WELCOME

Data Sovereignty & Storage

The rise of Web 2.0 platforms in the 2000s created a massive economy around our data. Culture at large is now coming into an awareness of the hegemonies that have benefited from extracting our personal data: reducing our most precious resource –our relationships –into likes and followers, as we experienced the rise of surveillance capitalism.

In the shift to decentralized web, we are realigning our understanding of the value of our data and taking back ownership and sovereignty over how our data is stored, accessed and parsed. This session will start with a brief history of the world wide web, specifically with the lens of a user's relationship to their own data.

In the workshop following, we'll collaboratively map the data we value most asking: How can we re-imagine the value of our data? What can be our data used for? How can we share it with confidence? Distribute it? Take back ownership of where is it stored and how it is monetized? How can we ensure its longevity?

PRAXIS#2 AGENDA

1. Welcome (10 min)
2. Where is our Data? Group Exercise (15 min)
3. History of Online Data Exchange (30 Mins)
4. Introduction to Decentralized Storage (20 min)
5. Break / Workshop Introduction (10 Mins)
6. Workshop: R1 Data Brainstorm (10 min)
10. Data Clustering Group Exercise (30 min)
11. R2 Access & Longevity Brainstorm (10 min)
12. Data Sovereignty Group Exercise (30 min)

ONLINE DATA EXCHANGE

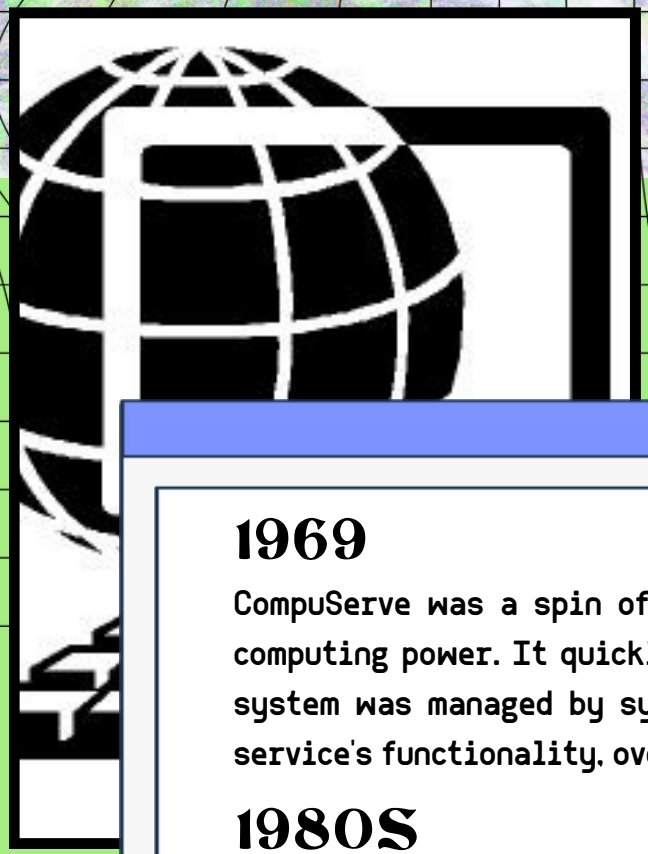
How did we get here?

Rewinding to the origins of the early web, let's trace the history of online data exchange together. From the prehistory of the web, to the emergence of Web 1.0 and self-publishing, to the complex power relations of Web 2.0 that emerged after the dot com crash of 2000.

To complement the extensive history of the infrastructure of the internet we learned in Session 1: Introduction to Decentralized Web (Dweb) and Its Cultural Foundations, this section will trace how the realtionality of our data has changed over time.

Participation is welcome and encouraged! As we progress through different stages of the timeline, please add links, stickies, notes and comments to the Miro. Together we will trace a path through the complex landscape of data relations online.


