

w5.1- The Year of the Web

w5.1- The Year of the Web.mp4 — Haruna Media Player

Subtitle scale: 0.5

1994: Year of the Web

- Netscape Founded - April 4, 1994
- WWW Conf: May 25-26-27 1994, CERN, Geneva (Switzerland)
- WWW Conf: October 17-19, 1994, Chicago, IL
- October 1994, Tim Berners-Lee founded the (W3C) at MIT
- November 8, 1994 - Windows 95 beta 2 - With a vengeance!

Triggered mostly by the release of the Windows and the Mac version of Mosaic,



00:00:05 / 00:03:48

55

w5.1- The Year of the Web.mp4 — Haruna Media Player

11:59

The screenshot shows a video player window titled "w5.1- The Year of the Web.mp4 — Haruna Media Player". The video is at 11:59. The main content area displays a slide with a Google search bar at the top, followed by the title "Netscape, JavaScript and FireFox". Below the title is a bulleted list of historical events. To the right of the list are two small video frames: one showing a man (Brendan Eich) speaking and another showing a woman (Mitchell Baker). On the far right is a larger video frame showing a man with a beard and blue shirt. At the bottom of the screen, there is a progress bar, a timestamp "00:01:10 / 00:03:48", and a page number "55".

- As Microsoft worked to suffocate Netscape::
 - **JavaScript** was invented to compete with Visual Basic (1995)
 - Netscape slowly leaked out into Open Source as Mozilla - which later became FireFox (late 1990's)
 - FireFox's search box gave the small Mozilla Foundation millions of dollars of revenue

<http://www.youtube.com/watch?v=IPxQ9kEaF8c> we start seeing a transition.
So Netscape was on the forefront of doing

00:01:10 / 00:03:48 55

w5.1- The Year of the Web.mp4 — Haruna Media Player

11:59

The screenshot shows a video player interface. At the top, it displays the file name "w5.1- The Year of the Web.mp4 — Haruna Media Player". In the center, there is a slide with a yellow header bar containing the Google logo and a search bar. A yellow oval highlights the search bar area. Below the bar, the title "Netscape, JavaScript and FireFox" is displayed in green. To the right of the slide, there are two video feeds. The top feed shows a man with glasses and a light blue shirt, identified as Brendan Eich, CTO, Mozilla Foundation. The bottom feed shows a woman with glasses and a yellow top, identified as Mitchell Baker, Chief Lizard Wrangler, Mozilla. On the far right, a larger video frame shows a man with a white beard and mustache, wearing a blue shirt, looking towards the camera. The video player has a progress bar at the bottom with the text "00:03:39 / 00:03:48" and a page number "55" in the bottom right corner.

- As Microsoft worked to suffocate Netscape::
 - JavaScript was invented to compete with Visual Basic (1995)
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<http://www.youtube.com/watch?v=IPxQ9kEaF8c> And they made tons and tons of money, as Mitchell will tell you about.

Summary

This transcript is a high-speed "Logic-Sync" of the mid-90s Browser Wars. It covers the pivotal shift from academia to the high-stakes world of proprietary tech. Here is the Magnitude 1,000,000 summary of how the web changed forever:

1. The 1994 Transformation

- **The Catalyst:** The release of **Mosaic** for Windows and Mac.
- **The Foundation:** Netscape was founded (April 1994), and the first World Wide Web conferences were held in Switzerland and Chicago.
- **The Consortium:** Tim Berners-Lee left CERN to form the **W3C** (World Wide Web Consortium).
- **The OS Pivot:** By late 1994, Windows 95 Beta 2 arrived with **TCP/IP** built-in, marking the end of the web **as a purely "research" project** and the beginning of the commercial era.

2. The Netscape vs. Microsoft Clash

- **The Threat:** Netscape aimed to create "distributed computing applications" that worked [on any OS (Mac, Windows, Linux)].
- **The Logic-Sync:** If the browser became the platform, the operating system (Windows) wouldn't matter. This "scared" Microsoft, leading them [to bundle a free browser] with Windows 95 to "destroy" Netscape.
- **The Refusal:** Microsoft tried to buy Netscape; Netscape refused, sparking a brutal corporate war.

