

Tech Talks

Technology for Seniors

Glen Maxson

Living U

Fall 2020 – Session 1 of 3

www.seniortechadvisor.com (link to this presentation)

Who Am I?



Glen Maxson

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What we'll cover in 3 weeks

- 1) ~~Computers & Operating Systems~~
- 2) ~~Applications & The Cloud~~
- 3) The Internet & The Web
- 4) Social Media
- 5) Security & Privacy
- 6) ~~Entertainment & IoT~~

*But before we begin,
a brief history lesson is in order*

Credit Where Credit is Due

[Walter Isaacson](#) (born May 20, 1952)[2] is an American writer and journalist. He is the President and CEO of the Aspen Institute, a nonpartisan educational and policy studies organization based in Washington, D.C. He has been the chairman and CEO of Cable News Network (CNN) and the Managing Editor of *Time*. He has written biographies of Steve Jobs, Benjamin Franklin, Albert Einstein, and Henry Kissinger. [video](#)

Walter Isaacson, a versatile and workmanlike author, has never sounded as excited by his material as he does in "The Innovators." It may be that he has the same basic qualifications as many of the people he writes about here: "My father and uncles were electrical engineers, and like many of the characters in this book, I grew up with a basement workshop that had circuit boards to be soldered, radios to be opened, tubes to be tested, and boxes of transistors and resistors to be sorted and deployed."

Mr. Isaacson, who is 62, sounds as if he required no hindsight to know what thrilling times he grew up in. With the strain of romanticism that unites so many of the scientists that this book celebrates, he equates the postwar era with Wordsworth's description of those who witnessed the start of the French Revolution: "[Bliss was it in that dawn to be alive.](#)"

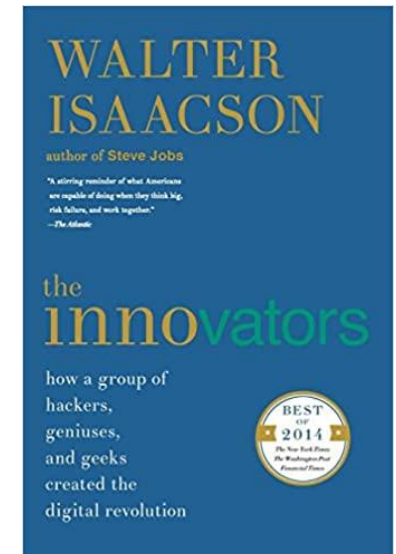
[Walter Isaacson: "The Innovators", Talks at Google](#)

[The Innovators: How a Group of Inventors Hackers Geniuses and Geeks Created](#)

[The Digital Revolution](#), UCTV(10:29 -44:35)

[Walter Isaacson on the Innovative Genius](#), 92Y Plus

[Walter Isaacson talks about Steve Jobs](#), The Aspen Institute



As We All Know

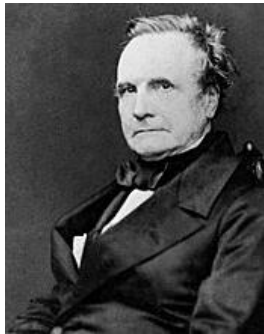
The Universe and everything in it
was created in 6 days

The Internet was created in just 5

In the Beginning – Day 1 (1822 – 1849)

- Someone had to invent the ‘Computer’
 - Credit goes to Charles Babbage and Ada, Countess of Lovelace

1837



Charles Babbage credited with inventing the first [mechanical computer](#)

1843



Ada, Countess of Lovelace, publishes "Notes" on Babbage's Analytical Engine.

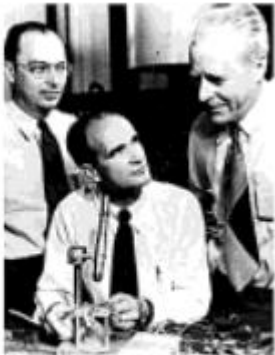
[Charles Babbage](#) – mathematician, philosopher, inventor and engineer, he originated the concept of a digital programmable computer. Even though his [Difference Engine](#) wasn't completed in his life time, a finished machine built in 1991 proved it would have worked. Functioning digital computers became operational 100 years later – Babbage's work (1822-1849), functional computers (1944-1946)

[Ada \(Countess of Lovelace\)](#) – English mathematician and writer, worked with Babbage on the [Analytical Engine](#), regarded as the 1st to recognize the full potential of a [computing machine](#) and the 1st computer programmer - 1843

Day 2 (1947)

- Someone needed to invent the ‘Transistor’
 - A **transistor** is a [semiconductor device](#) used to [amplify](#) or [switch electronic](#) signals and [electrical power](#). Today, transistors are packaged individually, but most are embedded in [integrated circuits](#).

1947



Transistor invented at Bell Labs.

