au/enterprise/accelerate/security/10-sobering-facts-and-stats-about-cyber-crime>  
<https://heimdalsecurity.com/blog/10-surprising-cyber-security-facts-that-may-affect-your-online-safety/>



# 2018 Cybercriminal Shopping List



## 2018 CYBERCRIMINAL SHOPPING LIST

Recent mass data breaches have created an abundance of verified credentials for sale across the dark market.

What is your identity worth? See what cybercriminals are willing to pay for access to a variety of consumer accounts.



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# 6 Ways Cybercriminal Get Your Information

United States  
**{CYBERSECURITY}**  
Magazine  
A Multi-Platform Publishing Portal



## 6 WAYS CYBER-CRIMINALS GET YOUR INFORMATION

<b>BACKDOOR</b>  <p>Any secret method of bypassing normal authentication or security controls. Backdoors are common, often added by an authorized party to allow some legitimate access, or by an attacker for malicious reasons;</p>	<b>DENIAL-OF-SERVICE ATTACKS</b>  <p>make a machine or network resource unavailable to its intended users</p>
<b>DIRECT-ACCESS ATTACKS</b> <p>An unauthorized user gaining physical access to a computer is most likely able to directly copy data from it. They may also compromise security by making operating system modifications, installing software worms, keyloggers, covert listening devices or using wireless mice</p>	<b>SPOOFING</b> <p>An attempt to use false data to pose as someone else, with the goal of gaining access to restricted information and data</p>



**PHISHING**  


Phishing is a ruse to extract personal information from people by disguising a trap as a trusted entity via email, messenger, ect.

 **SOCIAL ENGINEERING** aims to convince a user to disclose secrets such as passwords, card numbers, etc. by, for example, impersonating a bank, a contractor, or a customer |

[www.uscybersecurity.net](http://www.uscybersecurity.net)



Most small business owners have been cyber victims



Computer virus

**44%**



Phishing

**30%**



Trojan horses

**22%**



Hacking

**16%**



Data breach

**11%**



Issues due to unpatched software

**10%**



Unauthorized access to customer info

**9%**



Unauthorized access to company info

**8%**

Most Small Businesses Have Been Cybercrime Victims

Source: The 2015 Small Business Owner Study commissioned by Nationwide and conducted by Harris Poll Online.



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# Numbers of Cybercrime Victims

2

THEME 1: SHOCKING SCALE: NUMBER OF VICTIMS

“ SHOCKING SCALE: NUMBER OF VICTIMS

## 1 MILLION+ VICTIMS A DAY

EVERY DAY THERE ARE TWICE AS MANY CYBERCRIME VICTIMS AS NEW BORN BABIES +



50,000

VICTIMS EVERY HOUR +



820

VICTIMS EVERY MINUTE



14

VICTIMS EVERY SECOND



7/10

69%

69% of adults have experienced cybercrime in their lifetime. Compared to the 2010 survey, there has been a 3% rise in overall cybercrime +



65%

Among all cybercrime victims surveyed, nearly two thirds have fallen prey in the past 12 months alone - a total of 431m adults in 24 countries

589 MILLION

Cybercrime has affected 589m people in just 24 countries - equivalent to 9% of the entire population of the world vi



## 431 MILLION

The total number of cybercrime victims in the past 12 months is greater than the entire populations of USA & Canada (347m vii) or Western Europe (400m viii)

# Cybersecurity Jobs in the U.S.A.

CYBERSECURITY SUPPLY/DEMAND HEAT MAP

All

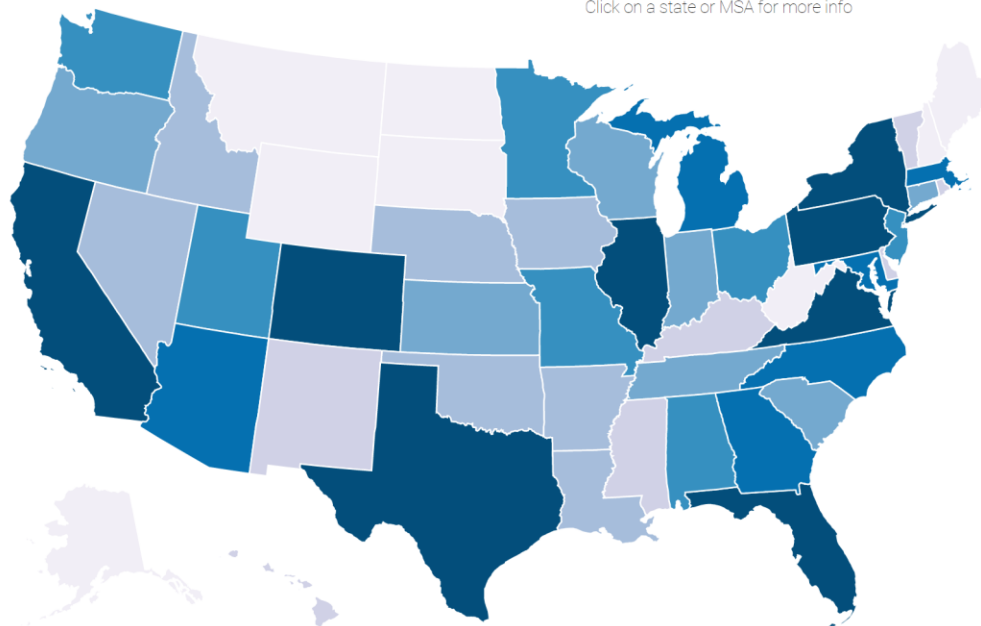
Public Sector Data

Private Sector... ▾

Total job openings ▾

States Metro Areas Search State 🔍

Click on a state or MSA for more info



TOTAL JOB OPENINGS

- 722 - 2,498
- 2,499 - 4,845
- 4,846 - 7,259
- 7,260 - 9,567
- 9,568 - 18,596
- 18,597 - 24,903
- 24,904 - 83,196

Cybersecurity talent gaps exist across the country. Closing these gaps requires detailed knowledge of the cybersecurity workforce in your region. This interactive heat map provides a granular snapshot of demand and supply data for cybersecurity jobs at the state and metro area levels, and can be used to grasp the challenges and opportunities facing your local cybersecurity workforce.

Share

Embed

Source: <https://www.cyberseek.org/heatmap.html>

National level

TOTAL CYBERSECURITY JOB OPENINGS ⓘ

769,736

SUPPLY/DEMAND RATIO ⓘ

High Supply

GEOGRAPHIC CONCENTRATION ⓘ

Average

TOP CYBERSECURITY JOB TITLES ⓘ

- Cybersecurity Analyst
- Software Developer
- Penetration & Vulnerability Tester

## National level

TOTAL CYBERSECURITY JOB OPENINGS ⓘ

769,736

TOTAL EMPLOYED CYBERSECURITY WORKFORCE ⓘ

1,108,725

SUPPLY/DEMAND RATIO ⓘ

High Supply

Low Supply

65% National average

GEOGRAPHIC CONCENTRATION ⓘ

Average

LOCATION QUOTIENT

National average

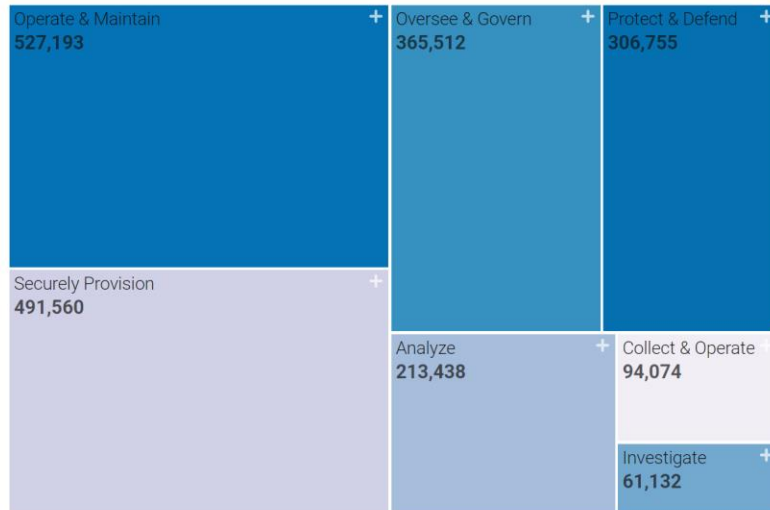
1.0

TOP CYBERSECURITY JOB TITLES ⓘ

- Cybersecurity Analyst
- Software Developer
- Penetration & Vulnerability Tester
- Cybersecurity Consultant
- Network Engineer
- Cybersecurity Manager
- Systems Engineer
- Senior Software Developer
- IT Director

JOB OPENINGS BY NICE CYBERSECURITY WORKFORCE FRAMEWORK CATEGORY ⓘ

NICE

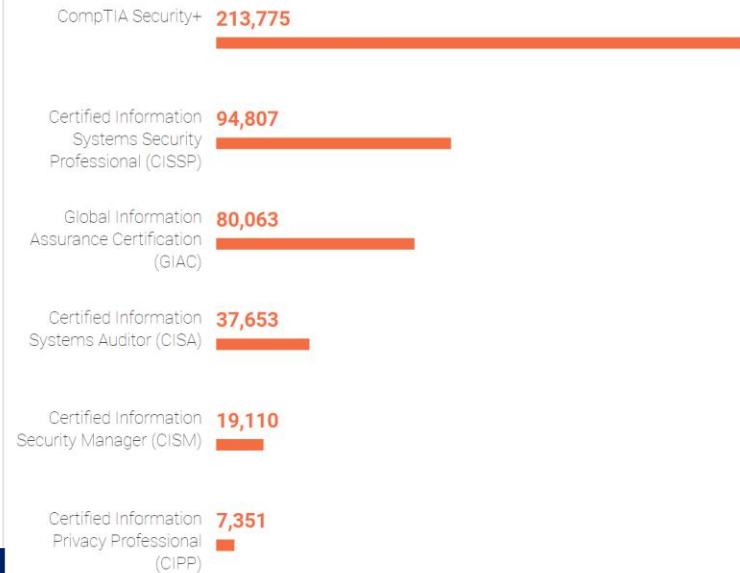


Notes: The NICE Workforce Categories are not mutually exclusive- one job could perform multiple roles within the framework. The data shown here are not intended to be aggregated.

CERTIFICATION HOLDERS / OPENINGS REQUESTING CERTIFICATION ⓘ

■ Certification holders

■ Openings requesting certification



Source: <https://www.cyberseek.org/heatmap.html>

# Certifications

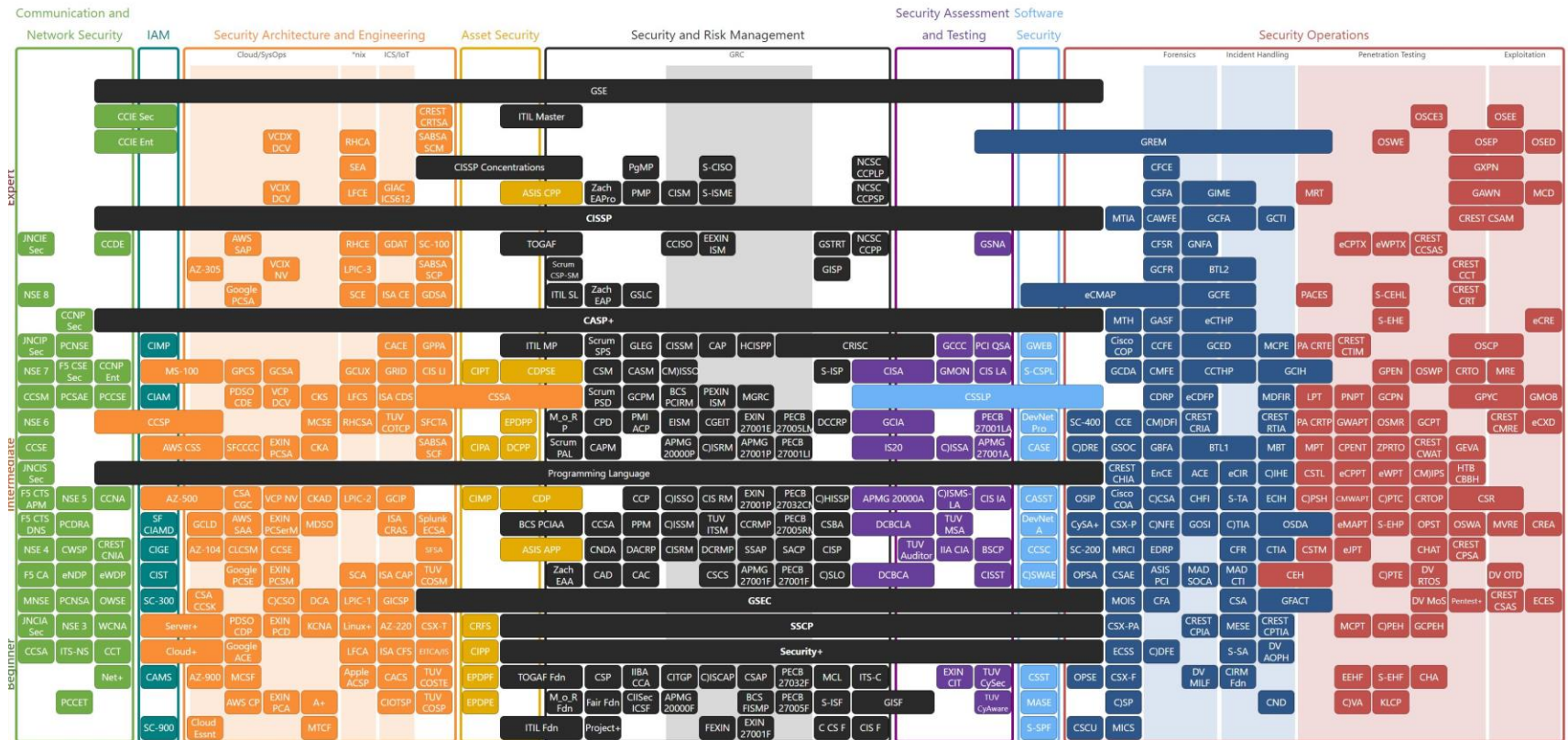
# Cybersecurity and Related Certifications

# Cybersecurity and Related Certifications

pauljerimy.com/security-certification-roadmap/



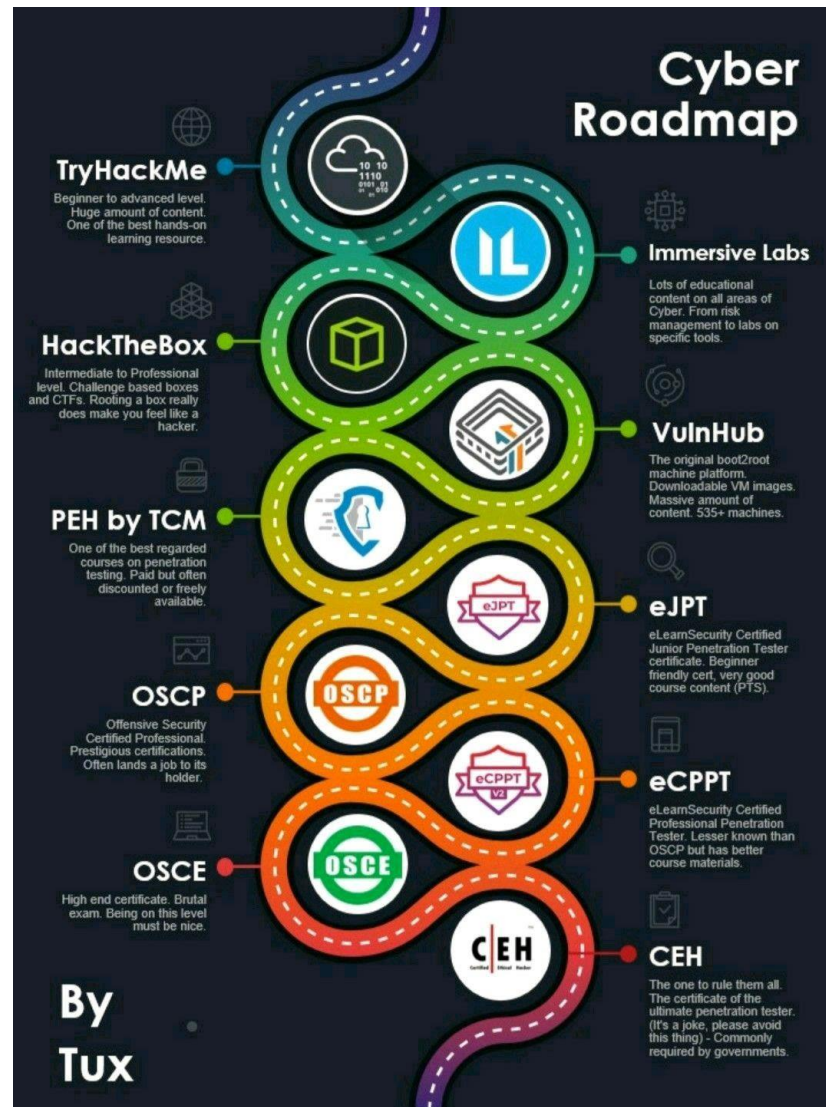
Cyber Roadmaps ▾ Cyber Book Reviews 🔍



460 certifications listed | August 2022



# Cybersecurity and Related Certifications



# Cybersecurity and Related Certifications



Advancing the Global IT Industry

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View your exam history and other certification requirements.