Internet
wires, network
Web 1.0
read-only
static
Web 2.0
read-write
interactive
Web 3.0
read-write-trust
verifiable



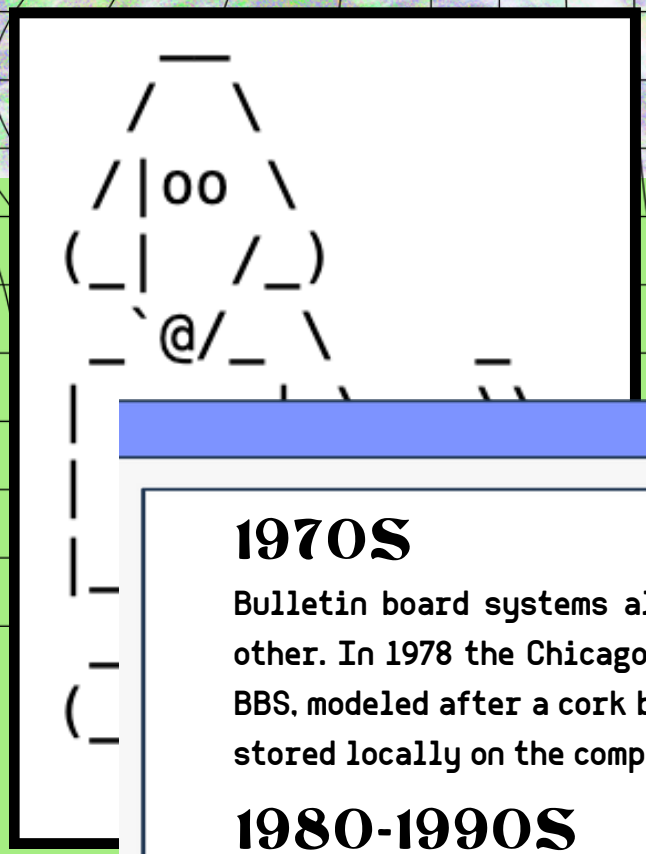
COMPUSERVE: THE MAINFRAME

1969

CompuServe was a spin off venture from an insurance company, that allowed businesses to rent computing power. It quickly developed into an extensive network of information and services. The system was managed by system operators (sysops), who played a crucial role in maintaining the service's functionality, overseeing the operation of the system, managing user access, and content.

1980S

CompuServe's data architecture was pioneering for its time, facilitating a multi-user environment through a time-sharing system that connected users to a central mainframe computer. This enabled the delivery of services, including e-mail and forums. By 1980, it had laid the foundation for the online service industry, evolving from a time-sharing service to a multifaceted digital platform.



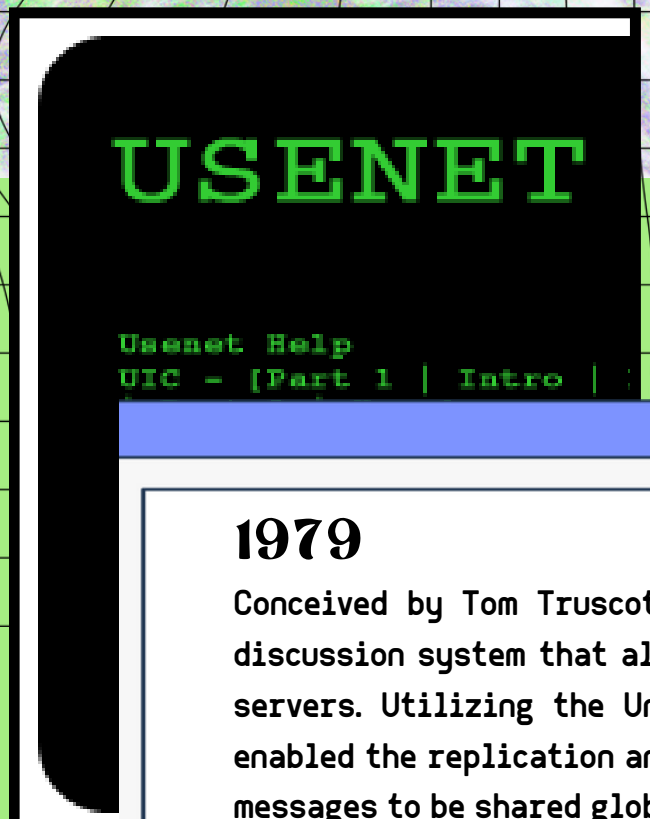
EARLY DATA EXCHANGE: BBS

1970S

Bulletin board systems allow users to connect via dial-up to post and read messages from each other. In 1978 the Chicago Area Computer Hobbyists' Exchange (CACHE) was the first public dial-up BBS, modeled after a cork board at the local computer club, callers could post information. Data was stored locally on the computer running the BBS.