John Bardeen
Walter Brattain
William Shockley

- [John Bardeen](#) – quantum theorist, tasked to explain why early experiments failed, then focus on new ‘surface state’ experiments
- [Walter Brattain](#) – the ‘lazy physicist’, deft experimentalist, working side-by-side with Bardeen
- December 16, 1947 – [Bell Labs](#) – a strip of gold foil, a chip of semiconducting material, and a bent paper clip – a working transistor had been invented by Bardeen and Brattain
- When Bardeen gets home, he tells his wife “**We discovered something important today.**” – *perhaps the understatement of the century...*



Day 3 (1952)

- We had to figure out how to make computers useful – we needed programmers

1952



Grace Hopper develops first computer compiler.

- [Grace Hopper](#) and the '6 women of [ENIAC](#)

Dr. Grace Hopper told a reporter, programming was “just like planning a dinner. You have to plan ahead and schedule everything so that it’s ready when you need it.... Women are ‘naturals’ at computer programming.”



[Marlyn Meltzer](#)



[Ruth Lichterman](#)



[Betty Jennings](#)



[Kay McNulty](#)



[Betty Snyder](#)



[Frances Bilas](#)

Day 4 (1958)

- Someone had to invent the **integrated circuit** (also referred to as an **IC**, a **chip**, or a **microchip**) - a set of [electronic circuits](#) on one small flat piece (or "chip") of [semiconductor material](#), normally [silicon](#) ([video](#))

1958



Jack Kilby demonstrates integrated circuit, or microchip.



[Gordon Moore](#), [C. Sheldon Roberts](#), [Eugene Kleiner](#), [Robert Noyce](#), [Victor Grinich](#), [Julius Blank](#), [Jean Hoerni](#) and [Jay Last](#). (1960)

[Texas Instruments](#) – [Jack Kilby](#), September 1958 demonstrates the integrated circuit – “A new era in electronics had begun.”

[Fairchild Semiconductor](#) (established by the ‘[Traitorous Eight](#)’) funded by [Sherman Fairchild](#) – [Jean Hoerni](#), physicist, proposes building up an oxide layer on the surface of the transistor (dubbed ‘the planar process’), then engrave tiny windows in the oxide layer to diffuse impurities at precise spots to create desired semiconductor properties

Day 5 (1960 – 1968)

- Someone needed to create the Internet

- The [Internet](#) was built in partnership among the military, universities, and private corporations – the military-industrial-academic complex
- It is a global system of interconnected [computer networks](#) that use the [Internet protocol suite](#) (TCP/IP) to link devices worldwide. It is a network of networks.

1960



J. C. R. Licklider publishes "Man-Computer Symbiosis."

1966



Bob Taylor convinces ARPA chief Charles Herzfeld to fund ARPANET.

1968



Larry Roberts sends out request for bids to build the ARPANET's IMPs.

- 1960 - [J. C. R. Licklider](#), American psychologist and computer scientist, known as 'computing's Johnny Appleseed', wrote '[Man-Computer Symbiosis](#)', then '[Intergalactic Computer Network](#)' in 1963
- 1966 - [Bob Taylor](#) (American Internet pioneer) and [Larry Roberts](#) (American scientist), together created ARPANET, which was the predecessor to the modern Internet

Day 6 (1968 – 1980)

- Someone needed to invent the ‘Personal Computer’
 - Personal computer - a mass-market consumer electronic device starting the [microcomputer revolution](#) of the 1980s with the launch of the [IBM Personal Computer](#) in 1981

1968



Douglas

Engelbart stages the Mother of All Demos with Brand's help.

[Mother of All Demos](#)

1973



Alan Kay helps to create the Alto at Xerox PARC.

1975



Altair personal computer from MITS appears. Ed Roberts

1975



Paul Allen and Bill Gates write BASIC for Altair, form Microsoft.

1975



Steve Jobs and Steve Wozniak launch the Apple I.

1980



IBM commissions Microsoft to develop an operating system for PC.