## Exams

Exams are imported during regular business hours. After completing an exam, allow 5 business days for it to appear here.

Code	Exam	Registration number	Grade	Date
HIT-001	CompTIA Healthcare IT Technician Exam	312778986	Pass	2017-Feb-27
XK0-002	Linux+ Exam	nf5dtt52af	Pass	2006-Oct-28
SY0-101	Security+ Exam	k1adtt520a	Pass	2004-Feb-07
JK0-005	JOBS+ Server+	j9dtt535c	Pass	2003-Dec-13
PK0-001	IT Project+ Exam	jbett542d	Pass	2003-Nov-15
JK0-232	A+ E2C/JOBS+ OS Technologies Linear Exam	jb0dtt566b	Pass	2003-Nov-08
JK0-231	A+ E2C/JOBS+ Core Hardware Linear Exam	jb0dtt5666	Pass	2003-Nov-01
JK0-007	JOBS+ i-Net+ Exam	j9edtt52e8	Pass	2003-Oct-25
JK0-006	JOBS+ Network+ Certification Exam	j9dtt5332	Pass	2003-Oct-18

# **Cybersecurity and Related Certifications**

## **CompTIA Stackable Certifications**

### **Cybersecurity**

CompTIA Secure Infrastructure Specialist – CSIS

### **Infrastructure**

CompTIA Linux Network Professional - CLNP

CompTIA Systems Support Specialist – CSSS

CompTIA Network Infrastructure Professional – CNIP

CompTIA IT Operations Specialist – CIOS

# Cybersecurity and Related Certifications

## CompTIA Stackable Certifications

CompTIA  
IT Operations Specialist



CompTIA IT  
Systems Support Specialist



CompTIA  
Linux Network Professional



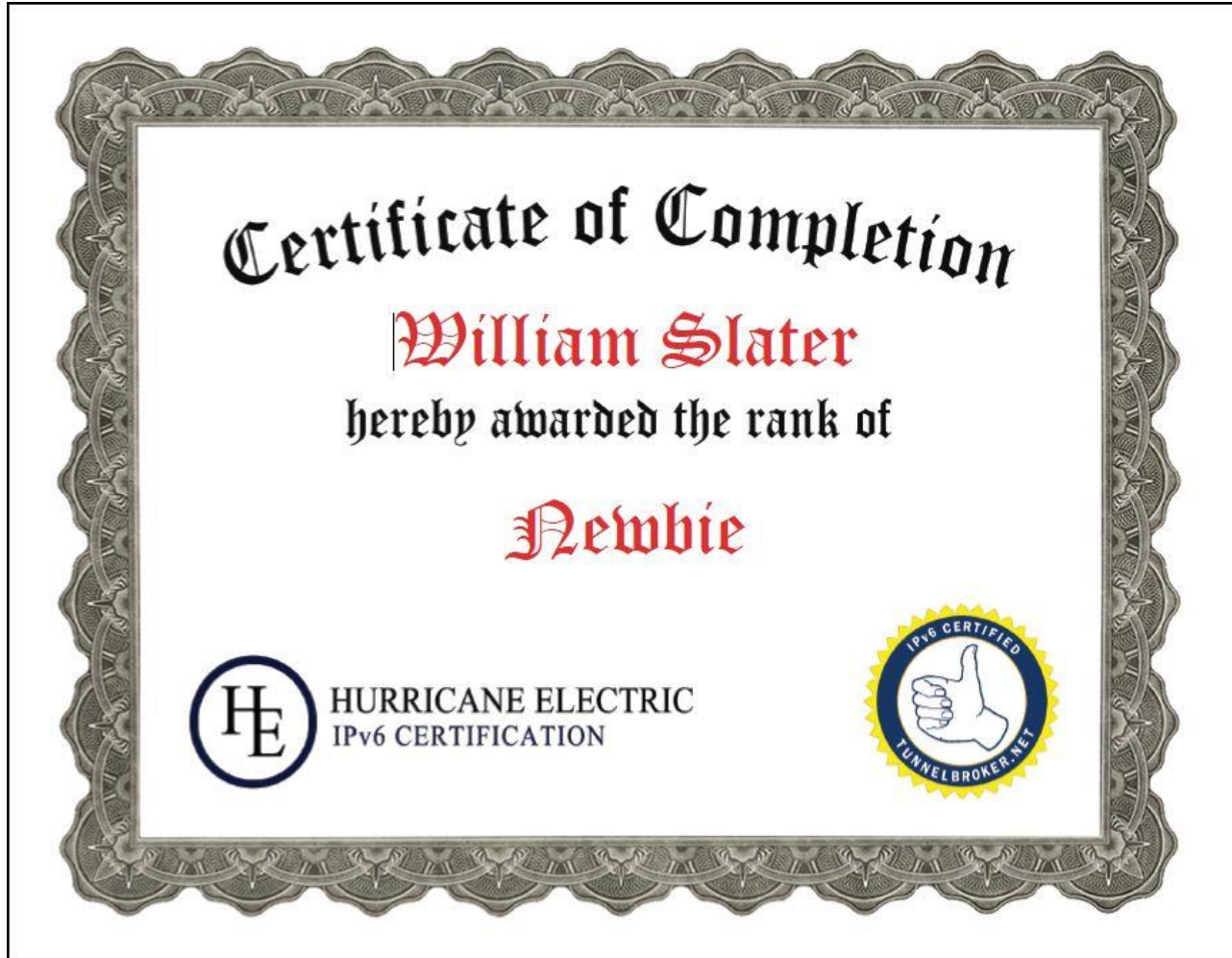
CompTIA  
Network Infrastructure Professional



CompTIA  
Secure Infrastructure Specialist

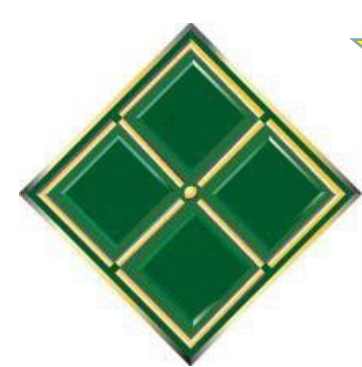


# Important FREE Certification IPv6 by Hurricane Electric



Visit <https://ipv6.he.net>

# Other Professional Certifications That Are High-Value



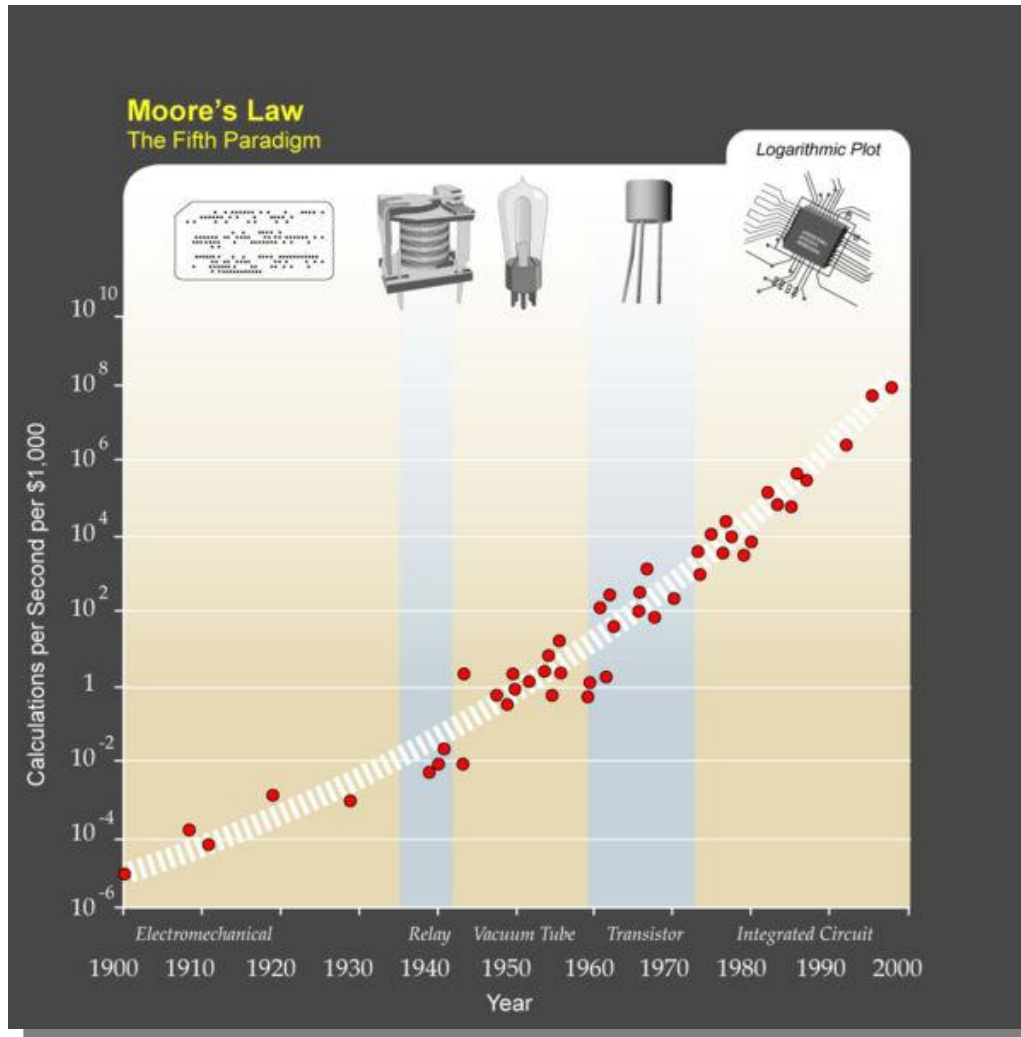
ITIL



More Information at <https://billslater.com/certifications>

# What's Driving the Industry?

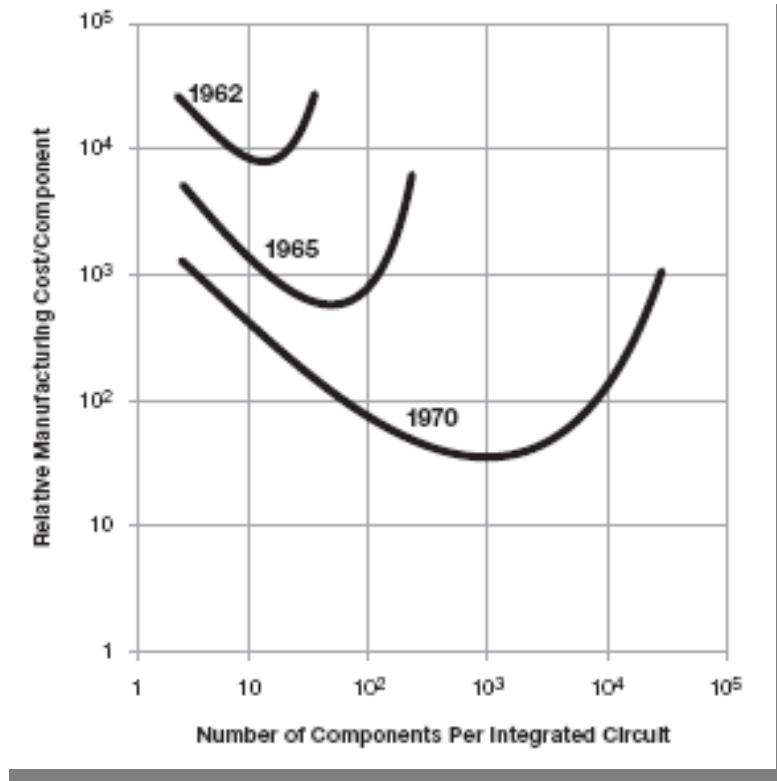
# Moore's Law – The Fifth Paradigm



Kurzweil expansion of Moore's Law from integrated circuits to earlier transistors, vacuum tubes, relays and electromechanical computers.