1980-1990S

BBS proliferated as modem capabilities improved, allowing for more efficient data exchange. FidoNet in the early 1980s enabled mulitple BBSes to connect and form a larger network for message and file exchange across systems. The Thing was founded in 1991, it began as a BBS and evolved into an email provider and ISP, creating a community focused on art.



USENET (DECENTRALIZED)

1979

Conceived by Tom Truscott and Jim Ellis from Duke University, Usenet was an early internet discussion system that allowed users to post and read messages across a distributed network of servers. Utilizing the Unix-to-Unix Copy Protocol (UUCP), its decentralized data architecture enabled the replication and distribution of content across different nodes, making it possible for messages to be shared globally without a central server.

1980S- NOW

In the late 80s USENET moved to Network News Transfer Protocol (NNTP) for more efficient data transmission. It peaked in the 90s with the rise of the World Wide Web, and continues to serve as a valuable resource for file sharing, discussions, and community.

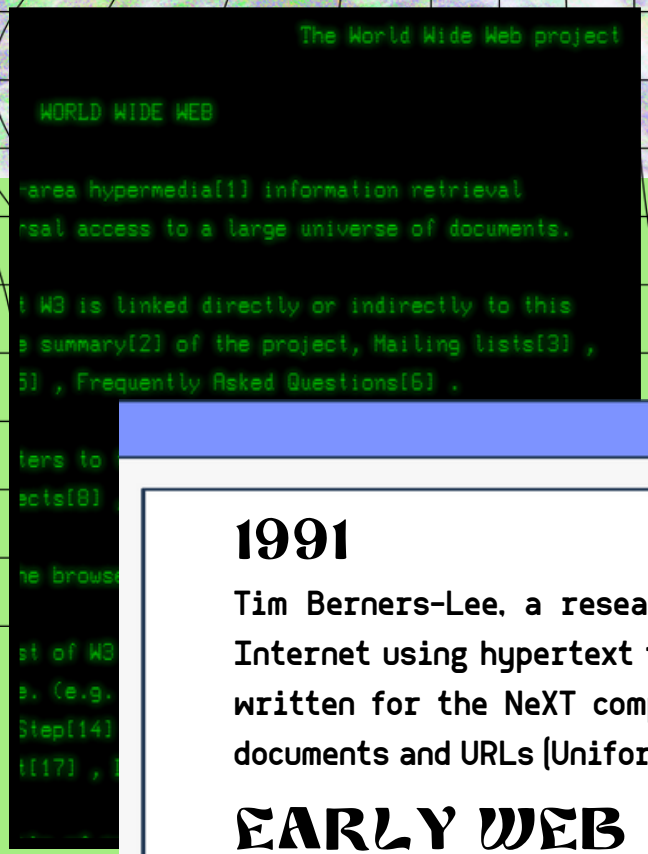
IRC + AOL: CHAT CLIENTS

1980S

IRC was developed in 1988 based on USENET style architecture for real-time communication, and is still in use today. AOL came shortly thereafter, as a dial-up service where users connected to servers via a telephone line using a modem. Data including user profiles, emails, and forum posts, was stored on centralized servers, facilitating a managed online community environment.

1990S

The AOL application emerged as a popular software client, which provided a graphical interface for accessing services like email, bulletin board systems, and later, the World Wide Web, making it a precursor to modern internet browsers. It also became one of the most widely used early ISPS, and a cultural icon of the early web. AOL lost popularity with the rise of web browsers in the late 90s.