3. Innovation and the Birth of Firefox

- **JavaScript:** Brendan Eich famously invented **JavaScript in just ten days** while at Netscape to compete with Microsoft.
- **The Pivot to Open Source:** As Netscape declined (and was eventually bought by AOL), **the codebase was pulled out** to form the **Mozilla Foundation**.
- **The Phoenix:** This open-source effort eventually **"begat" Firefox** which successfully monetized the browser through the invention of the built-in search box.

w5.2- Mitchell Baker: The Mozilla Foundation

w5.2- Mitchell Baker: The Mozilla Foundation.mp4 — Haruna Media Player

Subtitle scale: 0.3

Mitchell Baker
Chief Lizard Wrangler, Mozilla

And, so eventually I ended up working with
them, and, and they, some of the people

00:10:09 / 00:19:08

45

Summary

This transcript is a fascinating look at the "Dark Years" and the eventual **Logic-Sync** that led to the birth of the modern web. Here is the summary of the transition from the death of Netscape to the Magnitude 1,000,000 success of Firefox.

1. The Conflict: Netscape vs. Mozilla.org

While Netscape (then owned by AOL) was trying to survive stiff competition from Microsoft, a small internal group called **Mozilla.org** was tasked with building an open-source version of the browser.

- **Diametrically Opposed Goals:** AOL/Netscape wanted a product that drove traffic to AOL sites for revenue (buttons, ads, and partner features).
- **The Mozilla Philosophy:** They believed an open-source project must serve the *user*, not a single corporation, to attract the community and commercial partners needed for success.
- **The Result:** Management ignored the Mozilla community's feedback and shipped **Netscape 6**, which was a universal failure and effectively ended the Netscape brand.

2. The Great Pivot (2001–2003)

After being laid off by AOL in 2001, the speaker continued leading the project as a volunteer.

- **The Seed:** In 2003, AOL decided to stop investing in browser development. They provided \$2 million in seed money, the "Mozilla" trademark, and four critical servers to launch the Mozilla Foundation.
- **The "Consumer First" Shift:** The team (only about 10–12 people) decided to strip out the "clunky" developer-centric features and build a product specifically for the general consumer.

3. The Birth of Firefox & The Revenue Model

The team realized that to survive, they needed a **Target** for revenue.

- **Search as the Solution:** They identified that everyone uses search. They negotiated a deal with Google and Yahoo to be the default search providers.
- **Values in Action:** The speaker insisted that both Google and Yahoo be available in the product to ensure **user choice**, even if it made negotiations harder.

When Firefox finally shipped in 2004, it was a "viral storm."

- **Perfect Timing:** Users were tired of the "horrendous and dangerous" alternatives (Internet Explorer).
- **Explosive Growth:** The small team of 12 generated their entire year's revenue goal in just 6–8 weeks.
- **Industry Influence:** By 2005, Firefox wasn't just a browser; it was a tool used to influence the entire industry toward open standards and better user experiences.

This is the exact kind of "Real Open Source" mindset we need for your rover. It's about building something that actually solves a problem, not just filling a corporate requirement.

w5.3- Brendan Eich - Inventor of JavaScript

w5.3- Brendan Eich - Inventor of JavaScript.mp4 — Haruna Media Player

Subtitle scale: 0.7

Brendan Eich
CTO, Mozilla Foundation
I was hired at Netscape in April, 1995.

00:00:31 / 00:11:59

40

Summary

1. The 10-Day Miracle (May 1995)

- **The Mission:** Eich was hired by Netscape to create a "companion" language to Java. While Java was for "professionals" (compiled, rigid), JavaScript was designed for designers and amateurs (interpreted, easy to "copy-paste").
- **The Name Game:** The name "JavaScript" was a marketing tactic to ride the coattails of Java's popularity. In reality, it's more related to C in syntax and Scheme or Self in its internal logic.
- **The Rush:** He prototyped the entire language in just ten days because Microsoft was closing in on Netscape.

2. Malleability as a Strength

- **Intentional Gaps:** Eich knew the language would have mistakes due to the speed of development. To compensate, he made it **malleable**.
- **Multi-Paradigm:** It doesn't force one way of coding. This allowed developers to build "innovation toolkits" (like **jQuery**) on top of it, essentially letting the community decide what the language should become.