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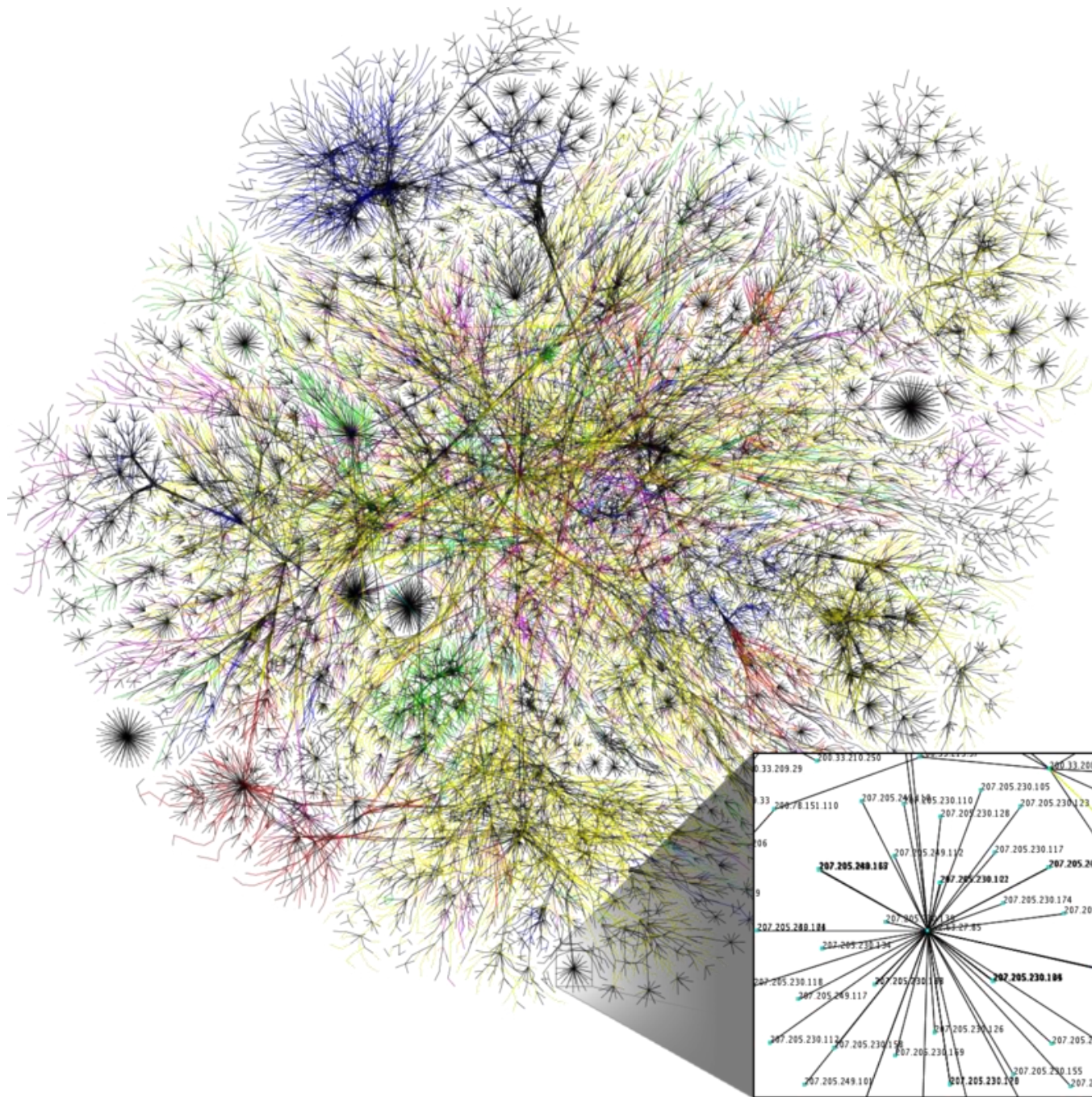
IBM commissions Microsoft to develop an operating system for PC.

And on the 7th day...

Silicon Valley
created the 120-hour work-week

there was NO rest in The Valley

Stepping back
in time to that
thing called
THE
INTERNET



Why Talk About the Internet and the Web together – aren't they the same thing?

- The Internet & The Web

- The [Internet](#), a massive [network](#) of networks, is an enabler for the World Wide Web (WWW) and Social Media
- Information travels over the Internet via [protocols](#)*
- The [World Wide Web](#) (the Web) is a way of accessing information over the medium of the Internet - the Web uses the [HTTP](#) protocol
- The Web also utilizes [browsers](#) like [Firefox](#) or [Chrome](#) to access Web documents called [Web pages](#) ([example](#))

*A Protocol is an agreed-upon [format](#) for transmitting [data](#) between two [devices](#).

Protocols determine the following:

- error checking, [data compression](#), how a sending device indicates it is finished sending a message, and how a receiving device indicates it has received a message

The Internet. What is it?

- The [Internet](#) was built in partnership among the military, universities, and private corporations – the military-industrial-academic complex
- It is a global system of interconnected [computer networks](#) that use the [Internet protocol suite](#) (TCP/IP*) to link devices worldwide. It is a *network of networks*
- July 1945 – [Vannevar Bush](#), with experience and influence in all 3 camps, at Roosevelt’s behest, wrote [‘Science, the Endless Frontier’](#)

1945



Bush publishes “Science, the Endless Frontier,” proposing government funding of academic and industrial research.

[Link](#)

*TCP/IP - [Transmission Control Protocol](#) (TCP) and the [Internet Protocol](#) (IP)

The Internet. How did we get here? Part 1

- 1960 - [J. C. R. Licklider](#), America psychologist and computer scientist, known as ‘computing’s Johnny Appleseed’, wrote ‘[Man-Computer Symbiosis](#)’, then ‘[Intergalactic Computer Network](#)’ in 1963

“Consider the situation in which several different centers are netted together...”

1960



J. C. R. Licklider publishes "Man-Computer Symbiosis."

1963

Licklider proposes an "Intergalactic Computer Network."

[Link](#)

[Link](#)

J.C.R. Licklider - The network is the computer

Today, with the Internet and World Wide Web, it seems very obvious that computers become much more powerful in all sorts of ways if they are connected together. In the 1970s this result was not so obvious. This chapter is about how the Internet of today came about. As we can see from Licklider's (B.10.1) quotation beginning this chapter, in addition to arguing for the importance of interactive computing in his 1960 paper on "Man-Computer Symbiosis," Lick also envisaged linking computers together, a practice we now call *computer networking*. Larry Roberts, Bob Taylor's hand-picked successor at the Department of Defense's Advanced Research Projects Agency (ARPA), was the person responsible for funding and overseeing the construction of the ARPANET, the first North American *wide area network* (WAN). A WAN links together computers over a large geographic area, such as a state or country, enabling the linked computers to share resources and exchange information.