# Moore's Law

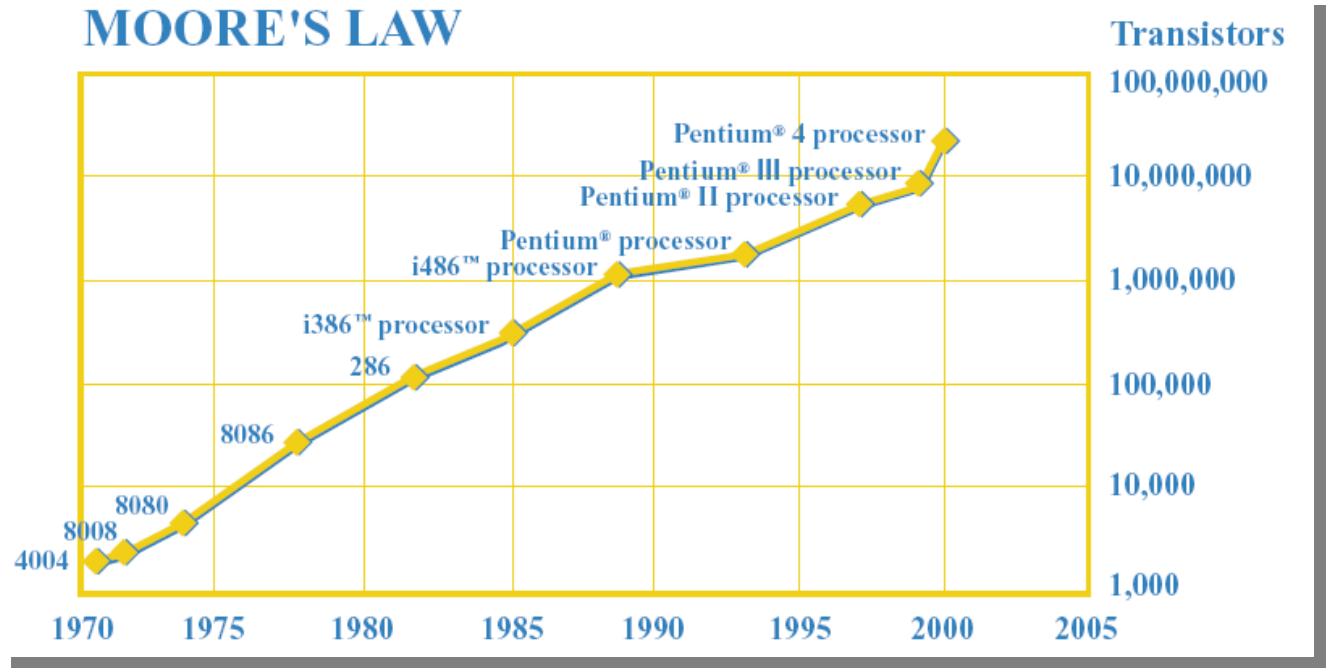


- The number of transistors on a piece of silicon will double every 18 months for the same or cheaper cost
- First published by Gordon Moore of Intel Corporation on April 19, 1965 in Electronics magazine, Vol. 38, No. 8
- It has held true since it was published

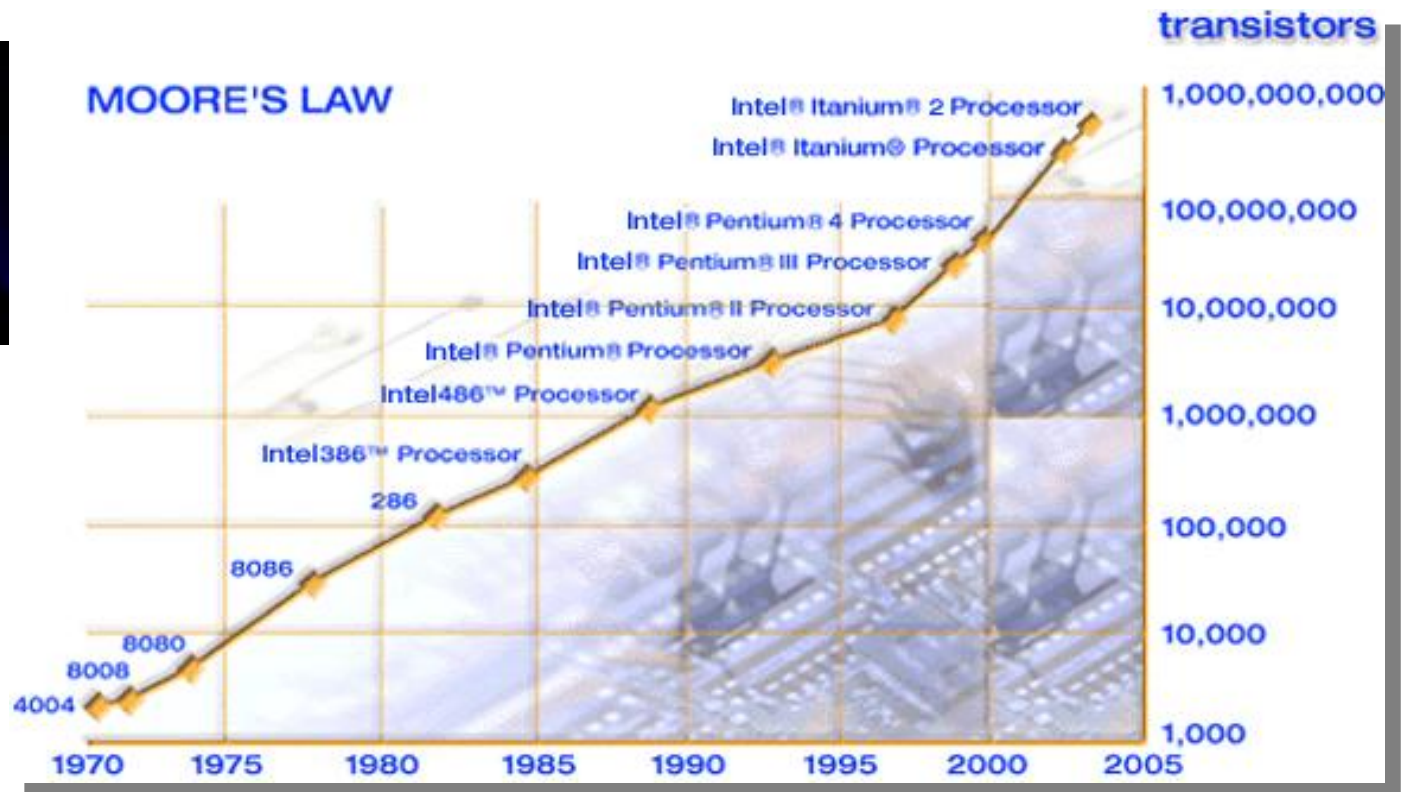
# Moore's Law – Applied to CPUs



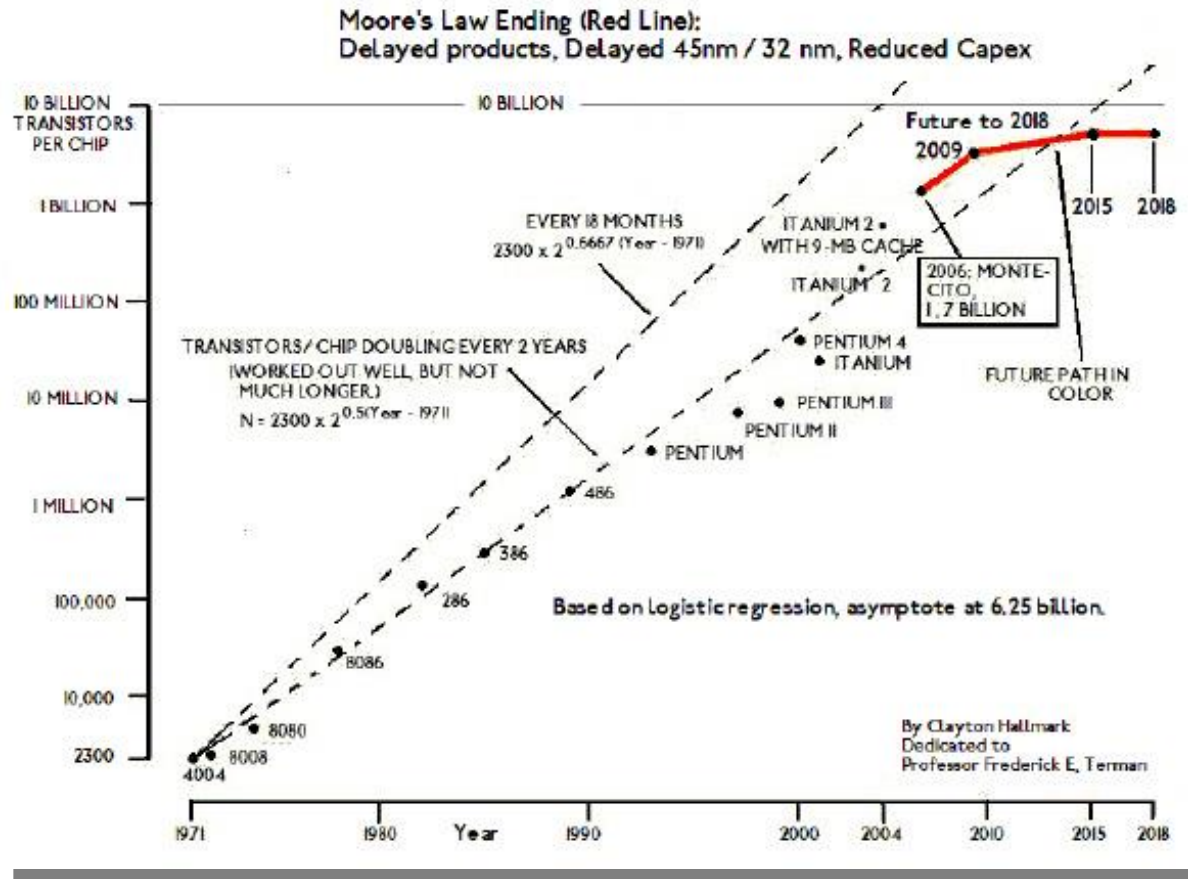
## MOORE'S LAW



# Moore's Law – Applied to CPUs



# Moore's Law – The Future



- Because of Moore's Law, computers get cheaper and more powerful, constantly.

# Moore's Law – The Future

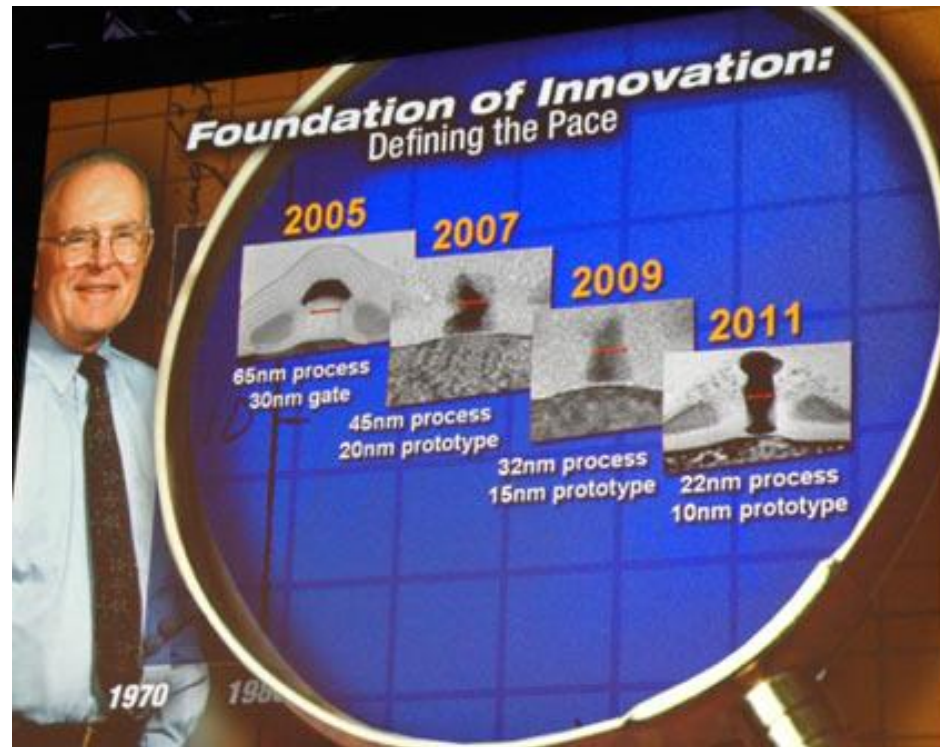
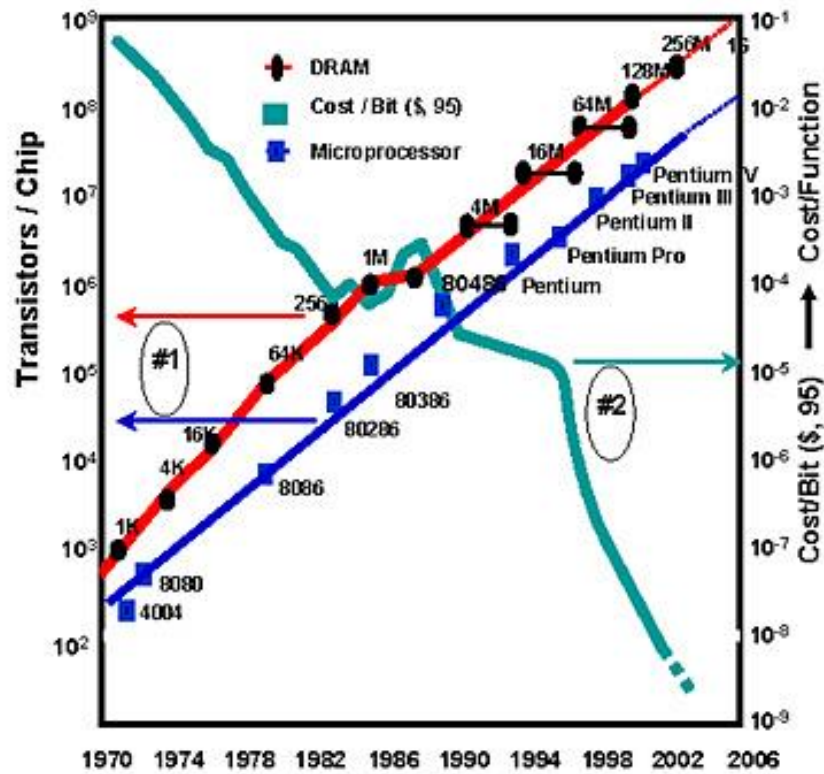


Image Credit: Intel. From the Intel Developer Forum Spring 2005

# The Economic Impact of Moore's Law on CPUs and Memory



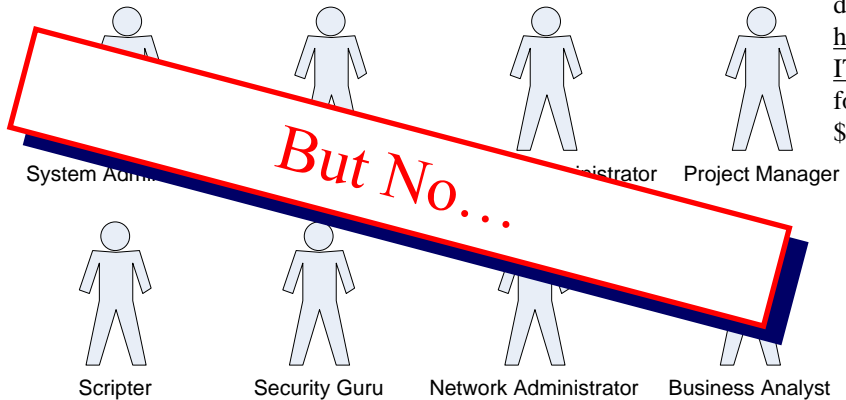
Source: [http://blogs.business2.com/business2blog/hardware\\_itchips/index.html](http://blogs.business2.com/business2blog/hardware_itchips/index.html)

# Does Moore's Law Apply to Anything Else?

- Yes – People!
- Employers in 2022 want many more skills for the same or less amount of money!