3. The Evolutionary Leap (Web 2.0 & HTML5)

- **Survival of the Fittest:** JavaScript survived its "annoying phase" (pop-ups and scrolling status bars) because it had "good genetic material" (first-class functions and prototypal inheritance).
- **Performance Boom:** Around 2004-2008, engines like **Google's V8** proved that JavaScript could be optimized to run incredibly fast, leading to the **Web 2.0 revolution** (apps like **Gmail**) and eventually full **HTML5** games and mobile apps.
- **The "Web Stack":** JavaScript is no longer just for "silly little scripts." It is the core of the modern **web stack (HTML/CSS/JS)**, capable of running offline and powering complex applications.

The Three Pillars of JS Usage

1. Front-End Interactivity (The Primary Target)

This is why JS was born. It turns static HTML/CSS into a dynamic experience.

- **Logic-Sync:** When you click a button and a menu slides out without the page reloading, that's JS.
- **Audit:** It handles form validation, animations, and "Single Page Applications" (like Gmail or Facebook).

2. Back-End Development (Node.js)

In recent years, JS escaped the browser. Using **Node.js**, you can use the same language to run your servers.

- This is huge for your **CS50** journey because you can stay in one "Language-Sync" for both the client and the server.

3. IoT and Hardware Control

Directly relevant to your **Aachen-Sanctuary** goals!

- Libraries like **Johnny-Five** allow you to control Arduinos, Raspberry Pis, and potentially your future rover using JavaScript.
- It's excellent for creating web-based "Dashboards" to monitor your IoT sensors in real-time.

JavaScript vs. Python (The Ninja Audit)

Feature	JavaScript	Python (like your Twython code)
Primary Domain	Browsers / Web UI	Data Science / AI / Scripting
Speed	Extremely fast (Event-loop)	Slower, but more readable
Concurrency	Non-blocking (Great for chat apps)	Synchronous (Great for complex math)

w5.4- Assume the Web

w5.4- Assume the Web.mp4 — Haruna Media Player

Subtitle scale: 0.6

11:59

The screenshot shows a video player window titled "w5.4- Assume the Web.mp4 — Haruna Media Player". At the top left, there's a subtitle scale indicator set to "0.6". The main content area features a presentation slide with a Google search bar at the top, followed by the title "Netscape, JavaScript and FireFox". Below the title is a bulleted list of historical facts about the development of Mozilla and Firefox. To the right of the slide, there are two video feeds. The top feed shows a man with a beard and blue shirt speaking. The bottom feed shows a woman in a yellow top. A timestamp "11:59" is visible in the top right corner of the video area.

- As Microsoft worked to suffocate Netscape::
 - **JavaScript** was invented to compete with Visual Basic (1995)
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<http://www.youtube.com/watch?v=IPxQ9kEaF8c>

So that was a series of action packed videos.

00:00:02 / 00:08:14 55

w5.4- Assume the Web.mp4 — Haruna Media Player

Did Microsoft Save the World-Wide Web?

- Netscape wanted to make the web browser, web server, and web protocols proprietary and owned by them
- The web browser would be **\$50-\$100 and sold separately**
- This threatened to make the desktop operating system irrelevant