The Internet. How did we get here? Part 2

- 1966 - [Bob Taylor](#) (American Internet pioneer) and [Larry Roberts](#) (American scientist) were responsible for funding and overseeing construction of the ARPANET*



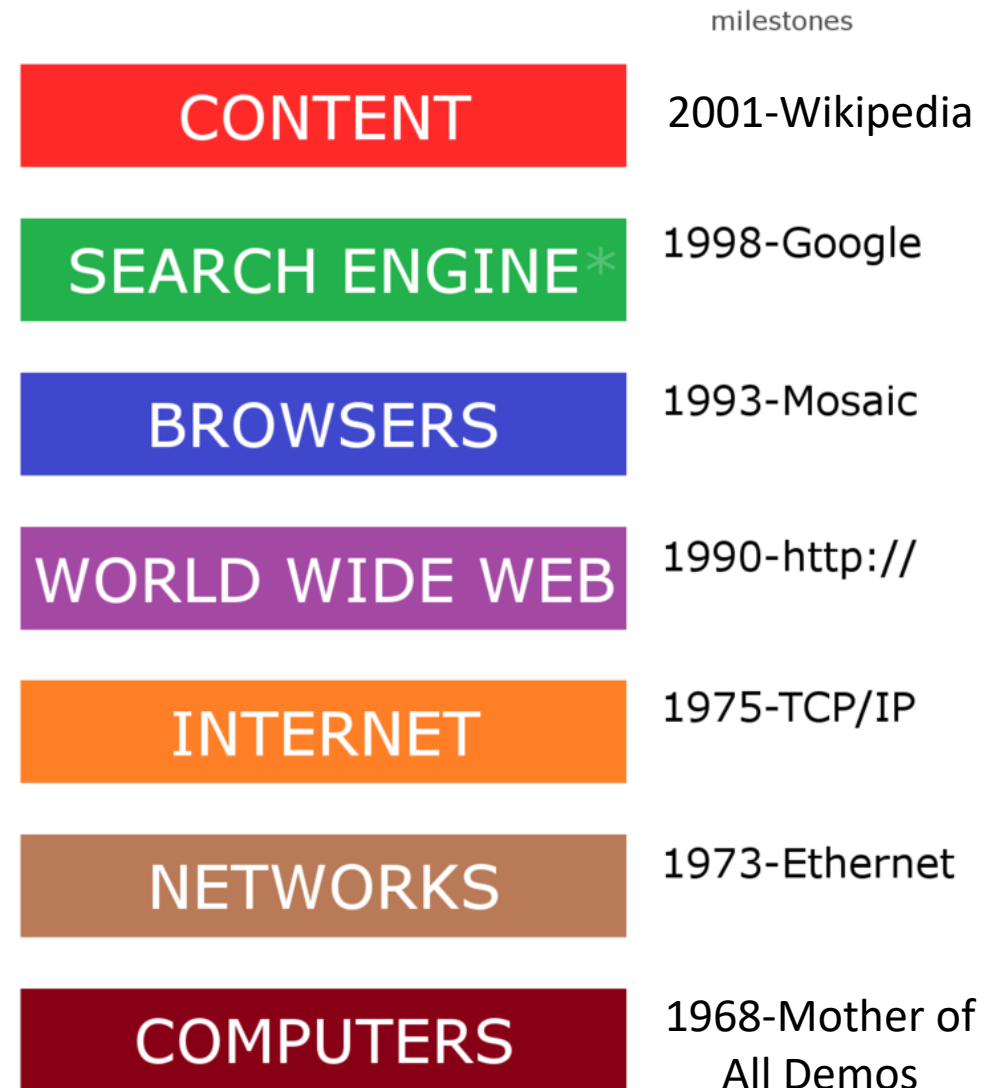
Bob Taylor convinces ARPA chief Charles Herzfeld to fund ARPANET.