WORLD WIDE WEB: HTTP

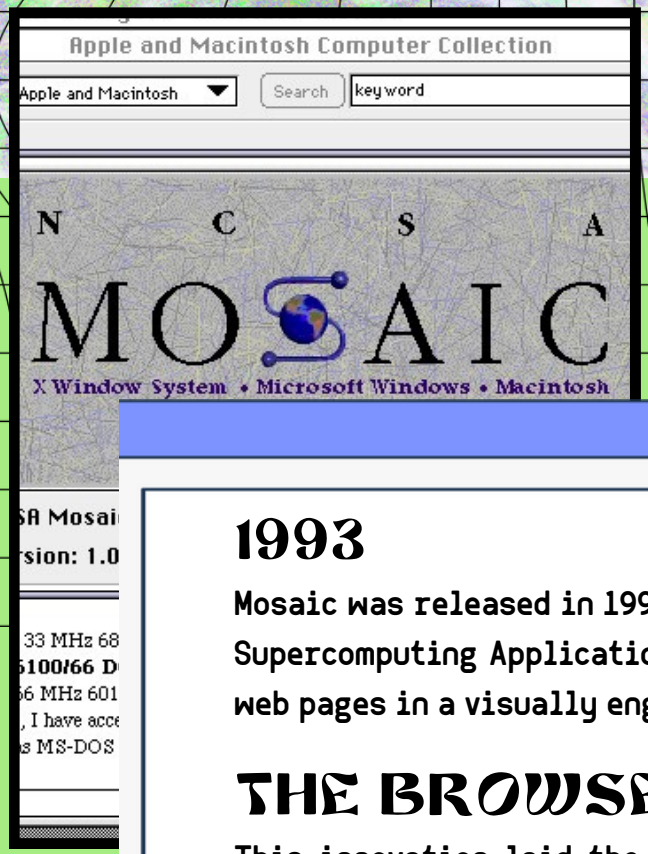
1991

Tim Berners-Lee, a researcher at CERN, developed a new tool for sharing information on the Internet using hypertext that he called the World Wide Web. The first browser was an application written for the NeXT computer, which interpreted HTML (HyperText Markup Language) to display documents and URLs (Uniform Resource Locators) for addressing these pages.

EARLY WEB

HTTP (HyperText Transfer Protocol) for communicating between web browsers and servers gained popularity quickly. By 1994, the formation of the World Wide Web Consortium (W3C) marked a pivotal step towards standardizing web technologies and protocols, ensuring the Web's open and interoperable development across different platforms and browsers.

GUI WEB BROWSERS



1993

Mosaic was released in 1993, developed by Marc Andreessen and Eric Bina at the National Center for Supercomputing Applications, which made the web accessible to non-technical users by presenting web pages in a visually engaging format.

THE BROWSER WARS

This innovation laid the foundation for Netscape Navigator, introduced in 1994 by Andreessen's company Netscape Communications, which quickly became the dominant web browser. Internet Explorer launched in 1995, and the late 90s were marked by the "browser wars" between Netscape and Microsoft culminating in IE's market ascendancy by 2000, driven by aggressive integration strategies and advancements in web technologies.

COMMERCIAL WEB (ECOMM)

1995

The emergence of eCommerce was marked by the launch of Amazon.com by Jeff Bezos and eBay by Pierre Omidyar, signaling the beginning of online retail and auction platforms. This pivotal year set the stage for rapid growth in online shopping, leveraging the Internet's global reach and the evolving web technology infrastructure to transform traditional commerce.

STARTUP BOOM

With the introduction of secure online payment methods, such as PayPal in 1998, the dot-com boom, began, and startups flooded the market with new online business models. This commercial web drove significant advancements in web technology, logistics, and consumer trust, and eventually led to the dot com bubble bursting in 2000.

SOCIAL CODING: GEOCITIES

1994

Founded by David Bohnett and John Rezner, GeoCities became one of the first web hosting services, offering users the ability to create their own websites divided into "cities" to create online communities. The platform rapidly grew in popularity, becoming one of the most visited sites of the late 1990s, until it was acquired by Yahoo! in 1999, and eventually shut down in 2009, marking the end of an early internet era of personal web page creation and community building.

CULTURAL PRESERVATION

The Internet Archive's "GeoCities Archive Project" aimed to save as much of the site's user-generated content as possible. "One Terabyte of Kilobyte Age" is a project by artists Olia Lialina and Dragan Espenschied that seeks to preserve the early internet's agora of vernacular design.