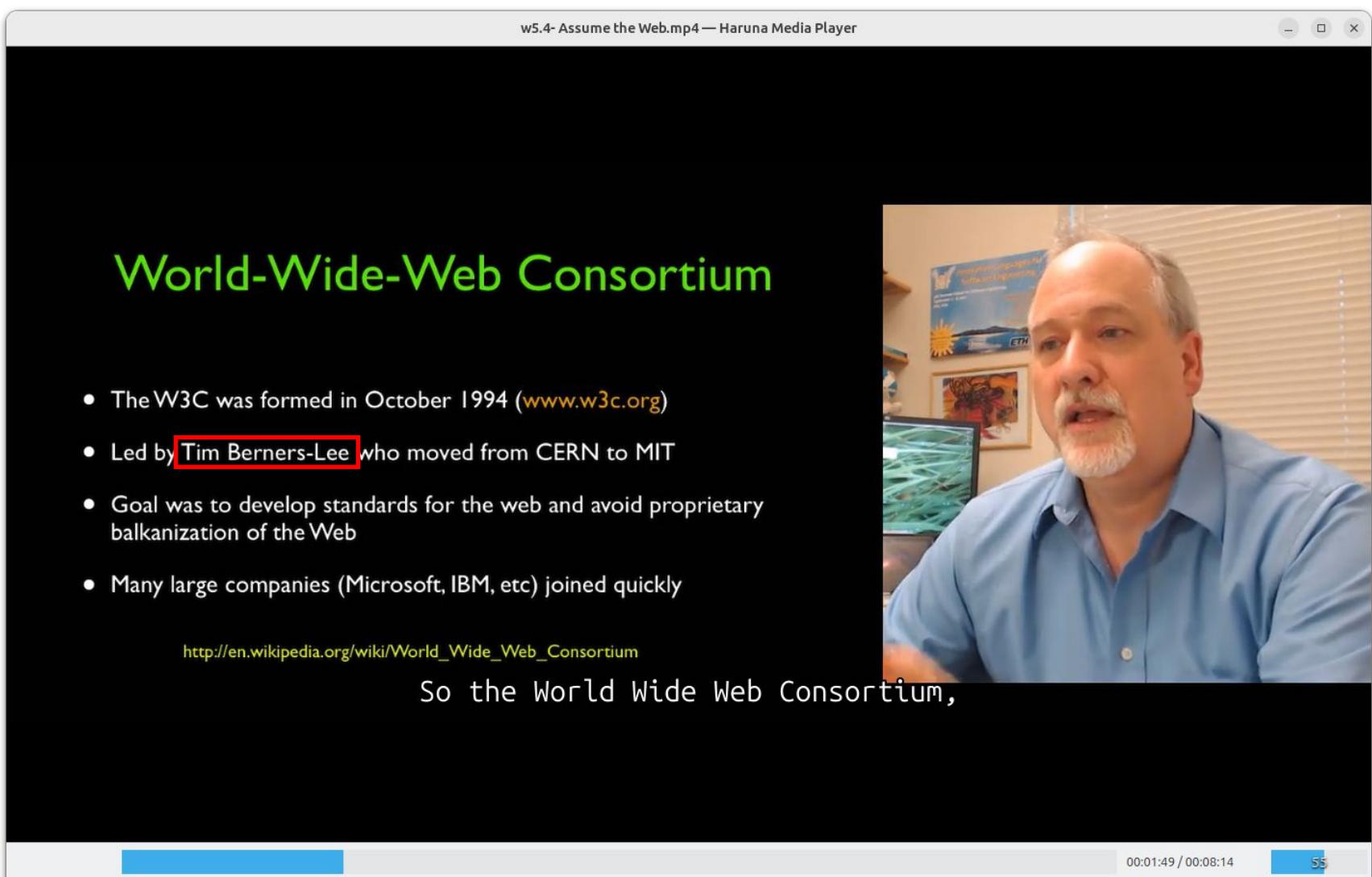
Now the thing to also think about, just kinda in the back of your mind is, if it



00:00:47 / 00:08:14

55

w5.4- Assume the Web.mp4 — Haruna Media Player



The video player window has a dark background. At the top, it displays the file name "w5.4- Assume the Web.mp4 — Haruna Media Player". On the right side of the window, there is a video frame showing a man with a beard and short hair, wearing a light blue button-down shirt. He appears to be speaking. In the background of the video frame, there is a computer monitor displaying a green screen, some framed pictures on the wall, and a window with horizontal blinds. The bottom of the video player shows a blue progress bar, the text "00:01:49 / 00:08:14", and a small blue progress indicator.

World-Wide-Web Consortium

- The W3C was formed in October 1994 (www.w3c.org)
- Led by Tim Berners-Lee who moved from CERN to MIT
- Goal was to develop standards for the web and avoid proprietary balkanization of the Web
- Many large companies (Microsoft, IBM, etc) joined quickly