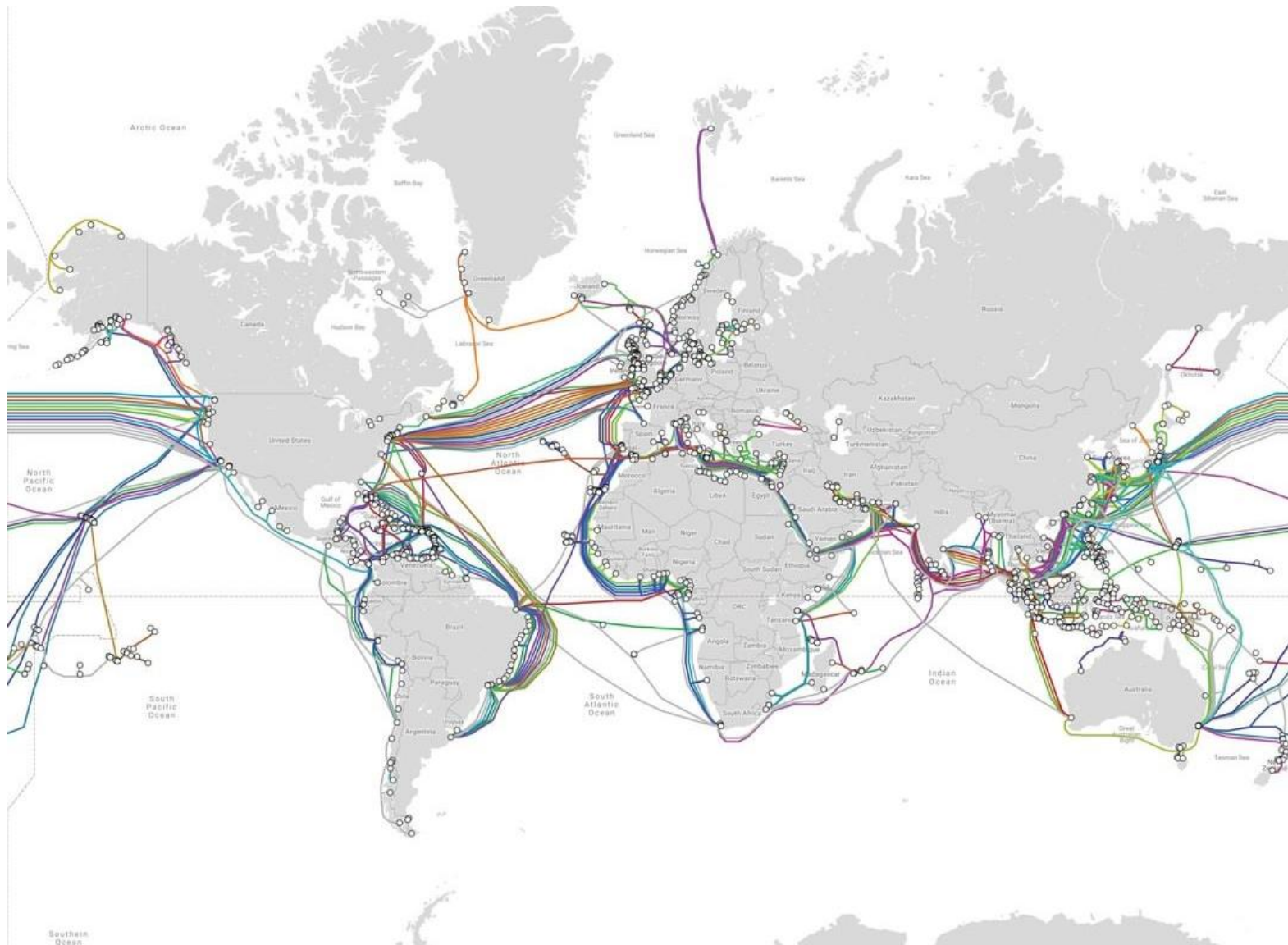
Larry Roberts sends out request for bids to build the ARPANET's IMPs.

***Advanced Research Projects Agency Network (ARPANET)** was the first wide-area [packet-switching](#) network with distributed control and one of the first networks to implement the [TCP/IP](#) protocol suite

Layers of the Internet



Map of 550,000 miles of 'data' cables that make the Internet possible



[video](#)

A Brief History
of
The [Web](#)

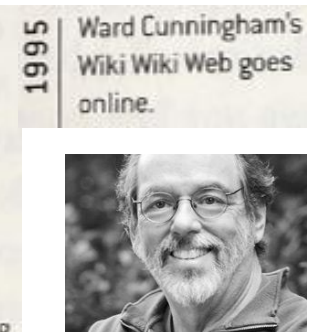
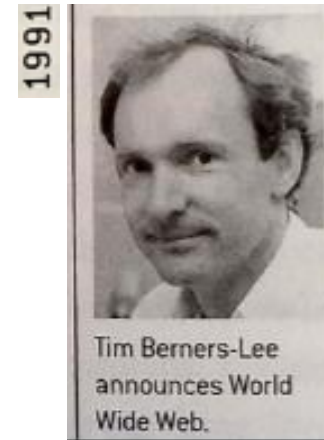


The World Wide Web. What is it?

- Modems and Online Services made connection to the Internet possible, but for most accessing anything useful was an ordeal
- The World Wide Web ([Tim Berners-Lee](#) – 1991 “[WorldWideWeb: Proposal for a Hypertext Project](#)”
- [World Wide Web](#) ("**WWW**" or simply the "**Web**") is a global [information](#) medium which users can read and write via [computers](#) connected to the [Internet](#). The Web is a service that operates over the Internet, like [e-mail](#).