# 1997 and 2022

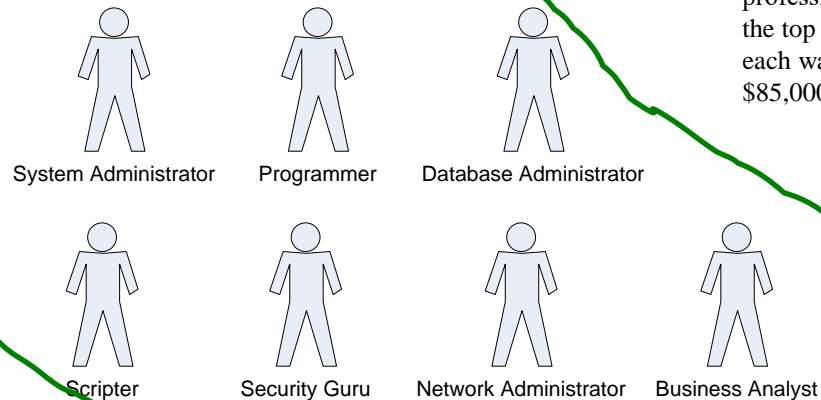
## 2022



The job market now expects all of these functions to be done by one highly skilled IT professional for about \$85,000 / year

## 1997

\$595,000 !



Each of these functions used to represent one highly skilled IT professional... And at the top of their career, each was making about \$85,000 / year

Programming	Database Administration	System Administration	Scripter	Network Administration	Security Specialist	Business Analyst	Project Management
Programming	Database Administration	System Administration	Scripter	Network Administration	Security Specialist	Business Analyst	



# 1997 and 2022

## 2022

They want...



Planet Earth



Superman

\$85,000 !

The job market now expects all of these functions to be done by one highly skilled IT professional for about \$85,000 / year

**Note: \$85,000 in 2007 USD = \$62,000 in 1997 USD**

Programming	Database Administration	System Administration	Scripter	Network Administration	Security Specialist	Business Analyst	Project Management
-------------	-------------------------	-----------------------	----------	------------------------	---------------------	------------------	--------------------

## 1997

\$595,000 !



System Administrator



Programmer



Database Administrator



Scripter



Security Guru



Network Administrator



Business Analyst

Each of these functions used to represent one highly skilled IT professional... And at the top of their career, each was making about \$85,000 / year

# Back to Moore's Law and Hardware



# What Happens When Moore's Law Hits the Brick Wall \*?



(\*) "The brick wall refers to the smallest possible building blocks for these transistors--atoms and molecules." Beebe

# What Happens When Moore's Law Hits the Wall?

- No more faster processors... for a while
- To be competitive, software developers will have to develop programs that are optimized to this last fastest processor
- Efforts will be accelerated to use technologies like nanotechnology, light switching, biotechnologies, etc., in order to bring about the next paradigm of powerful, inexpensive, ubiquitous computing.

# Offshore - The Problem



**Philippines**



**Jamaica**



**Jamaica**



**Aims to be the  
"Bill Gates"  
of Jamaica**

October 31, 2022

William Fave Slater, III

# Offshore - The Problem



India



India



India



Russia

# Offshore - The Problem



**Bill Gates**



**Carly Fiorina**



**Larry Ellison**



**Bill Clinton**



**U.S. Congress**

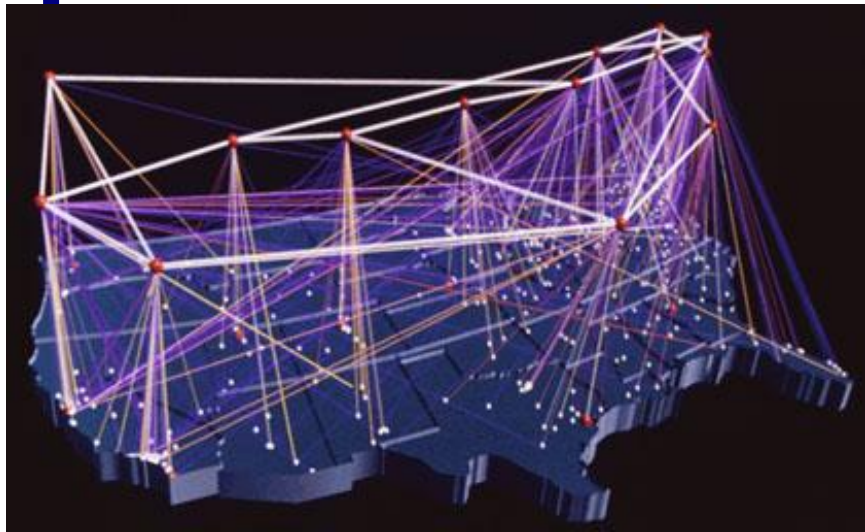


**Scott McNealy**

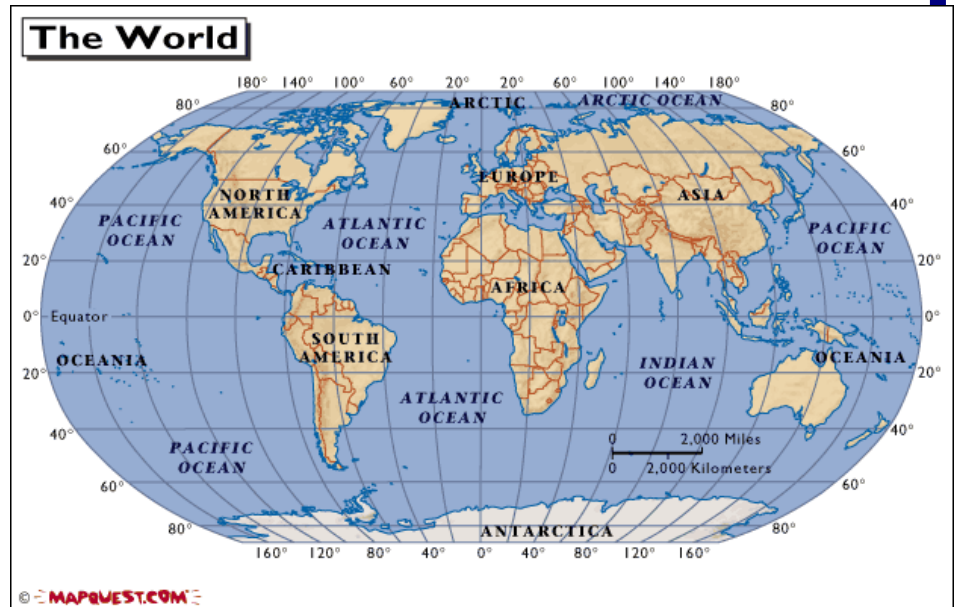


October 31, 2022

# Offshore - The Problem



The Internet



Globalization



October 31, 2022



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# Rewards



For your hard work, you will either find a job or get to keep your present job.



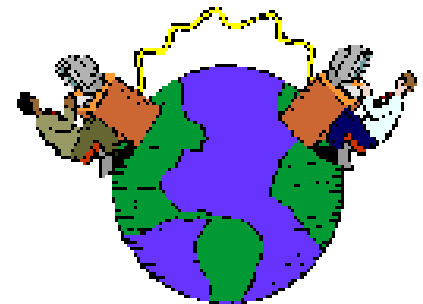
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81

# Keeping Your IT Job - 2022

- Keep your skills up
  - Buy and read good technology books
  - Create a network at home
  - Attend IT seminars
  - Join and participate in professional organizations
- Don't specialize, be strong in several areas
- Get a mentor (<https://billslater.com/mentoring>)
- Develop strong people and communication skills
- Seek jobs where you get to interface with the customer directly, to assure them that you are helping make them happy
- Do regular status reports
- Keep the Team website updated with your work
- Cheerfully volunteer for additional responsibilities
- Work hard at making your boss look good and the customer happy
- Be ultra-reliable: Never miss work.



(Graphic from UI Springfield)

# Sage Advice:



**The IT career field treats Stagnated IT workers the same way it treats old Computers: It gets rid of them. So keep busy honing your skills and adding new skills outside of the work place!**



# If Keeping Your Skills Up to Date Is Too Much to Ask...

- There are other career alternatives...

# IT Career Alternatives

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updated 4:20 p.m. EDT, Mon July 16, 2007

## Commentary: U.S. workers will pick that lettuce – for \$1,000 a week

[Next Article in U.S. »](#)

Ruben Navarette Jr.  
Special to CNN

TEXT SIZE

**Fresno, CALIFORNIA (CNN)** – There is nothing like coming home, and I got the chance to do that today thanks to an invitation to join in a lunch forum hosted by the Kenneth L. Maddy Institute at California State University, Fresno, which sets out to train new leaders.



WASHINGTON POST ONLINE GROUP

Ruben Navarette Jr.: Workers' sense of entitlement opens jobs for immigrants.

I like the sound of that. We need new leaders. Just look at the recent shoving match over immigration reform, which happens to be the topic that we'll be discussing over lunch. I'm told that many in the audience will have some connection to agriculture.

Big surprise. Everyone in Fresno is connected to agriculture, whether they realize it or not. That's the whole point. While many Americans tell themselves that they don't benefit in the least from illegal immigration, my friends in the San Joaquin Valley don't have that luxury. They're up to their necks in benefit. Oh, there are costs, too – to schools, hospitals, jails, etc. But, after it's all said and done, Fresno and other agri-cities come out way ahead.

# IT Career Alternatives



# IT Career Alternatives



Car Salesperson



Fast Food Worker

# IT Career Alternatives



Health Care Worker



# IT Career Alternatives



Construction Worker



Assembly Line Worker

# IT Career Alternatives

## As wages fall, workers slip from middle class

Amid the demise of manufacturing jobs, the birthright of a nice home, college for the kids is under siege

By Tim Jones | Tribune national correspondent  
*July 25, 2007*

DAYTON, Ohio - No job lasts forever, especially a \$30-an-hour assembly line job. Cheryl Seaton recognized that a long time ago, which is why she went back to college to pick up a degree that would insulate her from the economic wreckage she sensed was coming.

It didn't help. When the end neared for her auto parts assembly plant last year, Seaton, 52, walked off the loading dock, armed with a bachelor's degree. In January she began work as a mental health caseworker for a third less money.

Seaton is paid \$9.45 an hour, less than what her 21-year-old daughter earns as a truck dispatcher.

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**Center for Union Facts**  
Facts That Union Leaders Don't Want You To

"I got a four-year degree, and that and a dollar will get me a cup of coffee at McDonald's," Seaton said.

This is one of the painful personal

# IT Career Alternatives



*"Would you like to swing on a Star?  
"Carry MoonBeams Home In A Jar?  
And be better off than you are?"*

*"If you're not happy with what you are,"  
"You could always be a fish!"*



# ***CONCLUSION***



# In Conclusion

- We covered:
  - The Internet in 2022
  - Cybersecurity
  - Cybercrime
  - IT Industry Career
  - IT Certifications
  - Observations and Tips



# ***QUESTIONS AND ANSWERS***

# Questions and Answers



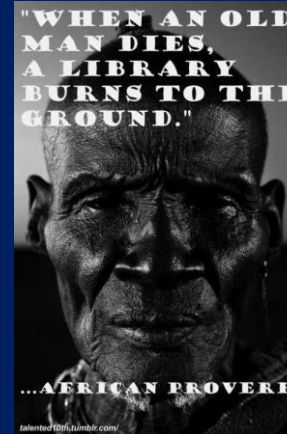
# *Dedication & Thanks*




# Dedication

This work is dedicated with love, admiration, gratitude, and great respect to Mr. *James P. Jarnagin* (January 25, 1935 – December 2, 2018), the Man who was my Mentor and Father-figure since March 1985. He is one of the biggest reasons for my career success and personal success. What I owe him can never be repaid.

*We'll meet again, Jim. You can count on it...*



A black and white portrait of Maya Angelou, an elderly woman with short, curly grey hair, wearing a dark, ribbed top, a necklace with several small white beads, and a single pearl earring. She is looking directly at the camera with a slight smile.

PEOPLE WILL FORGET  
WHAT YOU SAID.  
PEOPLE WILL FORGET  
WHAT YOU DID.  
BUT PEOPLE WILL  
NEVER FORGET HOW  
YOU MADE THEM FEEL.