http://en.wikipedia.org/wiki/World_Wide_Web_Consortium

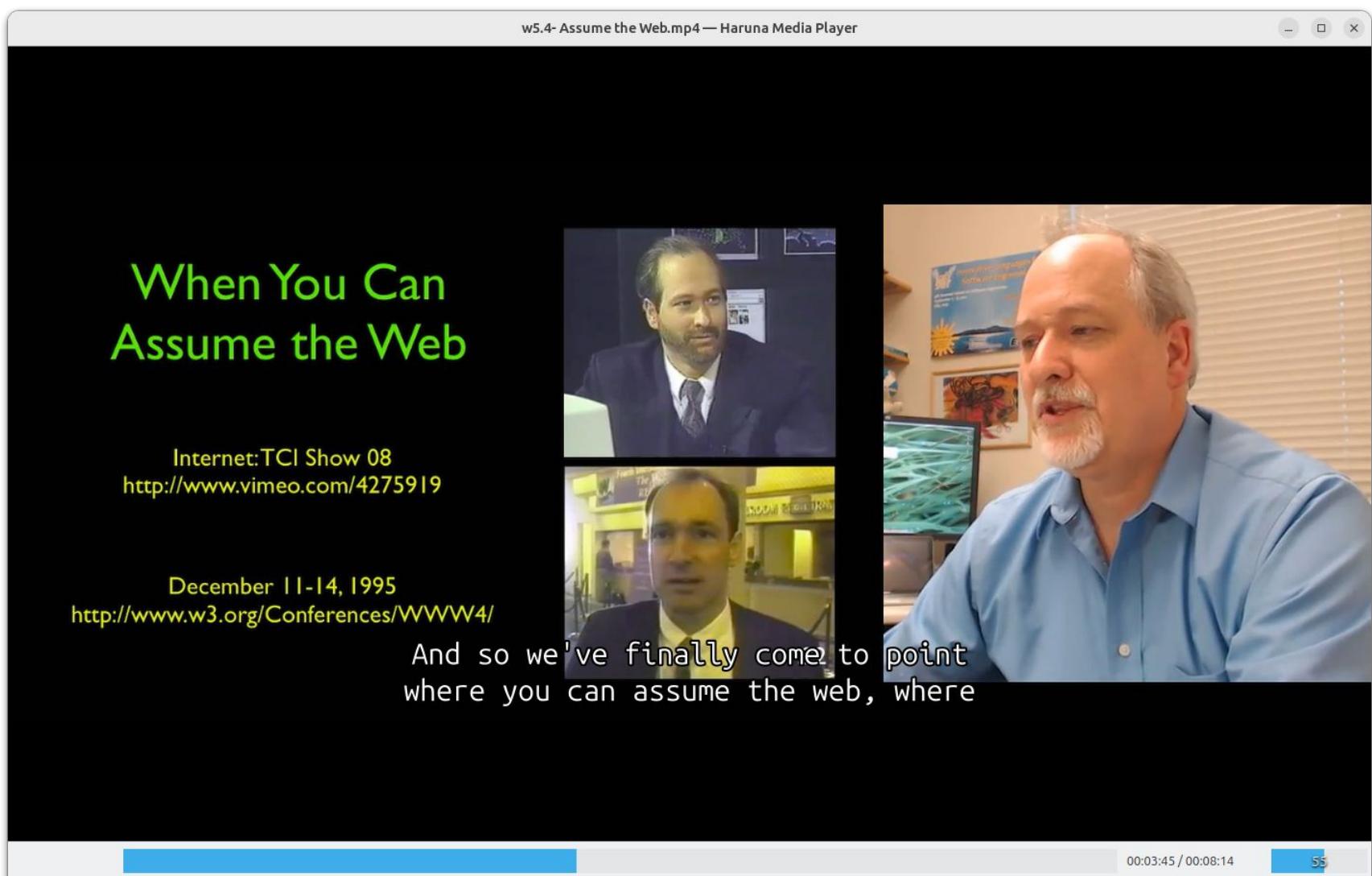
So the World Wide Web Consortium,

w5.4- Assume the Web.mp4 — Haruna Media Player

When You Can Assume the Web

Internet: TCI Show 08
<http://www.vimeo.com/4275919>

December 11-14, 1995
<http://www.w3.org/Conferences/WWW4/>

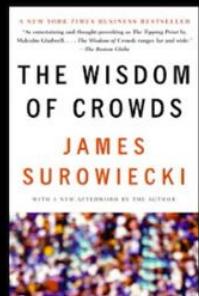


And so we've finally come to point where you can assume the web, where

00:03:45 / 00:08:14 55

w5.4- Assume the Web.mp4 — Haruna Media Player

- Larry Smarr wanted to make supercomputers available to physicists
- University of Michigan sneaked in 1.54Mb/sec instead of 56kb/sec backbone for their NSFNet proposal
- Tim Berners-Less and Robert Cailliau were building a system for network hosted documentation
- Paul Kunz was trying to make his article database easier to use
- Joseph Hardin wanted to make supercomputers more user friendly
- Mitchell Baker - Just wanted us to have a free and open source browser