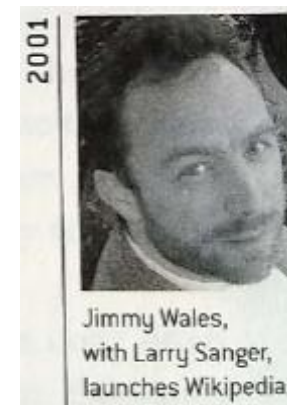
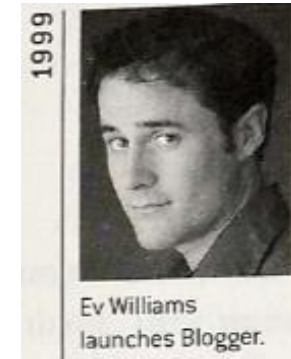
WWW Inventors

- 1991 – [Berners-Lee](#) - received the 2016 [Turing Award](#) "for inventing the World Wide Web, the first web browser, and the fundamental protocols and algorithms allowing the Web to scale"
- 1993 – [Marc Andreessen](#) - co-author of [Mosaic](#), the first widely used [Web browser](#); co-founder of [Netscape](#)
- 1994 – [Justin Hall](#) – Web logs become blogs
- 1995 – [Ward Cunningham](#) created [WikiWikiWeb](#), which allowed users to [collaboratively](#) modify content from a [web browser](#)



WWW Inventors (continued)

- 1998 – [Larry Page](#) and [Sergey Brin](#) launched [Google](#)
- 1999 – [Ev Williams](#) launches [Blogger](#) (acquired by Google in 2003)
- 2001 – [Jimmy Wales](#) and [Larry Sanger](#) launch [Wikipedia](#) (from [Nupedia](#))

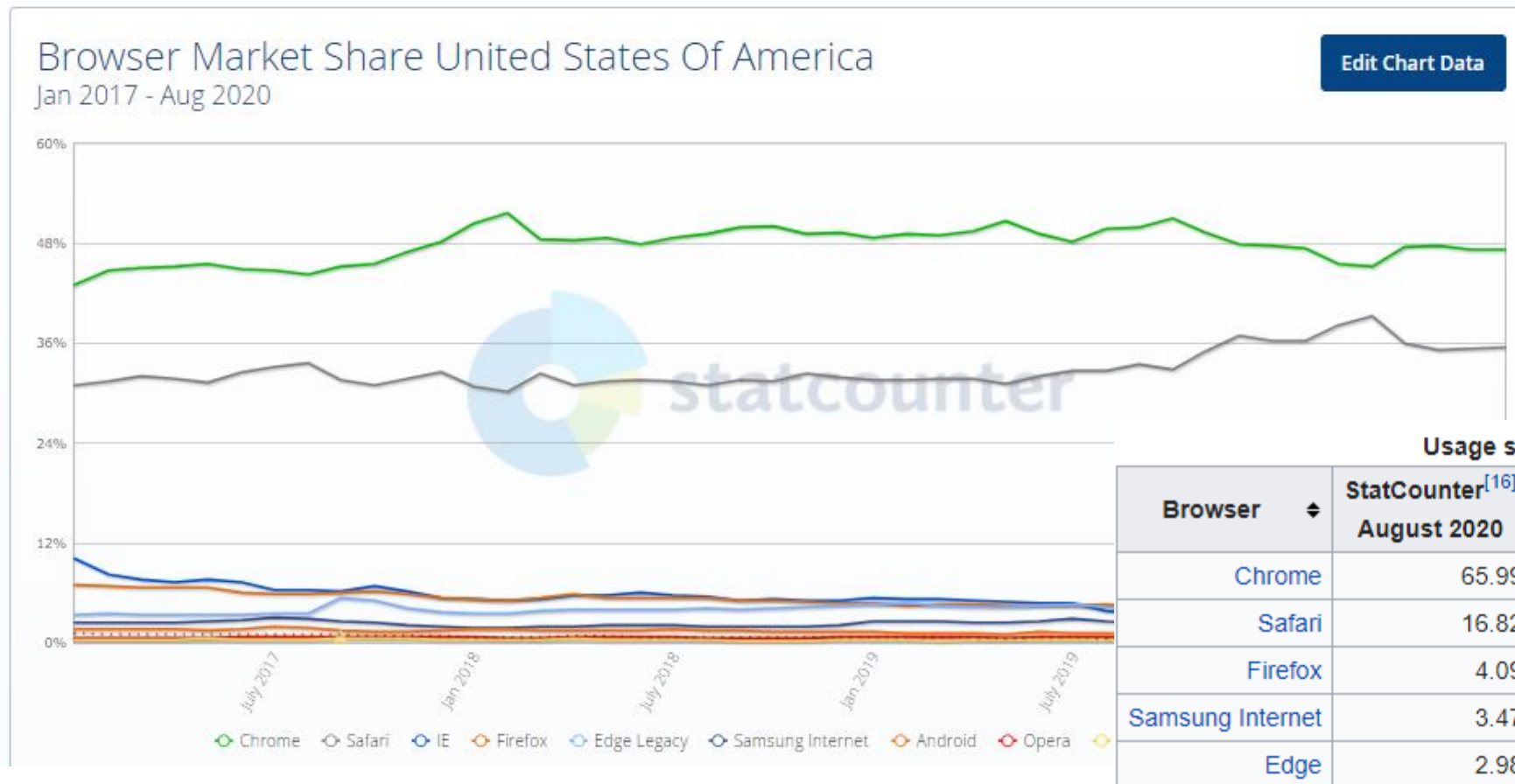


What's a Browser?