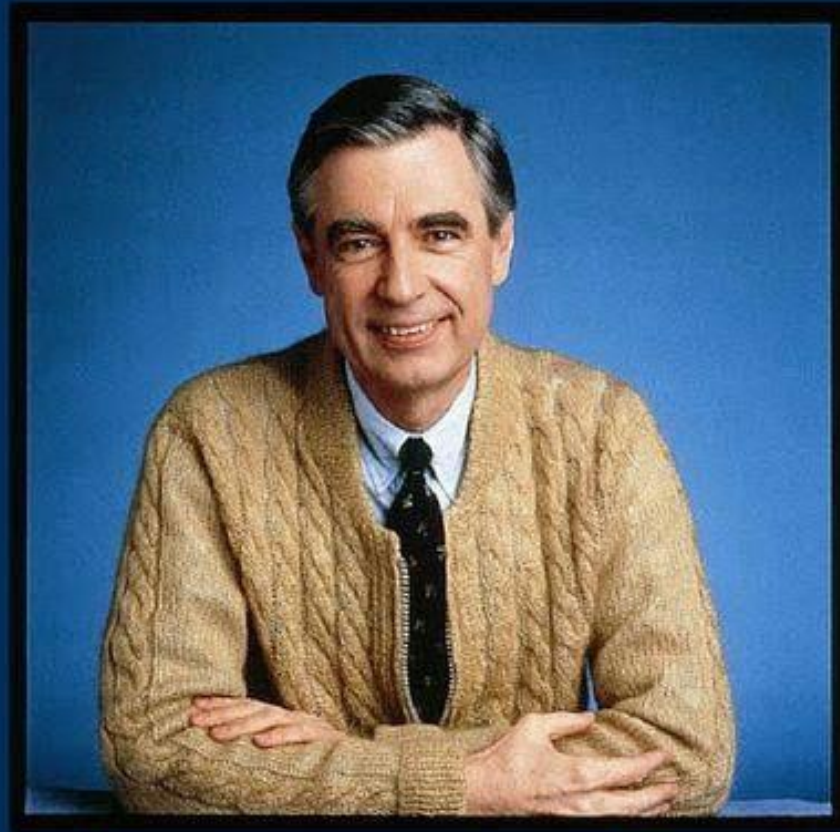
*Maya Angelou*

The Restaurant Boss

Those who say  
it cannot be done  
shouldn't interrupt  
the people doing it

Always dream and shoot higher  
than you know you can do.  
Don't bother just to be better  
than your contemporaries or  
predecessors. Try to be better  
than yourself.

~~~~~ William Faulkner



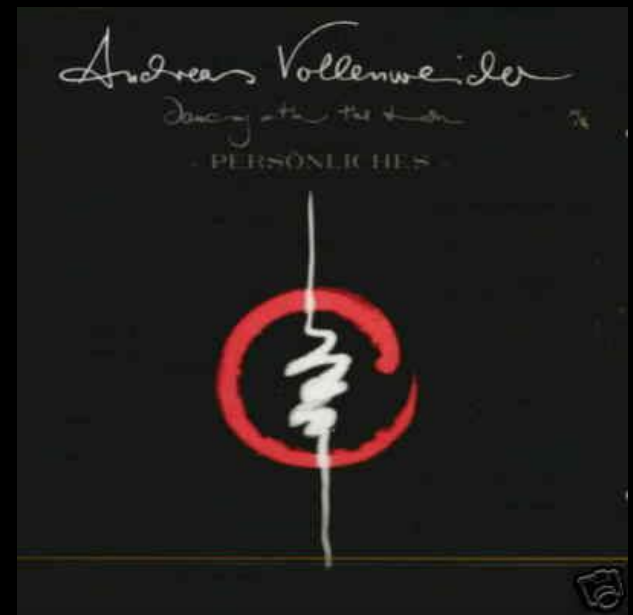
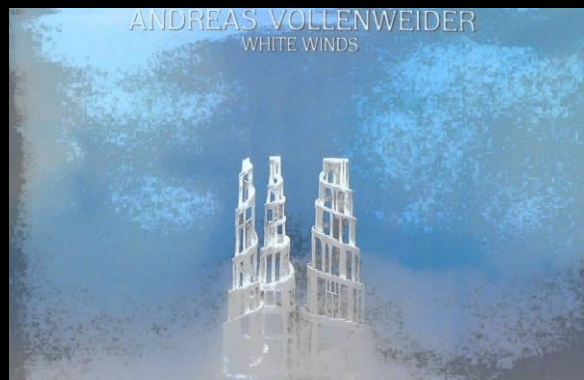
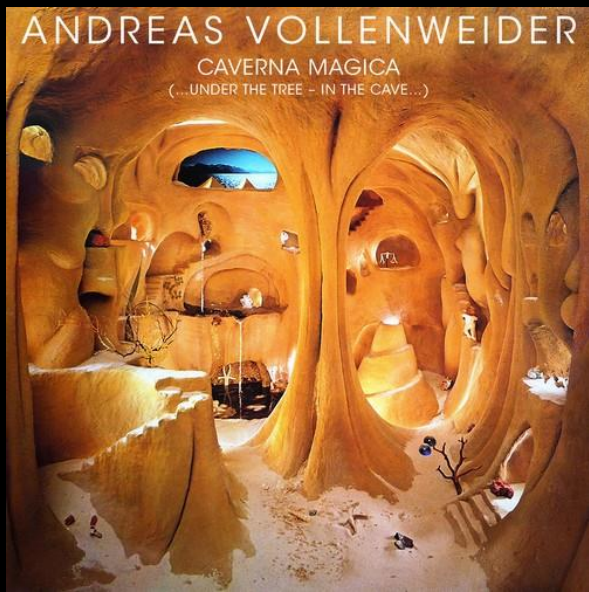
**There are three ways to ultimate success:  
The first way is to be kind.  
The second way is to be kind.  
The third way is to be kind.**

*Fred Rogers*

Think Differently.



Andreas Vollenweider  
Milwaukee, Wisconsin  
October 1998  
Photo by John Owrey



Bill Slater Welcomes Andreas Vollenweider  
to his 1998 United States Tour



# Thank You, South Carolina!





# Presenter Bio:

## William Favre Slater, III

- **Lives and Works in Chicago; Cybersecurity professional by day**
- **Current Position – CIO, CISO, Project Manager / Sr. IT Consultant at Slater Technologies, Inc.** Working on projects related to
  - Security reviews and auditing
  - DNS Security
  - Pentesting
  - Blockchain consulting
  - ISO 27001 Project Implementations
  - Providing subject matter expert services to Data Center product vendors and other local businesses.
  - Designing and creating a blockchain database application that streamlines program management, security management, risk management and reporting activities, for management of teams of IT workers and developers in teleworking environments. It will first be a Windows application and then be ported to the web.
  - Developing and presenting technical training materials for in the areas of Blockchain and Blockchain development, Data Center Operations, Data Center Architecture, Cybersecurity Management, and Information Technology hardware and software.
  - Happily married since 2000, to Ms. Joanna Roguska, a smart, beautiful, Sr. Web Developer from Warsaw, Poland, and she is my Best Friend & Soul Mate
  - A Certified Judo Instructor in Kodokan Judo, and holds a Nidan, a second degree Black belt in Judo.



*Slater Technologies*

# William Favre Slater, II

- 312-758-0307
- [slater@billslater.com](mailto:slater@billslater.com)
- [williamslater@gmail.com](mailto:williamslater@gmail.com)
- <http://billslater.com/interview>
- <http://billslater.com/writing>
- Slater Technologies, Inc.  
1515 W. Haddon Ave., Unit 309  
Chicago, IL 60642  
United States of America



William Favre Slater, III

*Slater Technologies*

# *Supplemental Slides*

# ***HOW TO BE ANONYMOUS ONLINE***

# Presentation Abstract

- In the day and age of big Data Breaches and loss of privacy, many people wonder how they can do a better job of guarding their privacy and their data, and possibly even attempting to be invisible or anonymous when they use the Internet. This presentation will cover the challenges of privacy, and the methods and tools that can be used to allow Internet users become anonymous and do a better job of guarding their digital privacy.

# How to Be Anonymous Online

## Agenda

- Introduction
- Legal Stuff
- The Problem
- Why Would You Want to Be Anonymous Online?
- 17 Steps to Being Completely Anonymous Online
- 17 Essential Tools to Protect Your Online Identity, Privacy
- Other Threats to Your Privacy and Identity – Life in The Surveillance Society
- Other Forms of Accomplishing Anonymity in Your Daily Life
- 10 Tips for Data Privacy in Businesses
- Advantages and Disadvantages
- Parting Thoughts
- Conclusion
- Questions
- References

# Introduction

- The creators of the ARPANET (1969) which evolved into the Internet (1983) created something that was designed to be simple, reliable, platform-independent, and perform well. The Internet population had 50 million users in less than four years, and today there are over 2.5 billion on the Internet. Since the Internet went “business critical” in 1997, lack of security and loss of privacy have been constant issues, and every year it has continued to get worse, leading to serious crimes involving hacking, identity theft, stalking, harassment, etc. It is no wonder then that many Internet users are pondering the idea of going online as anonymous users to protect their privacy. This presentation will address the problems related to lack of privacy, and how to plan and implement methods and tools to protect privacy. While many of these tools and techniques are free, it still requires regular efforts and knowledge to stay abreast of the threats, as well as the selecting the right tool at the right time to meet each threat. Suffice it to say that privacy protection must become a new way of operating on the Internet and using your smartphone, if it is to be done successfully.

# LEGAL STUFF



# 4<sup>th</sup> Amendment

## U.S. Constitution – Bill of Rights

### The 4th Amendment

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

# Data Privacy Laws by State

## Why Storing and Protecting Data Is Important: Evaluating State Data Breach Notification Laws

### Holding Out

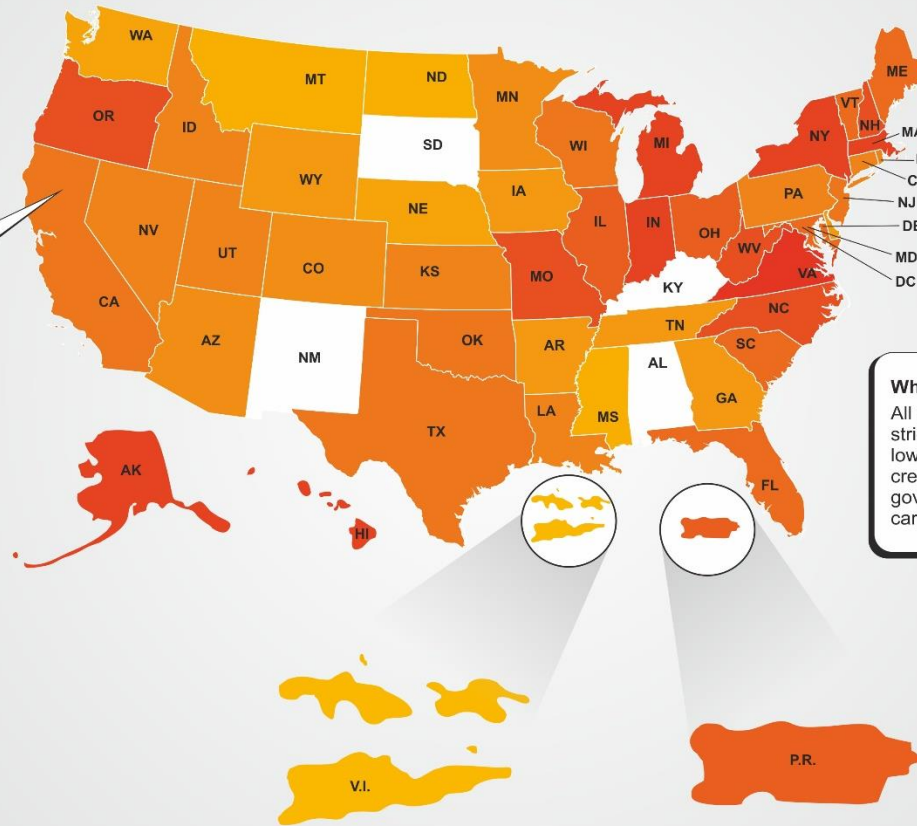
Four states have yet to enact a data breach notification law: Alabama, Kentucky, New Mexico, and South Dakota.

### The Original Standard

California was the first state to enact data breach notification legislation. The law went into effect on July 1, 2003. Outside the scope used in this analysis, California's laws include provisions specifically for credit reporting agencies and for businesses owning or maintaining medical data. Other states carry these provisions as well.

### Why Certain States Stand Out

All of the laws are strict, but the stricter laws include a relatively low bar triggering notification to credit reporting agencies and government entities. They also carry higher maximum fines.



\*Note: A score of zero means a data breach notification law does not exist in that state.

| State | Score |
|-------|-------|
| AL    | 0     |
| KY    | 0     |
| NM    | 0     |
| SD    | 0     |
| V.I.  | 5     |
| ND    | 6     |
| MS    | 7     |
| MT    | 7     |
| NE    | 7     |
| WA    | 7     |
| AR    | 8     |
| DE    | 8     |
| GA    | 8     |
| IA    | 8     |
| TN    | 8     |
| WY    | 8     |
| AZ    | 9     |
| CO    | 9     |
| MN    | 9     |
| CT    | 10    |
| ID    | 10    |