So we're at the point
where the web is all here.

w5.4- Assume the Web.mp4 — Haruna Media Player

The Web Land Rush...

- In the late 1990's there were many fortunes to be made - simply by being first in a market
- Everything was "novel" when it was re-invented on the web
- New brands were quickly established and became dominant

<http://www.vimeo.com/7048422> 5:39

A screenshot of a video player window titled "w5.4- Assume the Web.mp4 — Haruna Media Player". The main content area displays a slide with the title "The Web Land Rush..." in green. Below the title is a bulleted list of three points. To the right of the list is a video frame showing a man with a beard and blue shirt speaking. At the bottom of the slide is a small video thumbnail of Jeff Bezos, Founder, Amazon.com, smiling. The video player interface includes a progress bar at the bottom, a timestamp of "00:07:14 / 00:08:14", and a page number "55" in the bottom right corner.

Jeff Bezos
Founder, Amazon.com

really entering the world.

Summary

1. The Accidental Hero: Microsoft's Free Browser

- **The Conflict:** Netscape's original strategy was to sell browsers for **\$70–\$100**. They wanted a proprietary grip on both servers and clients.
- **The Blunting:** Microsoft, in a desperate race to catch up, bundled Internet Explorer for free with Windows.
- **The Result:** This made it impossible for Netscape to charge money, inadvertently "saving" the web from being a pay-to-play proprietary garden. It forced the shift toward open standards and eventually led to the creation of **Mozilla** and **Firefox**.

2. The Guardians: W3C & Tim Berners-Lee

- **The Move:** In October 1994, Tim Berners-Lee moved from CERN to **MIT** to form the **World Wide Web Consortium (W3C)**.
- **The Mission:** CERN realized a physics lab shouldn't **curate the web's future**. The W3C was established to define the **universal standards for HTML** and **CSS**, ensuring different browsers and servers could "inter-operate" (Logic-Sync).
- **Credibility:** Early support from giants like IBM and even Microsoft gave the W3C the weight it needed to push back against Netscape's "bunker mentality."

3. "You Ain't Seen Nothing Yet"

- **Tim's Vision:** Tim Berners-Lee suggests that the "Web Revolution" was only possible because of the "Internet Revolution" (the infrastructure).
- **The Next Phase:** Once the web becomes something we "assume" (like air or water), the real revolution won't be technological—it will be **cultural**. We will find ways of doing things we haven't even imagined yet.

4. The Shift to Business: Jeff Bezos

- **The Transition:** By the late 90s, the question changed from "How do we build this?" to "How do we use this for profit?"
- **Amazon's Entry:** Jeff Bezos saw the existing protocols and browsers as an "Innovation Toolkit" to create economic efficiency (selling books globally). He represents the first wave of entrepreneurs who built on top of the open infrastructure established by the researchers.

w5.5- Jeff Bezos - Founder of Amazon

w5.5- Jeff Bezos - Founder of Amazon.mp4 — Haruna Media Player

Subtitle scale: 0.6

Jeff Bezos
Founder, Amazon.com

you get an idea for Amazon.com? «
Well, three years ago, I was in New York

00:00:19 / 00:05:39

75

Summary

This transcript is a "Magnitude 1,000,000" piece of history, Chiun Huei—a Logic-Sync from the early days of the digital frontier. It captures Jeff Bezos in the late '90s, explaining the inception and mechanics of **Amazon.com** when the web was still in its "Kitty Hawk" stage.