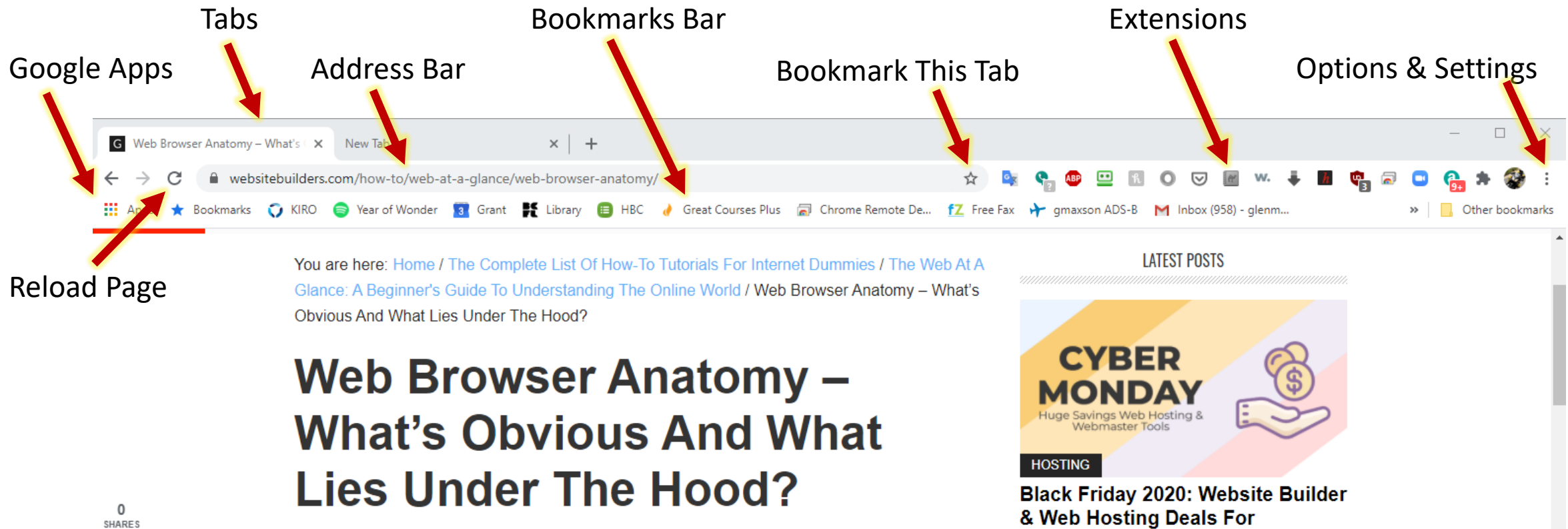
A **web browser** (or just **browser**) is a [software application](#) for retrieving, presenting, and traversing information resources on the [World Wide Web](#). An *information resource* is identified by a [Uniform Resource Identifier](#) (URI/URL)* and may be a [web page](#), image, video or some other content.

*Uniform Resource Identifier (URI) is a string of [characters](#) that unambiguously [identifies](#) a particular [resource](#)

Browser Market Share



Anatomy of the Google Chrome browser



Internet etiquette (aka Netiquette)

Be Nice – no [cyber bullying](#) allowed

Learn the Lingo – [TYVM](#)

Keep Messages and Posts Brief

Don't Shout – avoid using all caps in any email or post

Use Discretion – remember that anything you put on the Internet can/will be there forever

Protect Personal Information – don't make things easy for identity thieves and predators

Obey Copyright Laws – never copy someone else's work and post it as your own

Protect Children – restrict access, or monitor their Internet activity closely

Before You Click "Send" – reread anything you type before clicking the "send" button

Help Others – if someone appears to be new to the Internet, offer your assistance

Internet Lingo (twbat)

ASAP: As Soon As Possible

BBIB: Be Back In A Bit

BBL/BBS: Be Back Later/Soon

BF: Boyfriend

BFF: Best Friends Forever

BFFL: Best Friends for Life

BRB: Be Right Back

CYA: See You

DS: Dear Son

FAQ: Frequently Asked Questions

FB: Facebook

FLBP: Future Lower Back Problems

FML: "F-Word" My Life

FTFY: Fixed That For You

FTW: For the Win

FYI: For Your Information

G2G: Got to Go

GF: Girlfriend

GR8: Great

GTFO: Get the "F-Word" Out

HBIC: Head B**** in Charge

HML: Hit My Line, or Hate My Life

HRU: How are you?

HTH: Hope This Helps

IDK: I Don't Know

IGHT: Alright

IMO/IMHO: In My Opinion/In My Huml

IMY: I miss you.