| KS    | 10    |
| LA    | 10    |
| NV    | 10    |
| PA    | 10    |
| RI    | 10    |
| UT    | 10    |
| CA    | 11    |
| NJ    | 11    |
| OK    | 11    |
| TX    | 11    |
| WI    | 11    |
| DC    | 12    |
| FL    | 12    |
| MD    | 12    |
| ME    | 12    |
| SC    | 12    |
| VT    | 12    |
| IL    | 13    |
| OH    | 13    |
| P.R.  | 13    |
| MO    | 14    |
| NC    | 14    |
| NH    | 14    |
| OR    | 14    |
| WV    | 14    |
| AK    | 15    |
| HI    | 15    |
| IN    | 15    |
| MA    | 15    |
| MI    | 15    |
| NY    | 15    |
| VA    | 16    |

Less strict



More strict

Key: The darker the state, the more strict the law

imation

SOURCE: Imentation Corp. based on evaluation of individual state laws obtained via National Conference of State Legislatures website and evaluations available publicly online from various law firms.  
NOTE: This information should not be considered legal advice and is not based on a legal analysis of the laws. Check with your attorney regarding laws applicable to your business.  
As of July 2, 2012.

Imentation is a global scalable storage and data security company. For more information, visit: [www.imation.com/compliancemap](http://www.imation.com/compliancemap)

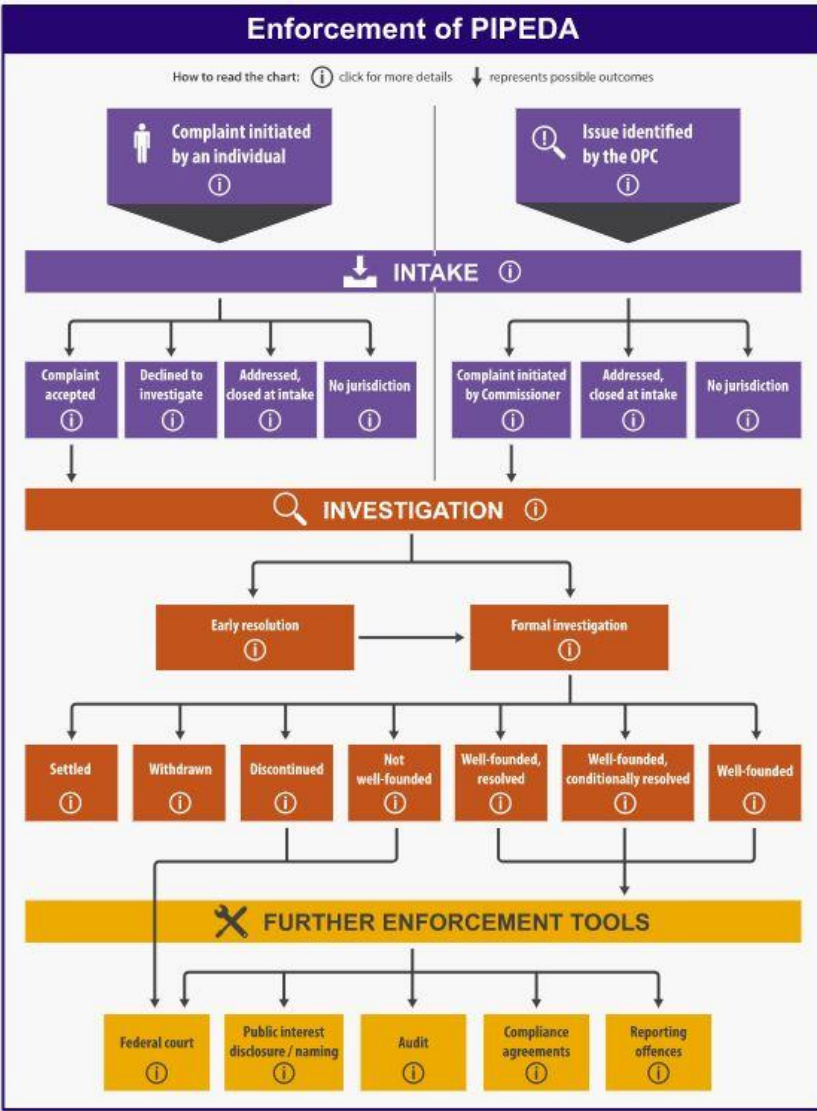
# Personal Information Protection and Electronic Documents Act (PIPEDA)

Canadian Federal  
Data Privacy  
Law Enforcement



PIPEDA has established 10 privacy principles for the collection, use, disclosure, and retention of personal information. These are good standards to follow in any province.

- Accountability
- Identifying purpose
- Consent
- Limiting collection
- Limiting use, disclosure, retention
- Accuracy
- Safeguards
- Openness
- Individual access
- Challenging compliance



Office of the  
Privacy Commissioner  
of Canada

Commissariat  
à la protection de  
la vie privée du Canada

# March 6, 2018

- State of Illinois Attorney General Lisa Madigan noted that the number one consumer crime that was reported in 2017 was Identity Theft, and this surge was largely due to data breaches like the Equifax Data Breach of 2017.

1. Identity Theft (credit cards, data breaches, utilities, government document fraud) -- 2,511 complaints
2. Education (student loan debt, loan counseling, for-profit schools) -- 2,399 complaints
3. Consumer Debt (collection agencies, mortgages, banks) -- 2,395 complaints
4. Construction/Home Improvement (remodeling, roofs and gutters, heating and cooling, plumbing) -- 2,113 complaints
5. Telecommunications (cable and satellite TV, telemarketing, cell phones, phone service and repairs) -- 2,031 complaints
6. Promotions/Schemes (phone scams, lottery scams, investment schemes, phishing) -- 2,004 complaints
7. Used Auto Sales (as-is used cars, financing, advertising, warranties) -- 1,728 complaints
8. Internet/Mail Order Products (internet and catalog purchases, TV and radio advertising) -- 1,071 complaints
9. Motor Vehicle/Non-Warranty Repair (collision, engines, oil changes and tune-ups) -- 656 complaints
10. New Auto Sales (financing, defects, advertising) -- 629 complaints

# Why Would You Want to Be Anonymous Online?

- Self-Preservation
- Reputation Protection
- You're a private person
- The massive amount of news on Data Breaches and Hack Attacks is sinking in
- You want to take back control of your online life
- Paranoia



# The Biggest Threats to Your Online Privacy



## GOVERNMENT INTELLIGENCE

Many governments can easily collect information on their citizens.



Encrypt your data and use a VPN to keep your personal information private.



## BROWSER AND WEBSITE DATA SHARING

Web browsers routinely collect and retain certain basic information about your internet connection and online activity.



Regularly clear your cache and cookies and configure your browser to protect you from tracking.



## SEARCH ENGINES

Google and other search engines collect information about you every day, sometimes passing it on to third parties.



Use an alternative search engine that doesn't collect user data, such as DuckDuckGo.



## NON-SECURE WEBSITES

Your ISP and other third parties can view any information you exchange with a non-secure website.



Be sure to check if the websites you visit have URLs beginning with https://.



## MALWARE

Malware can create a backdoor, giving cybercriminals access to your device and data.



Invest in reliable anti-malware and firewall software for your computer and mobile devices.



## CLOUD STORAGE

Most popular cloud storage services reserve the right to share your data with the authorities.



Manually encrypt your files before uploading them to the cloud.



## SOCIAL MEDIA AND EMAIL CORRESPONDENCE

Some social media platforms sell your information to advertisers, while email service providers can be compelled to hand over your information to the government.



Stay informed on social media privacy policies and settings. Encrypt your email or use a privacy-oriented service like ProtonMail.

# Biggest Threats to Your Online Privacy

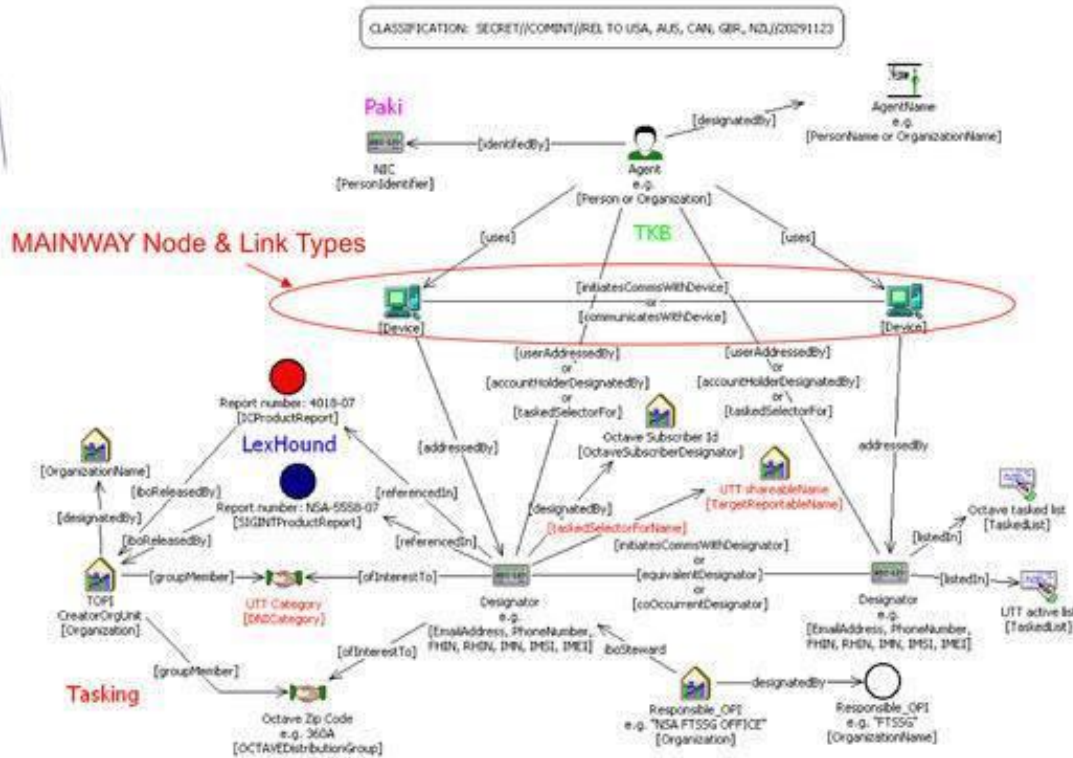
The NSA – The  
Only Branch  
Of  
Government  
That Really  
Listens to You

---



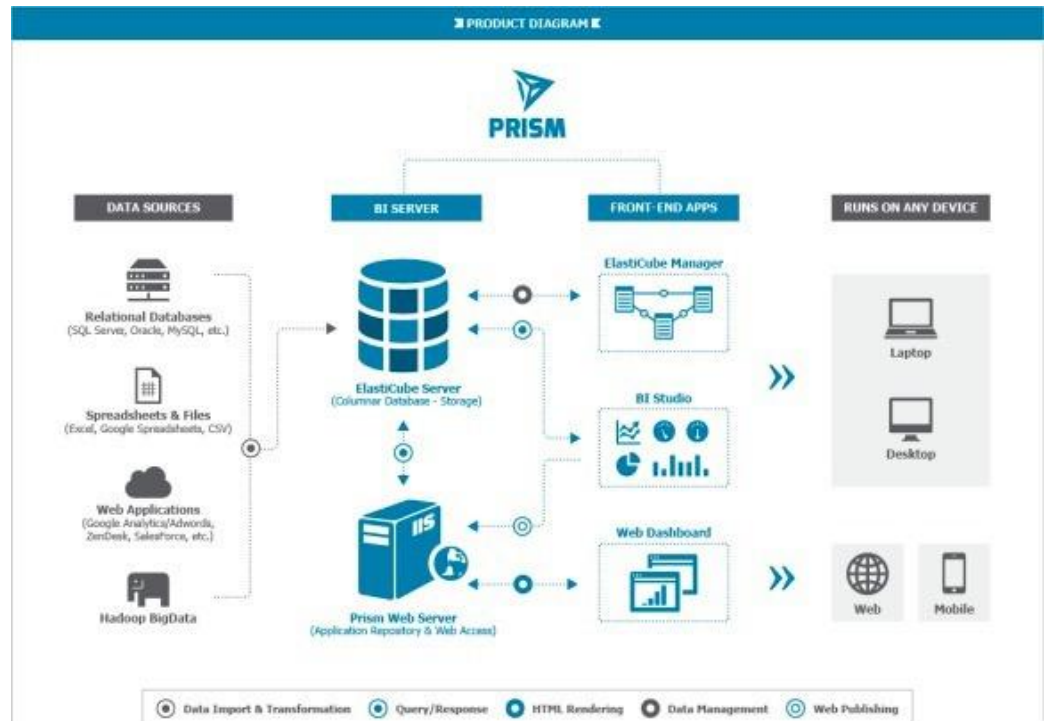
# NSA

## (S//SI//REL USA, FVEY) SYANPSE Data Model



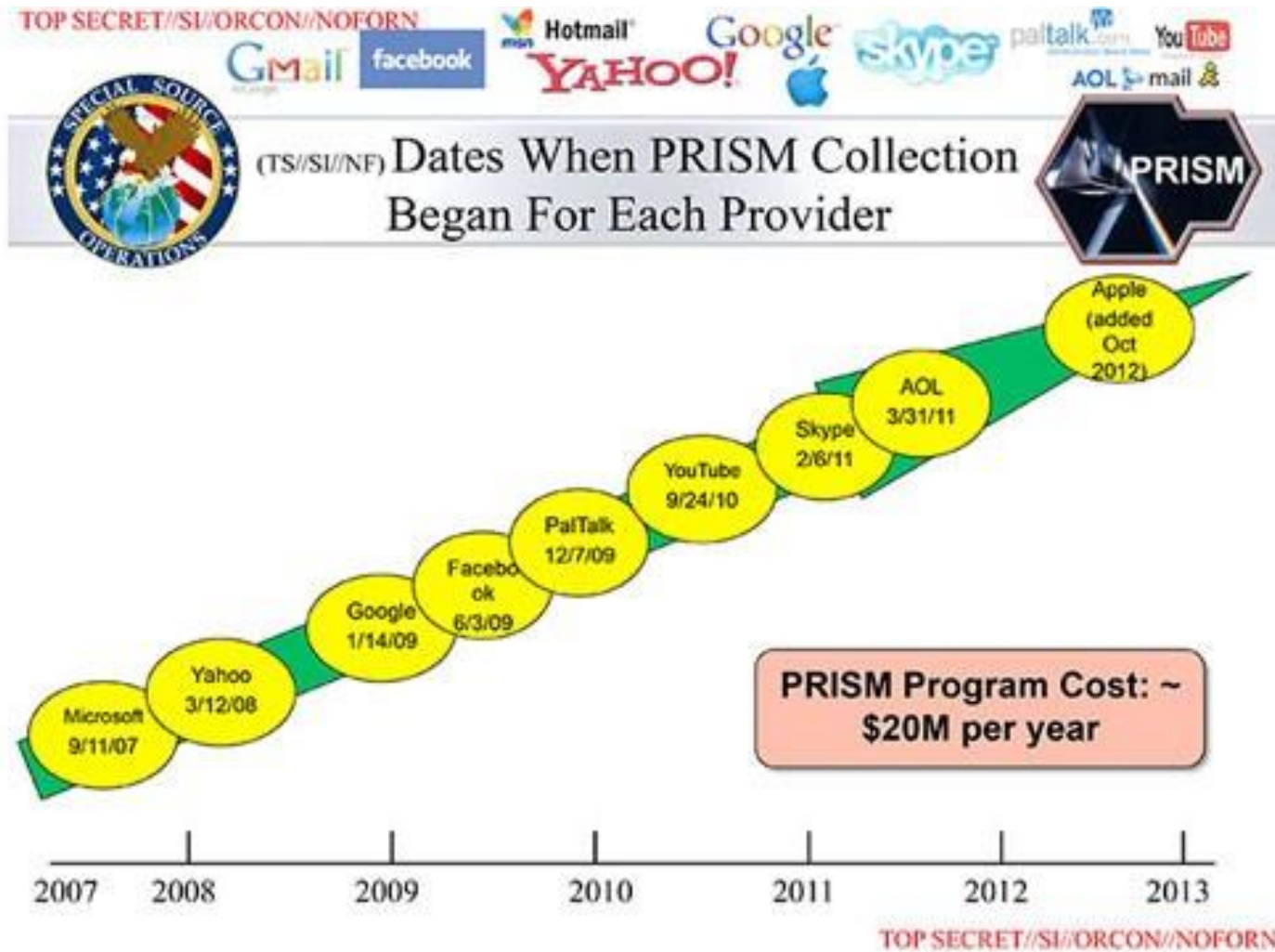


# NSA



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# NSA and Large Internet Companies



NSA –  
*Always Be  
Careful  
What You  
Say or  
Enter  
Online*

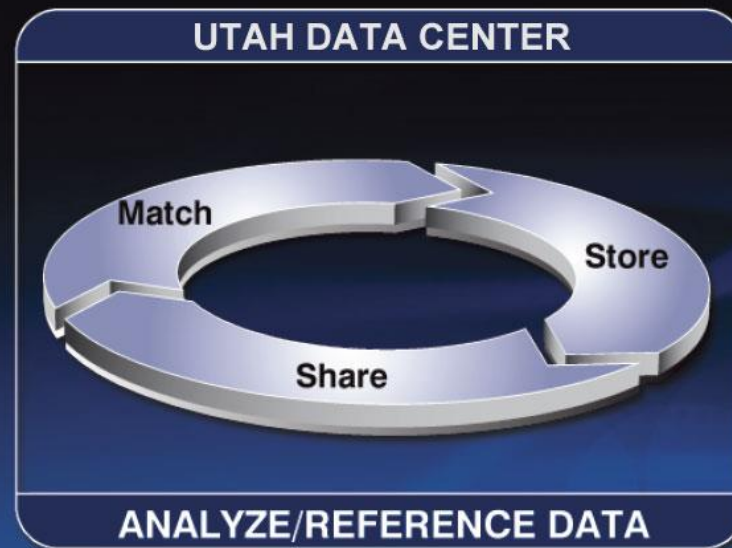


# What the NSA Collects

## Citizen Data

Website visits  
Internet searches  
Phone calls  
Skype calls  
Emails  
Text messages  
Credit card information  
Financial information  
Legal documents  
Travel documents  
Health records

Collect



Decide Act

## Operational Applications

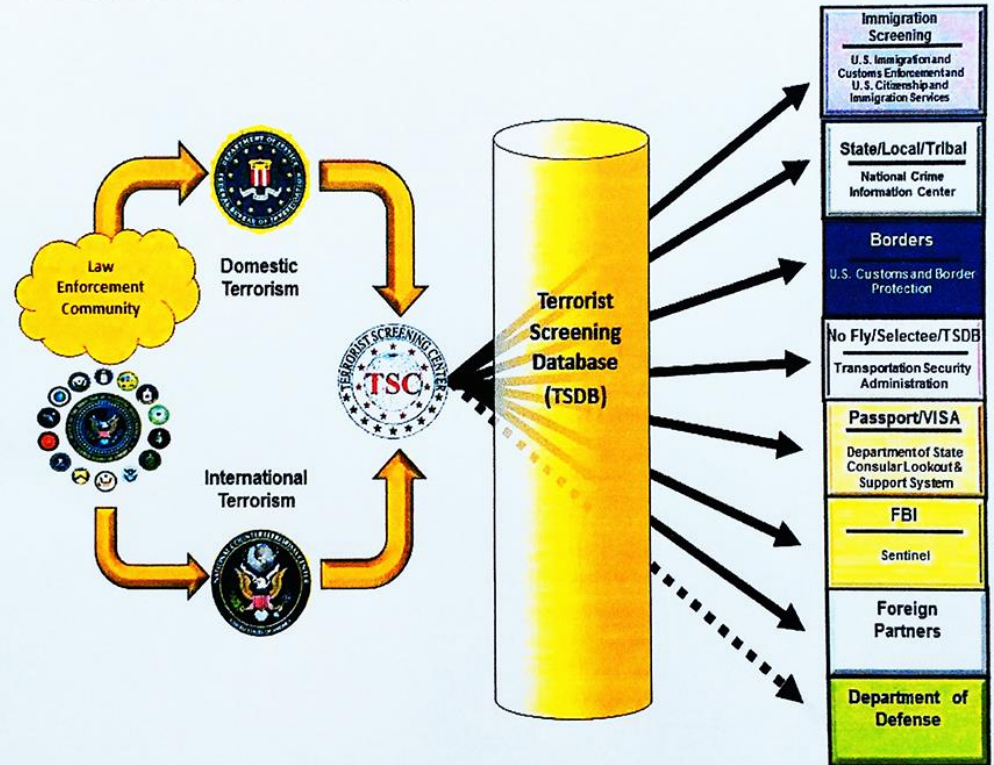
Data Warehouse  
Surveillance and Monitoring  
Suspicious Activity Reporting (SAR)  
Terrorist Screening Center Alert

Source: nsa.gov/info

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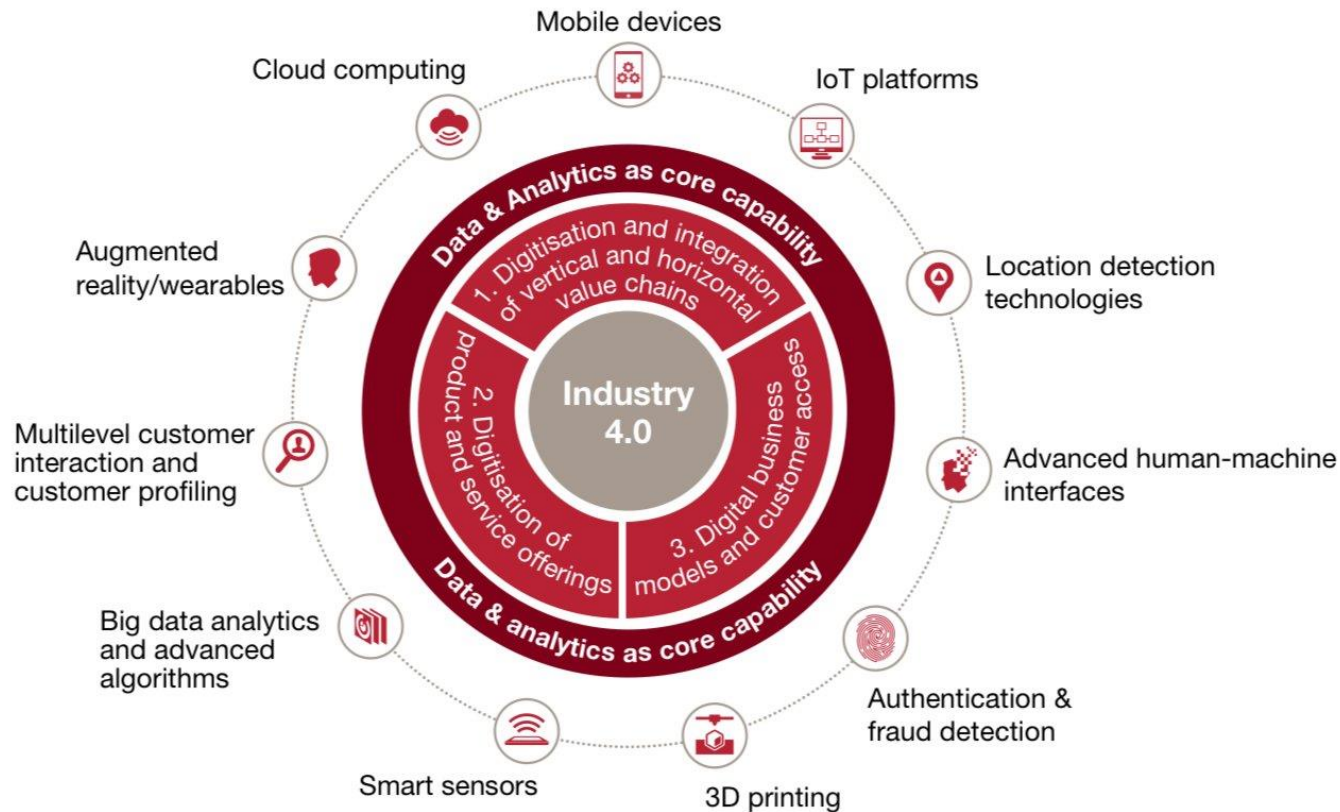
# NSA – Be Careful What You Say or Enter Online

1.32 **Collection, Nomination, Consolidation and the Use of the Terrorist Watchlist to Perform Screening Processes.** The following is a chart depicting the collection, TERRORIST nomination, consolidation and screening processes:



