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**The History of the World Wide Web: From Concept to Connectivity**

**Introduction**

For billions of people worldwide, the best way to describe it is just ‘the web’. This year is an important milestone in the life of the Web, an internet technology designed to help us employ and share electronic information. The Web has transformed how we communicate, work, play and learn. It has also transformed our politics and our sense of personal identity and dignity. But this is not just another anniversary of computer technology. This is an occasion to consider a nearly 30-year-long experiment in collective collaboration, where tens of thousands of computer scientists took one man’s idea for an internet tool, and turned it into a sprawling ecosystem of people and information. Today, we depend on the Web like no other technology in history. Its impact on the world is still unfolding and has yet to reach its limits. For billions of people worldwide, the best way to describe the Web is just: ‘the web’. Tim Berners-Lee, the British software engineer responsible for its initial development, originally envisioned the Web as a mere addition to an existing network. That precursor, the internet, itself a world-changing technology, had been in development for more than two decades.

**The Conception and Birth of the Web**

The web began, at a symbolically auspicious moment for democracy, on 12 March 1989, when what became its inventor, the British engineer Tim Berners-Lee, then a verminous presence on the fringes of the CERN laboratories in Geneva, proposed to CERN colleagues a global hypertext project. By December of that year, Berners-Lee was writing the minimal toolkit for a web: a generic specification of the formatting of words and images for their distribution over a network, which became a standard called the HyperText Markup Language, or HTML, for ‘hypertext markup language’. Its complement, a standard for the web’s gears, the HyperText Transfer Protocol (HTTP for ‘hypertext transfer protocol’) was to define the ways that CERN’s software could (usefully) interact with the computers of others to discover and deliver HTML documents. It was in 1990 that, having requested and been granted weeks of billed vacation time for his efforts, Berners-Lee built the first web browser and the first web server that provided the basic tools of his invention for the unusual challenges of networking, international politics and global history to come.

**The Early 1990s: Public Access and the Browser Wars**

Use of the web was restricted to CERN and was pretty unknown outside the research community until 1993 when the web was released it ‘[was] an event that broke the logjam’, according to The Economist. After the release, web use grew rapidly with the release of the Mosaic browser in late 1993 by Marc Andreessen and his group at the National Center for Supercomputing Applications (NCSA). With a graphical user interface, Mosaic made [the web] accessible to the people, as Tim Berners-Lee said to the New Yorker.

**The 2000s: Web 2.0 and Social Media**

And, starting around the year 2000, from this quagmire of static HTML came new web applications: new ways of looking at, and theorising, the web and the users as Web 2.0, dynamic, and interconnected, interactive and collaborative: the spectator transformed into the performer; the user transformed into the creator. In the years since, social media, and the ubiquitous presence of Facebook, Twitter, YouTube and more.

**The 2010s: The Rise of Mobile and Cloud Computing**

The 2010s would bring new interfaces such as smartphones and tablets into the mix of the way the web was experienced – so much so that it led to the web being taken over by mobile-first design and an explosion in development of responsive web technologies, while in the background the backend of the whole web found itself in the throes of change brought by the rise of a new able-to-serve-all paradigm of cloud computing, with Amazon, Google and others becoming industry leaders in web-based services that would soon make it easier and cheaper than ever to scale a web application.

**Today and Tomorrow: Challenges and Innovations**

The web has lots of problems today – privacy, security, misinformation, the digital divide – but also new strengths and continuing growth with new technologies such as artificial intelligence, the Internet of Things, and 5G that could power a further round of innovation.

**Conclusion**

The plethora of new hardware in the 2010s– smartphones and tablets– how users experienced the web, much like the early 2000s where mobile internet usage saw an exponential increase in the 2010s, to a point that web design in the 2010s was largely shaped by mobile-first design and, similarly to the keywords in the early 2000s, a growth in development of responsive web technologies. Concurrently, with cloud computing, the backend of the entire web was changing like never before, with industry leading web-based services being provided by Amazon, Google and Microsoft that now made it possible to scale a web application cheaper and easier than ever before.

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