IRL: In Real Life

ISTG: I Swear to God

JK: Just Kidding

KTHX: OK, Thanks

L8R: Later

LMAO: Laugh My "A-Word" Off

LMFAO: Laugh My "F-ing" "A-Word" Off

LMK: Let Me Know

LOL: Laugh Out Loud

MWF: Married White Female/Monda

NM: Nevermind

NP: No Problem

NSFW: Not Safe for Work

OFC: Of course

OMG: Oh My God

ORLY: Oh Really?

OTOH: On the Other Hand

RN: Right Now

ROFL: Roll On the Floor Laughing

RUH: Are Your Horney

SFW: Safe for Work

SOML: Story of My Life

SOZ: Sorry

STFU: Shut the "F-Word" Up

TFTI: Thanks for the Invite

TIL: Today I Learned

TMI: Too Much Information

TTFN: Ta-ta for now

TTYL: Talk to You Later

TWSS: That's What She Said

U: You

W/: With

W/O: Without

WYD: What You Doing

WTH: What the Hell?

WTF: What the "F-Word"

WYM: What You Mean?

WYSIWYG: What You See Is What You Get

Y: Why

YMMV: Your Mileage May vary

YW: You're Welcome

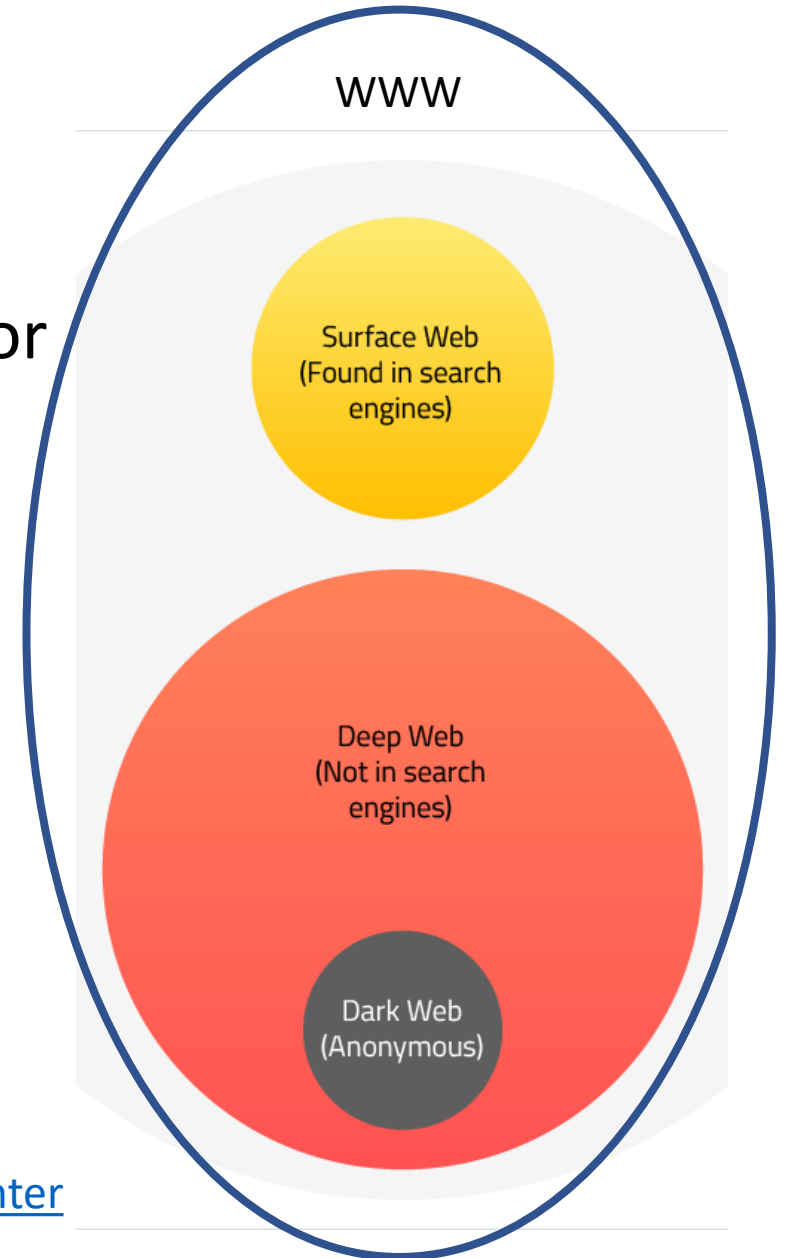
YWA: You're Welcome Anyway

Dark Web versus Deep Web

- The part of the internet indexed by Google and other search engines is known as “Visible Web” or “Surface Web.” (4% or the World Wide Web)
- The Deep Web is effectively walled off from ‘indexation’ – unreadable sites, internal sites, or sites requiring authentication to access (96%)
- Included within the Deep Web is the Dark Web (aka DarkNet). Pages in the Dark Web are anonymous, encrypted, and require special software to access - TOR (The Onion Router) and the Tor browser.

Excellent Video about the Dark Web:

[The Dark Net isn't what you think. It's actually key to our privacy | Alex Winter](#)



Dark Web versus Deep Web (10.5 min)

The Dark Net isn't what you think. It's actually key to our **privacy** | Alex Winter