# Data Science and Data Analytics Is Driving Industry 4.0

## Industry 4.0 framework and contributing digital technologies

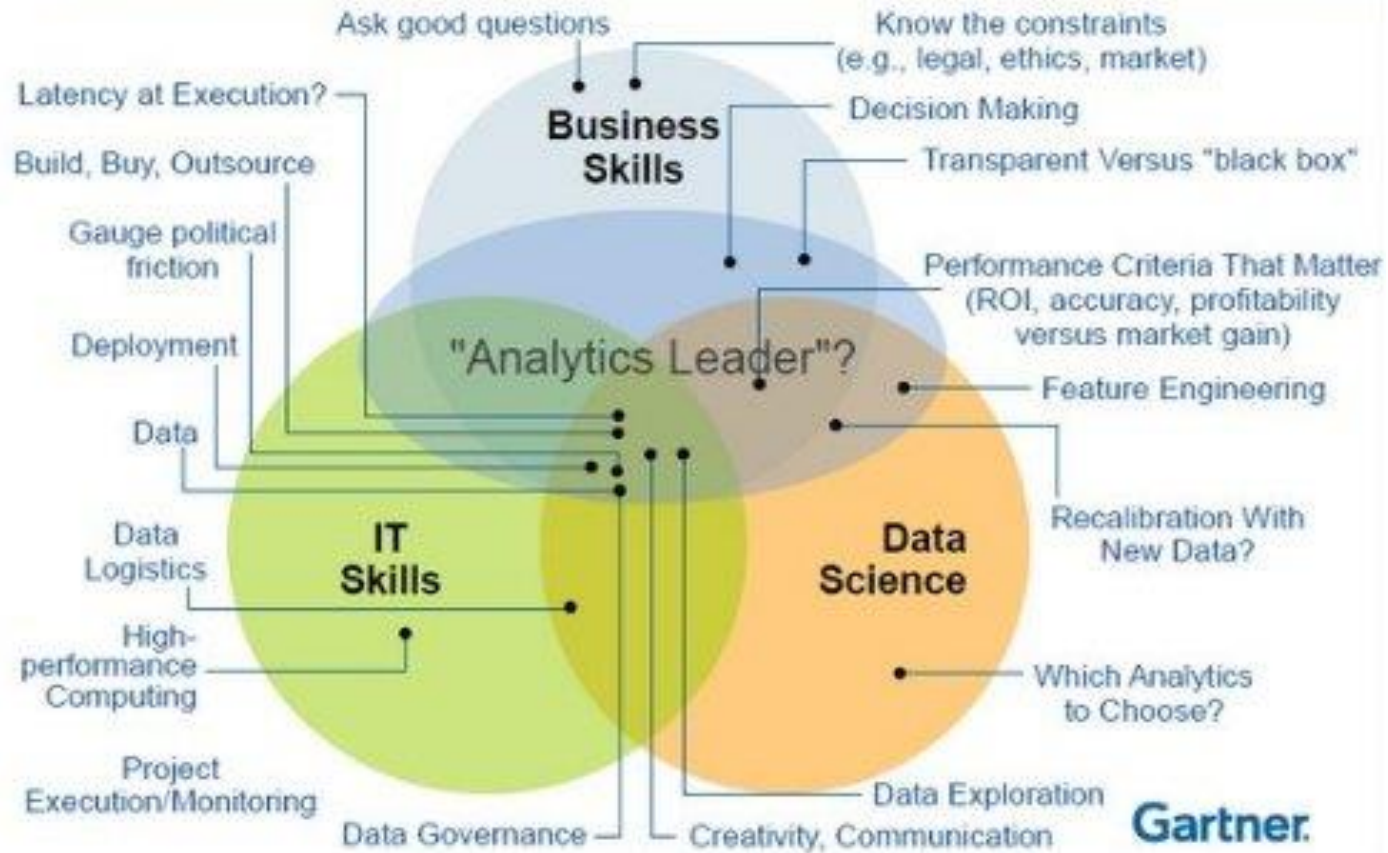


source pwc via @mikequindazzi

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# Data Science Has Become a Huge Industry

## Driving the Success of Data Science Solutions: Skills, Roles and Responsibilities ...



# 17 Ways to Being Completely Anonymous Online

1. Find a safe country that values privacy
2. Get an anonymizing operating system
3. Use an anonymous VPN
4. Use Tor
5. Don't use plug-ins
6. Stick with HTTPS
7. Avoid the usual applications
8. Set up anonymous burner accounts
9. Never use credit cards
10. Test for DNS leaks and browser tracking
11. Test your overall privacy protection
12. Share files anonymously
13. Use a search engine that doesn't track your behavior
14. Turn off your location
15. Block Javascript
16. Keep your webmail private
17. Delete cookies and your browsing history

Source: 17 Ways to Being Completely Anonymous Online:  
<https://www.csoonline.com/article/2975193/data-protection/9-steps-completely-anonymous-online.html>

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# 17 Essential Tools to Protect Your Online Identity, Privacy

1. TPM
2. UEFI BIOS
3. Secure storage (encrypted)
4. Two-factor authentication
5. Logon account lockout
6. Remote find
7. Remote wipe
8. Secure VPN
9. Tor
10. Anonymity services
11. Anonymity hardware
12. Secure browsing
13. Secure e-mail
14. Secure chat
15. Secure payments
16. Secure file transfers
17. Anything Phil Zimmerman creates

Source: 17 Essential Tools to Protect Your Online Identity, Privacy:  
<https://www.infoworld.com/article/3135324/security/17-essential-tools-to-protect-your-online-identity-and-privacy.html>

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# THREE ADDITIONAL FREE TOOLS

# haveibeenpwned.com

Secure | https://haveibeenpwned.com



Home

Notify me


Domain search

Who's been pwned

Passwords

API

About

Donate 

## ';--have i been pwned?

Check if you have an account that has been compromised in a data breach

pwned?

270

pwned websites

4,948,721,769

pwned accounts













64,652

pastes

71,704,180

paste accounts

### Top 10 breaches

-  711,477,622 Onliner Spambot accounts 
-  593,427,119 Exploit.In accounts 
-  457,962,538 Anti Public Combo List accounts 
-  393,430,309 River City Media Spam List accounts 
-  359,420,698 MySpace accounts
-  234,842,089 NetEase accounts 
-  164,611,595 LinkedIn accounts

# panoptick.eff.org

Secure | <https://panoptick.eff.org>

A RESEARCH PROJECT OF THE ELECTRONIC FRONTIER FOUNDATION [DONATE](#)

## PANOPTICK<sub>3.0</sub>

### Is your browser safe against tracking?

When you visit a website, online trackers and the site itself may be able to identify you – even if you’ve installed software to protect yourself. It’s possible to configure your browser to thwart tracking, but many people don’t know how.

Panoptick will analyze how well your browser and add-ons protect you against online tracking techniques. We’ll also see if your system is uniquely configured—and thus identifiable—even if you are using privacy-protective software.


[TEST ME](#)

Test with a real tracking company [what's this?](#)

Only **anonymous data** will be collected through this site.

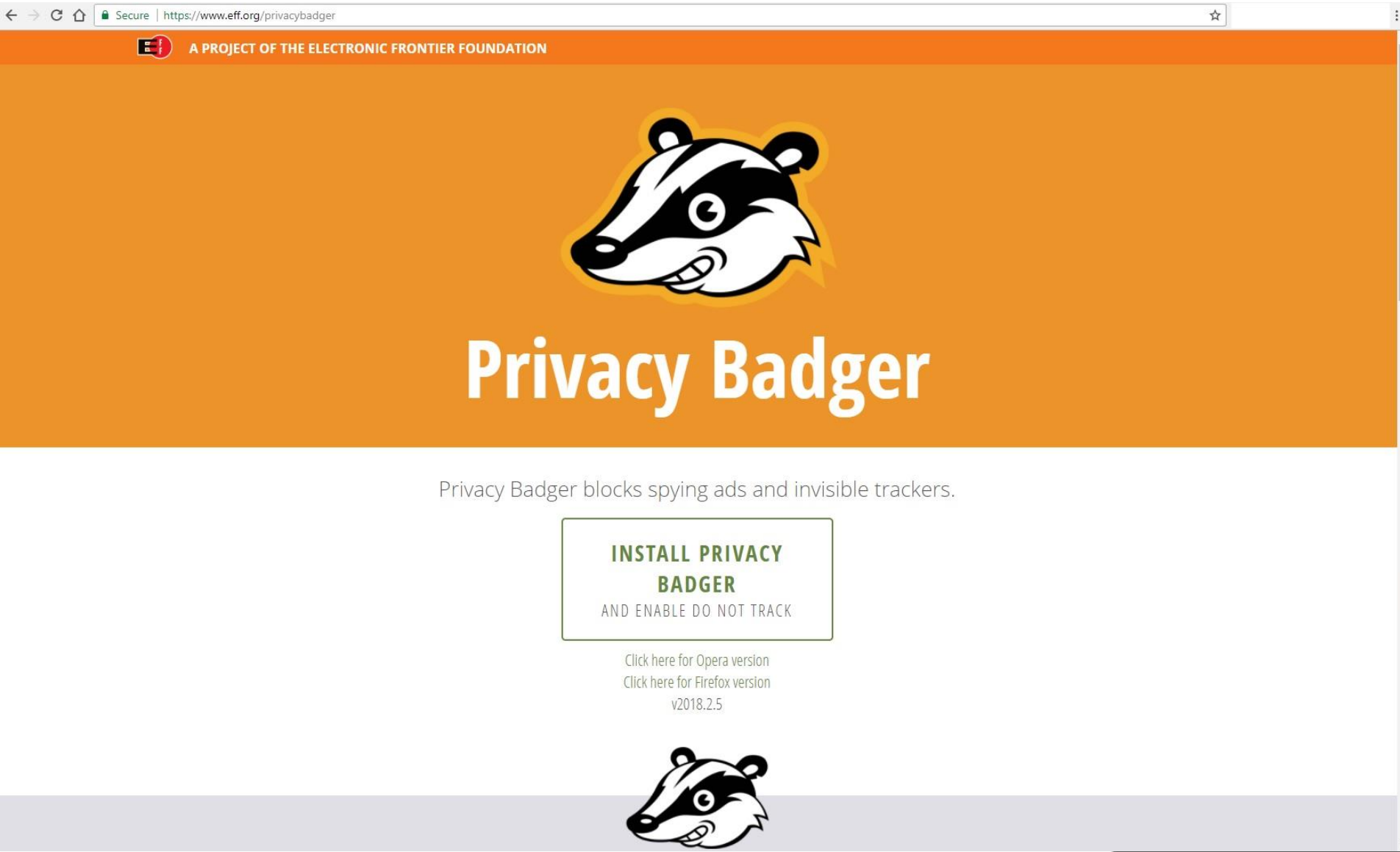
Panoptick is a research project of the Electronic Frontier Foundation. [Learn more](#)

[SHARE ON FACEBOOK](#) [SHARE ON TWITTER](#) [SHARE ON GOOGLE+](#)

 A RESEARCH PROJECT OF THE ELECTRONIC FRONTIER FOUNDATION

[ABOUT PANOPTICK](#) [DONATE TO EFF](#) [CONTACT](#) [PRIVACY](#) [CC-LICENSE](#)


# www.eff.org/privacybadger



The screenshot shows the Privacy Badger website. At the top, the browser address bar displays "Secure | https://www.eff.org/privacybadger". Below the address bar is an orange navigation bar with the EFF logo and the text "A PROJECT OF THE ELECTRONIC FRONTIER FOUNDATION". The main content area has an orange background with a large, stylized badger head logo. Below the logo, the text "Privacy Badger" is written in a large, white, sans-serif font. Underneath this, a white box contains the text "INSTALL PRIVACY BADGER AND ENABLE DO NOT TRACK" in green and black. Below the box, there are two links: "Click here for Opera version" and "Click here for Firefox version v2018.2.5". At the bottom of the page, there is a smaller version of the badger head logo.

Secure | https://www.eff.org/privacybadger

A PROJECT OF THE ELECTRONIC FRONTIER FOUNDATION




## Privacy Badger

Privacy Badger blocks spying ads and invisible trackers.

**INSTALL PRIVACY  
BADGER**  
AND ENABLE DO NOT TRACK

[Click here for Opera version](#)  
[Click here for Firefox version  
v2018.2.5](#)



# Other Threats to Your Privacy and Identity

## – Life in The Surveillance Society

- NSA
- FBI
- Local Police – Sting Ray
- Your Big Screen Digital TV
- Your Grocery Store
- Retail stores – everywhere you use a credit or debit card
- Your Cell Phone
- Internet of Things Devices (Think **Amazon Echo**)
- Surveillance Satellites
- Drones
- Private Eyes (Detectives)
- Nosey and Untrustworthy Neighbors
- Untrustworthy Family Members and Friends
- Bad Actors



# Other Threats to Your Privacy and Identity

- Life in The Surveillance Society



# What Google Knows

Google compiles enough data to build comprehensive portfolios of most users—who they are, where they go and what they do—and the information is all available at [google.com/dashboard](https://google.com/dashboard). Here are just a few things WSJ reporter Tom Gara found out about himself.

## GOOGLE SEARCH 64,019

Google thinks Tom performs most of his searches around 8 a.m. ET, but this is probably skewed by years spent outside the U.S.

## ANDROID DEVICES 3



Google knows all of Tom's synched Android phones, including the old Nexus S phone that he gave to his mom.

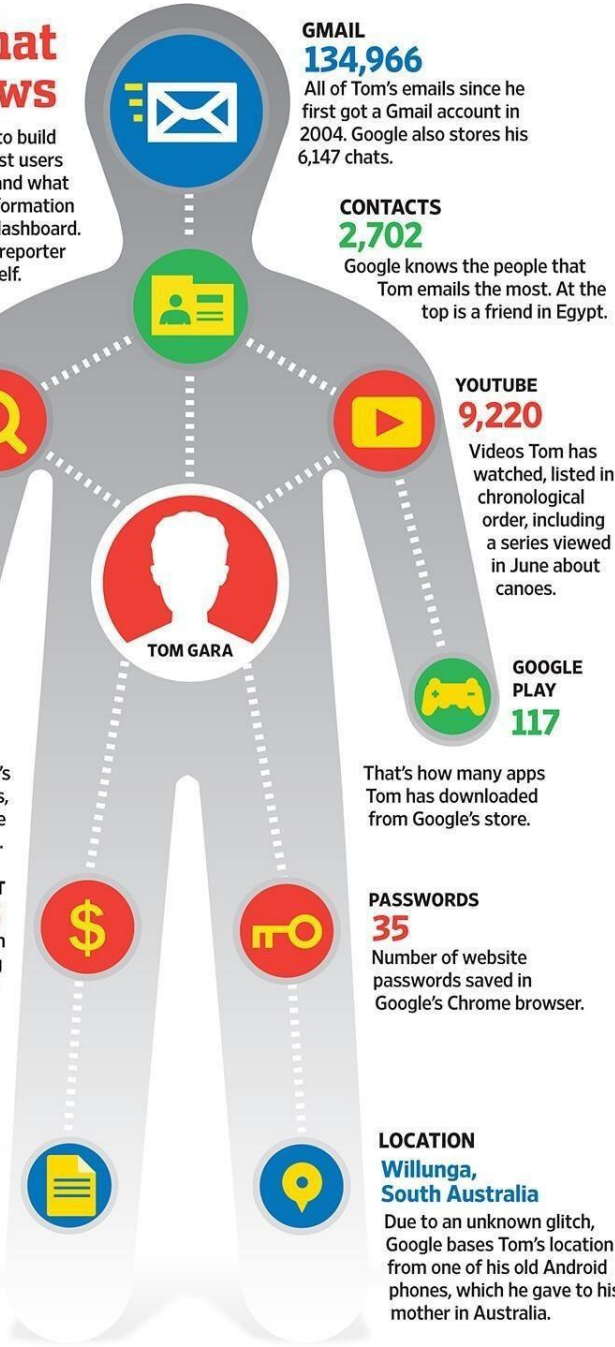
## WALLET 3

Credit cards (two expired) saved in Google Wallet, plus two shipping addresses and 13 itemized purchases since June 2009.

## DOCS 855

Documents Tom has created, plus the 115 he has opened that belong to other people.

Graphic by Alberto Cervantes/  
The Wall Street Journal



## GMAIL 134,966

All of Tom's emails since he first got a Gmail account in 2004. Google also stores his 6,147 chats.