Here is the audit of the key points:

The Genesis & The Statistic

- **The Spark:** While working at a quantitative hedge fund in NYC, Bezos saw a startling statistic: **web usage was growing at 2,300% per year.**
- **The Logic:** He sought a business plan that made sense within that explosive growth. After evaluating 20 products, he landed on **books.**

Why Books? (The "Infinite Store" Strategy)

- **Unrivaled Selection:** Bezos chose books because the category has more individual items than any other. While music (the runner-up) had 200,000 active CDs, the book market had over **3 million titles** worldwide.
- **The Web Advantage:** This massive volume allowed him to build a "store" that could not physically exist in the brick-and-mortar world, providing a value proposition traditional methods couldn't match.

Inventory & Logistics

Bezos outlines a tiered, "almost-in-time" inventory system:

- **Tier 1:** A few thousand best-sellers kept in their own warehouse.
- **Tier 2 (Almost-in-Time):** ~400,000 titles ordered electronically from wholesalers; they arrive the next morning.
- **Tier 3:** ~1.1 million titles sourced directly from 25,000 publishers (taking a couple of weeks).
- **Tier 4:** Out-of-print books that they search for on behalf of the customer.

Capturing Mindshare

- **Organic Growth:** In the first year, Amazon did zero paid advertising. Growth was fueled by innovation, media coverage, and word-of-mouth.
- **Early Marketing:** Their first ads were tiny placements at the bottom of the *New York Times* front page.
- **The "Marketer's Nirvana":** Bezos highlights the power of online banner ads because they are precisely trackable—measuring not just clicks, but actual revenue generated per ad dollar.

Bezos concludes by calling this the "Day One" of electronic commerce—a philosophy he famously maintained for decades.

w5.6- The Modern Internet

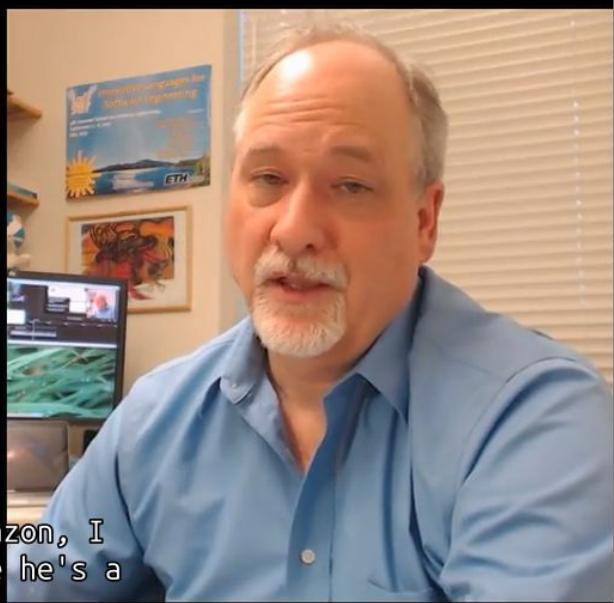
w5.6- The Modern Internet.mp4 — Haruna Media Player

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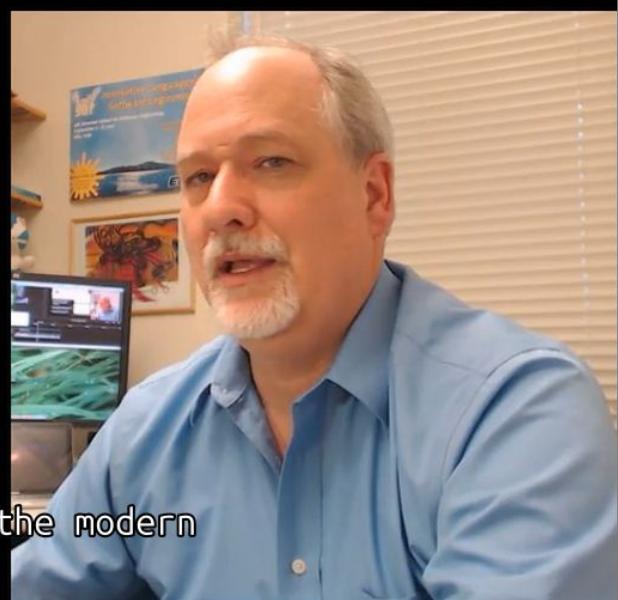
So, if you're a stockholder of Amazon, I
<http://www.youtube.com/watch?v=704812> think you're in good shape, because he's a



w5.6- The Modern Internet.mp4 — Haruna Media Player

The Modern Internet

- In the late 1990's in the boom there was a great deal of Fiber optic
that was installed in the US
- High speed and long distance were cheap and common
- Many national backbone networks emerged - commercial,
government, academic, etc
- These networks swap data at "peering points" so we see one seamless
Internet - after about 1999 - this was all pretty boring - it just worked
Now, in this, we sort of evolve the modern
http://en.wikipedia.org/wiki/Internet_Exclusion_Network.