SEARCH ENGINES

1990S

Launched in 1994, WebCrawler set a new standard as the first search engine to index the full text of web pages. Lycos and AltaVista shortly followed. Ask Jeeves was founded in 1997 offering reslutls based on natural language queries. Google's PageRank algorithm developed by Larry Page and Sergey Brin in 1998, paved the way for the evolution of search technologies.

2000S

By 2005, the landscape had seen the rise of Google as the dominant player, amidst significant developments from other engines like Yahoo! and Microsoft's MSN Search, fundamentally changing how users navigate and discover information on the internet.

BLOGS + RSS: SELF-PUBLISHING

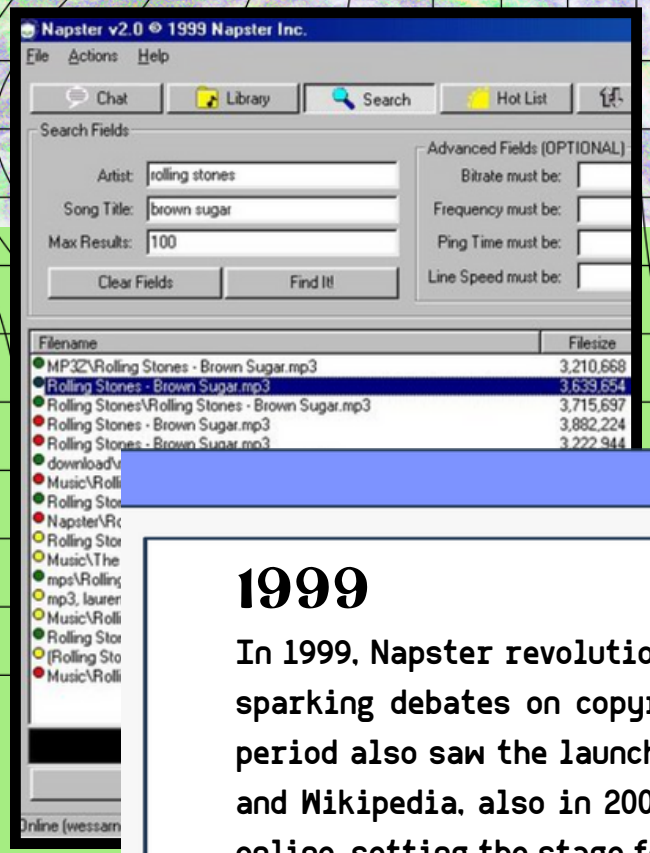
1999

Blogger, launched in 1999, marked one of the earliest platforms that democratized self-publishing, enabling individuals to easily create and publish their own blogs online. This era of digital self-expression expanded with the introduction of LiveJournal in 1999 and WordPress in 2003, among others, fostering a vibrant online community of creatives who could share their content directly with a global audience without the need for traditional publishing channels.

REALLY SIMPLE SYNDICATION

The adoption of RSS technology further revolutionized self-publishing, storing data on the publisher's server in a standardized XML format, enabling subscribers to access updates from multiple sources through a single RSS reader.