## CONTACTS 2,702

Google knows the people that Tom emails the most. At the top is a friend in Egypt.

## YOUTUBE 9,220

Videos Tom has watched, listed in chronological order, including a series viewed in June about canoes.

## GOOGLE PLAY 117

That's how many apps Tom has downloaded from Google's store.

## PASSWORDS 35

Number of website passwords saved in Google's Chrome browser.

## LOCATION Willunga, South Australia

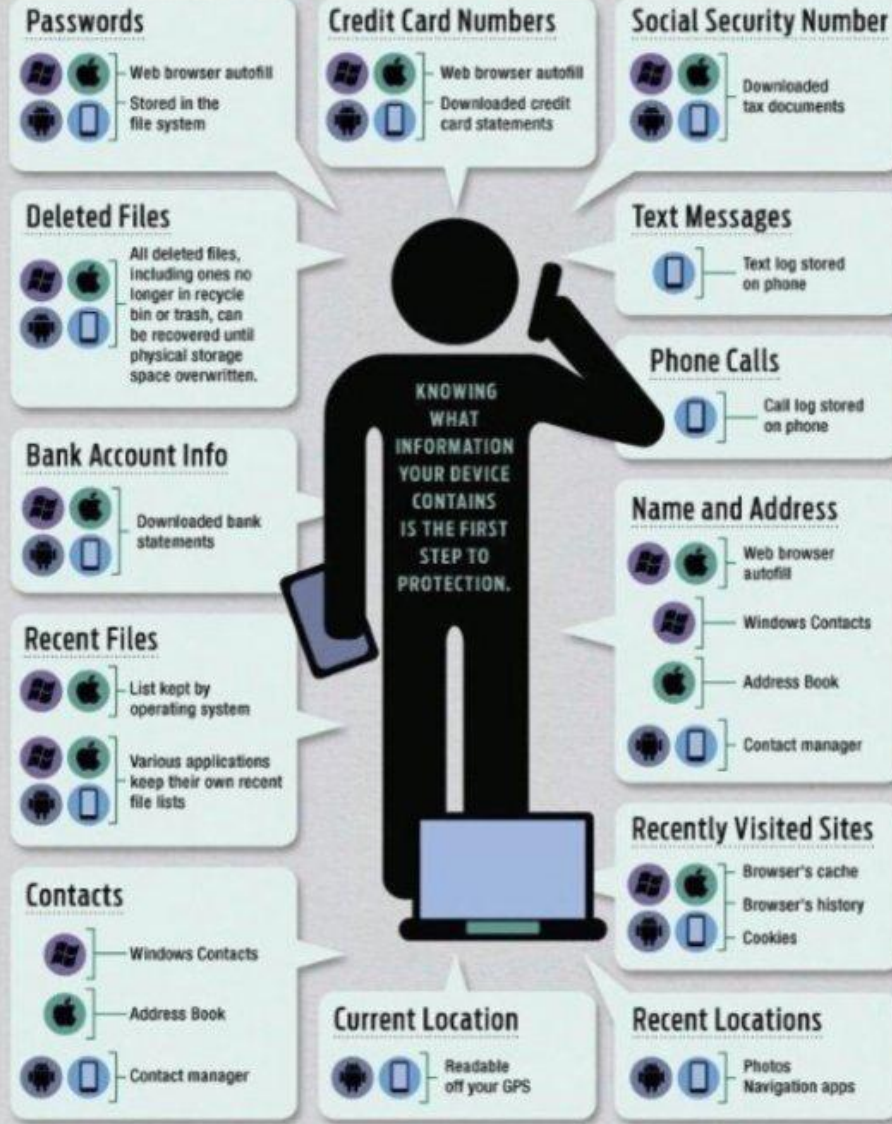
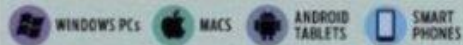
Due to an unknown glitch, Google bases Tom's location from one of his old Android phones, which he gave to his mother in Australia.

# Other Threats to Your Privacy and Identity – Life in The Surveillance Society



# WHAT DO YOUR DEVICES KNOW ABOUT YOU?

Whether it's a computer on your desk or a phone in your pocket, your devices retain a lot of personal data. And all of that information may be vulnerable to cybercriminals.



# Other Threats to Your Privacy and Identity – Life in The Surveillance Society

# Other Forms of Accomplishing Anonymity in Your Daily Life

- Block your webcam on every computer you use.
- Vary your travel routines for work and recreation.
- Never throw anything away with your name and address on it.
- Get your mail and packages at a commercial package delivery store.
- Never give your phone numbers or address to anyone.
- Trust No One.



**TRUST  
NO ONE**

*Slater Technologies*

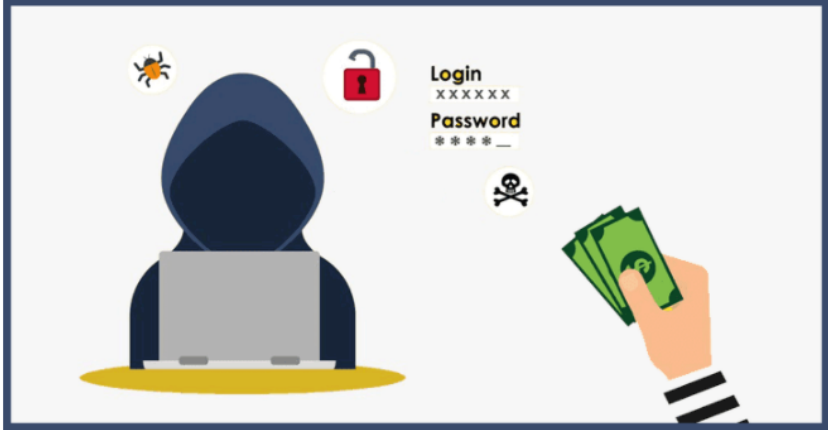
# Big Caution About the Dark Web

- Some people go Anonymous so they can do illegal things on The Dark Web
- If you know such people, let them know they can be caught and prosecuted

## Hacker Who Never Hacked Anyone Gets 33-Month Prison Sentence

Tuesday, February 27, 2018 Mohit Kumar

Share Tweet Share Mail Share



A hacker who was arrested and pleaded guilty last year—not because he hacked someone, but for creating and selling a remote access trojan that helped cyber criminals—has finally been sentenced to serve almost three years in prison.

Taylor Huddleston, 26, of Hot Springs, Arkansas, pleaded guilty in July 2017 to one charge of aiding and abetting computer intrusions by building and intentionally selling a remote access trojan (RAT), called NanoCore, to hackers for \$25.

Huddleston was arrested in March, almost two months before the FBI raided his house in Hot Springs, Arkansas and left with his computers after 90 minutes, only to return eight weeks later with handcuffs.

This case is a rare example of the US Department of Justice (DOJ) charging someone not for actively using malware to hack victims' computers, but for developing and selling it to other cybercriminals.

Huddleston admitted to the court that he created his software knowing it would be used by other cybercriminals to break the law.

# Advantages and Disadvantages of Being Anonymous Online

## Advantages

- Risk avoidance.
- You get to have privacy and protect yourself and your personal data from the perils of data leakage.
- You will make it very difficult for the bad guys to steal your data and cause hurt and/or damage.
- You will become a data privacy subject matter expert and role model for your family, friends, and colleagues.

## Disadvantages

- It's a never-ending effort if you are actively using the Internet via a laptop, desktop, and or smartphone.
- Essentially, you must always stay vigilant to protect yourself.
- Well-intentioned people may find it difficult to reach you.
- People may think you have dark intentions for going anonymous
- People will think you are paranoid.

# 10 Privacy Tips for Businesses

1. Limit your collection and retention of personal information.
2. Know what personal information you collect, where you store it and what you do with it.
3. Ensure staff receive appropriate privacy protection training.
4. Limit and monitor access to personal information and take appropriate action when an employee accesses information without authorization.
5. Think twice before collecting sensitive personal information, such as driver's licenses.
6. Inform customers if you are using video surveillance.
7. Have a privacy policy and be upfront about your collection and use of personal information.
8. Protect personal information on laptops, USB keys and portable hard drives through technological safeguards such as encryption and password protection.
9. Respond to requests for access to personal information in a timely manner.
10. Make sure your customers know who to speak to if they have questions about privacy.

Source: 10 Privacy Tips for Businesses [https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/pipeda-compliance-help/pipeda-compliance-and-training-tools/tips-bus\\_info\\_201501/](https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/pipeda-compliance-help/pipeda-compliance-and-training-tools/tips-bus_info_201501/)

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# Parting Thoughts - 001:

U.S. Government Surveillance Capability Was Officially Revealed by U.S. Senator Frank Church (D. – Idaho) on Meet the Press in August 1975

- To understand the Genesis of U.S. Government Surveillance and the Power that has now accumulated in the **Executive Branch of the U.S. Federal Government**, please view this very brief **August 17, 1975** video with prescient comments about powerful and growing surveillance capabilities, **“Government Tyranny”** and **“the Abyss”** by **Senator Frank Church**, Chairman of the Senate Committee on Intelligence Activities on NBC’s Meet the Press.



Senator Frank Church

Source: NBC NEWS Meet the press Interview with Senator Frank Church  
Retrieved from <https://www.youtube.com/watch?v=YAG1N4a84Dk>

# Parting Thoughts - 002:

Amazon allows Echo to spy on you.



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# Conclusion

- Threats to our privacy and PII are pervasive and ubiquitous
- You must work diligently to maintain your privacy, particularly in the U.S.
- There are modern tools and methods to help maintain your privacy and anonymity.
- Consequences of leaked PII are significant, especially when it's YOUR data
- As Cybersecurity professionals, we have a responsibility to understand the importance of and best methods for data and privacy protection.





# Questions?



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