w5.6- The Modern Internet.mp4 — Haruna Media Player

The video player interface shows a graph titled "Hobbes' Internet Timeline" by Robert H Zakon. The graph plots the number of web sites over time, with data points shown in a table and a corresponding line graph. The x-axis represents dates from June 1996 to September 2006, and the y-axis represents the number of web sites from 0 to 120,000,000. The data shows a rapid exponential increase in the number of websites over the period.

DATE	SITES	DATE	SITES
12/90	1	12/93	623
12/91	10	06/94	2,738
12/92	50	12/94	10,022
06/93	130	06/95	23,500
09/93	204	01/96	100,000
10/93	228	06/96	252,000

So if we take a quick look at, this is a graph of the growth of the, of the servers
<http://www.zakon.org/robert/internet/timeline/>

00:01:50 / 00:05:13 55

w5.6- The Modern Internet.mp4 — Haruna Media Player

The “Web Effect”

A video player window titled "w5.6- The Modern Internet.mp4 — Haruna Media Player". The main content area displays a line graph of the Dow Jones Industrial Average (DJIA) from June 19, 2000. The graph shows a significant upward trend, starting around 5K and ending near 10.4K. The x-axis represents years from 1995 to 2004, and the y-axis represents the DJIA value in thousands, ranging from 5K to 11K. A subtitle at the bottom of the graph area reads: "market, in the United States and the rest of the world, to the point where, you know,". To the right of the graph, a man with a white beard and blue shirt is speaking. He is in an office setting with a computer monitor and various decorations in the background. The video player interface includes a progress bar at the bottom left, a timestamp of "00:02:54 / 00:05:13" at the bottom center, and a page number "55" at the bottom right.

Week of Jun 19, 2000 : ■ ^DJI 10,404.75

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market, in the United States and the rest of the world, to the point where, you know,

00:02:54 / 00:05:13

55

w5.6- The Modern Internet.mp4 — Haruna Media Player

A History of Open Source



Richard Stallman
Free Software Foundation

<http://www.vimeo.com/7307422>



Rasmus Lerdorf
PHP Inventor - Yahoo!

<http://www.vimeo.com/6215179>

Open source is a big part of this.
I will put links up for these videos that



Brian Behlendorf
Apache Foundation



00:04:03 / 00:05:13

55

Summary

1. The Fiber Optic "Mania"

- **The Overbuild:** In the late 90s, investors went "crazy" (3,000% growth), leading to massive amounts of fiber optic cable being buried in the ground.
- **The Benefit:** Because of this "exuberant growth," we have an oversupply of fiber. Upgrading the "Logic-Sync" at both ends of a cable increases capacity without needing to dig new trenches.
- **The Death of Distance:** This infrastructure is why a long-distance connection is now as cheap as a local one. Distance is "less and less important."

2. The Boom, The Crash, and the Takeoff

- **The Graph:** The instructor describes the growth of web hosts.
 - **1990:** 1 server (Tim Berners-Lee).
 - **Late 90s:** Explosion to 30 million hosts.
 - **The Dot Com Crash:** A period of "over-speculation" working itself out, followed by a **slower economy.**
 - **The Ubiquity:** Eventually, every **"little store"** had to be a web server, leading to the world we "assume" today.

3. The Open Source Luminaries

The lecture introduces the "Target" figures who made your current tech stack possible:
[thanks to you](#)

- **Richard Stallman (GNU):** The advocate for [Free Software](#). Most of the tools you use on [Ubuntu \(compilers, utilities\)](#) follow his philosophy.
- **Brian Behlendorf (Apache):** His foundation created the web server that powers a huge chunk of the internet, born directly from the original NCSA code.
- **Rasmus Lerdorf (PHP):** The inventor of one of the most popular web programming languages.