MEDIA SHARING

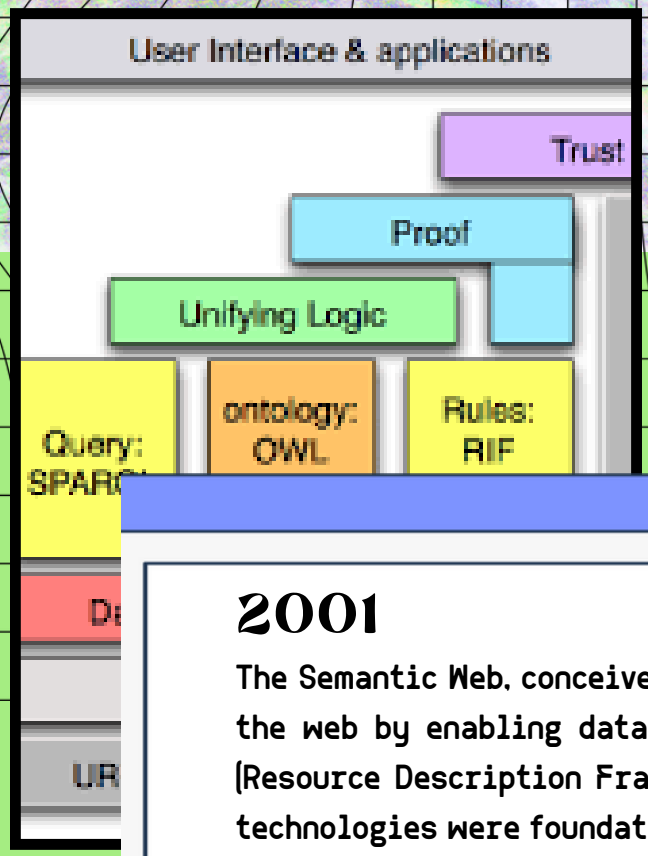


1999

In 1999, Napster revolutionized the music industry by enabling peer-to-peer sharing of MP3 files, sparking debates on copyright laws and altering how music was distributed and consumed. This period also saw the launch of iTunes in 2001, transforming music purchasing into a digital affair, and Wikipedia, also in 2001, which redefined the accumulation and access of collective knowledge online, setting the stage for a new era of media-oriented services

EARLY 2000S

Media sharing evolved significantly with the advent of platforms like Flickr founded in 2004 and YouTube in 2005, further democratizing content creation and distribution, allowing users not only to consume but also to upload and share their own media globally.



SEMANTIC WEB

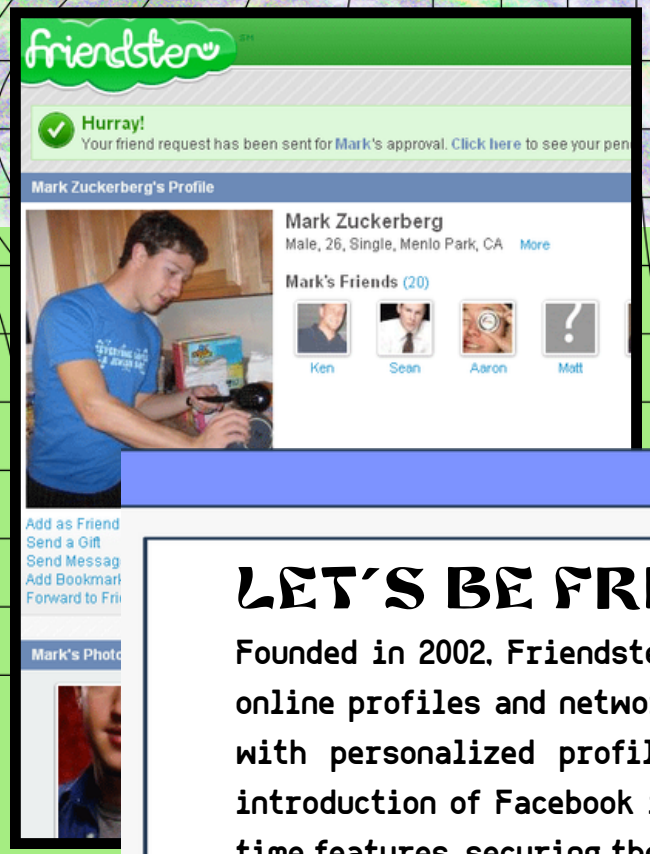
2001

The Semantic Web, conceived by Tim Berners-Lee as a major update to his creation, aimed to enhance the web by enabling data to be shared and understood by machines through standards like RDF (Resource Description Framework), OWL (Web Ontology Language), and SPARQL query language. These technologies were foundational in creating a web of data that was machine-readable.

WEB 3.0 (R1)

The Semantic Web struggled to achieve widespread adoption, due to its complexity and the technical challenges of implementation. The concept was overtaken by more centralized platforms like Facebook, which successfully popularized and commercialized the idea of the Open Social Graph.

SOCIAL NETWORKS

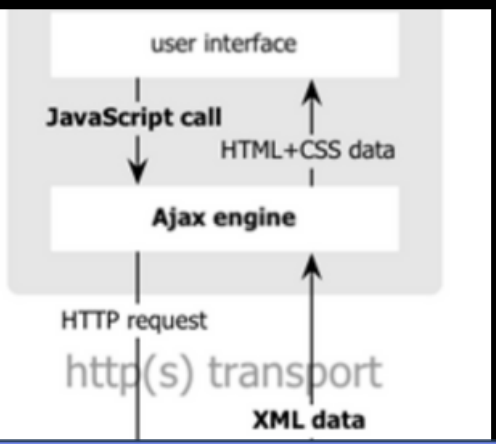


LET'S BE FRIENDS

Founded in 2002, Friendster paved the way for social networking by allowing users to establish online profiles and networks of friends, followed by MySpace in 2003, which expanded the concept with personalized profiles, music, and blogs. The landscape dramatically shifted with the introduction of Facebook in 2004 and Twitter in 2006, which popularized more engaging and real-time features, securing their positions as leaders in the rapidly evolving online landscape.

OR NOT...

Since 2006, social media has profoundly reshaped global communication and culture, fueling the rise of surveillance capitalism through data commodification and playing a pivotal role in amplifying political instability and polarization.



ASYNCHRONOUS WEB DEV: AJAX

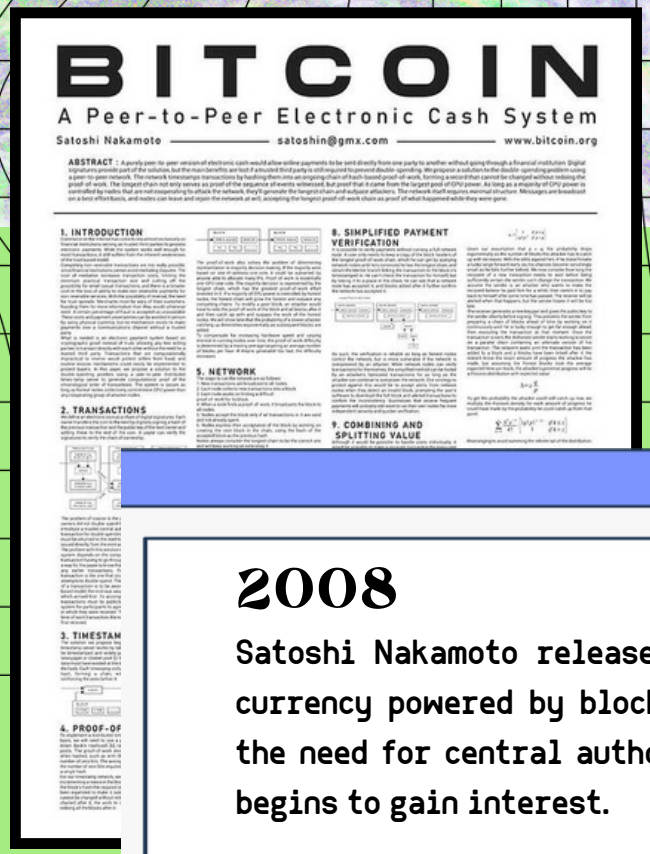
2005

Developer Jesse James Garrett wrote a paper "AJAX: A New Approach to Web Applications" describing this group of new technologies. He felt that the conglomerate needed a short name that summed it up. "Asynchronous JavaScript+CSS+DOM+XMLHttpRequest" AJAX is simply a convenient name given to the set of technologies that are used in asynchronously communicating with a destination server and then handling the response sent by it.

THE GUI OF WEB 2.0

AJAX allows updates to be made to a webpage without the need to reload it. We call this refresh without a reload. This is what the 'A' in AJAX means i.e asynchronously carry out client-server communications that don't block interaction with the main webpage.


Web 2.0


BITCOIN

A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto — satoshin@gmx.com — www.bitcoin.org

SATOSHI'S WHITEPAPER

2008

Satoshi Nakamoto released the Bitcoin whitepaper in 2008, proposing a decentralized digital currency powered by blockchain technology to ensure secure, peer-to-peer transactions without the need for central authorities. By 2012 the concept of using blockchain for other applications begins to gain interest.

2015

This innovation inspired Vitalik Buterin, who, recognizing the limitations of Bitcoin's blockchain for broader applications, proposed Ethereum in 2013—a blockchain platform that integrates smart contracts, thereby extending the technology's utility beyond digital currencies to enable decentralized applications (dApps). In 2015 Ethereum goes live.


IPFS
Web 3.0