**History of the Internet**

The world would not be what it has become today without the internet. It touches just about every aspect of how we live, work, socialize, shop, and play. In just a few decades, the internet has gone from a novel way for the US military to keep in touch, to the always-connected heartbeat of the human race. With each passing year, more and more people have gained access to the internet.

Internet started as a defense department network designed specifically to hook up different research centers around a country which began in ARPA the Advanced Research Projects Agency in Arlington Virginia.

**Early days**

The internet traces its roots to a US defense department project in the 1960s born out of the Cold War, and a desire to have armed forces communicate over a connected, distributed network. The military’s research arm, the Advanced Research Projects Agency (ARPA), began work on a communication project, which led to the creation of ARPANET, one of the earliest iterations of computers talking to each other on a network. ARPANET eventually connected military installations, third-party contractors, and a handful of universities in the US. By the mid-1970s, ARPANET had connected to NORSAR, a US-Norwegian system designed to monitor seismic activity from earthquakes or nuclear blasts, over satellite. The Norwegian system then connected to computers in London, and eventually, other parts of Europe.

The computers used to connect this nascent network together were gargantuan by today’s standards. The SDS Sigma 7, which cost $700,000 which is about $4.8 million in today’s rate the mid-1960s was used by the University of California, Los Angeles to send the first message over ARPANET to Stanford University. SDS, or Scientific Data Systems, an early US computer company staffed by Packard Bell alums, built that first computer that connected to the network. The machine, like its offspring that helped the first people land on the Moon, was not like the computer we know today: It took up a large portion of the room it was in and consisted of a series of cabinets with reel-to-reel tapes, flashing buttons, and toggle switches. There would’ve been a small station with a keyboard and a very basic monitor, but much of the data for the machine would’ve been stored on punch cards. The first message sent was the word “lo;” the researchers were trying to type the word “login” and the system crashed after two letters.

**Dial up days**

The earliest days of the consumer internet were sound tracked by a cacophony of digital hisses and beeps.

As internet protocols and technologies were standardized, in the late 1980s and early 1990s, universities, businesses, and even regular people started to connect over the internet. But before the invention of the World Wide Web, accomplishing anything was a real chore. Information on the internet was difficult to search for, and almost impossibly dense.

We may not have moved beyond the internet of the early 1990s were it not for Tim Berners-Lee, who was looking for an easier way to find and share research. Berners-Lee, who in 1989 was a researcher working at CERN, the Swiss nuclear research facility, came up with the concept of the World Wide Web, a decentralized repository of  information, linked together and shareable with anyone who could connect to it. He built the first webpage in 1993. Seeing the value in what Berners-Lee and his team had created, CERN opened up the software for the web to the public domain, meaning anyone could use it and build upon it.

Berners-Lee also created the first website browser (initially called World Wide Web and then renamed Nexus). But it wasn’t until a team of former students at the University of Illinois at Urbana–Champaign (UIUC), led by Marc Andreessen, created the Mosaic web browser in 1993 that the web started to take off. Andreessen and his team left the research facility at UIUC to start Netscape, the company that produced the first web browser many people ever used.

By the mid-1990s, Netscape had about 80% of the browser market in the US and Europe. Its only real competitor was Microsoft’s Internet Explorer, which first launched with Windows 95. But Microsoft, a huge company even then, was able to iterate its software faster as the web changed, implementing new technologies like CSS (cascading style sheets—the code that ensures the web is more than just bland pages of text) before Netscape could. Microsoft’s dominance remained pretty much unchallenged until the dawn of the mobile web, but more on that later.

**Broadband days**

At some point in 2004, for the first time ever, there were more people in the US who had access to broadband internet than dial-up, according to the Pew Research Center. The price of broadband connections had begun to fall as more users signed up. Broadband modems act a little differently than their dial-up predecessors in that they do not need to call out over the phone line to your internet service provider to establish a connection to the internet—they stay connected unless they’re turned off. This coupled with the advent of wifi, broadband has revolutionized the way that people connect to the internet. Before wifi and broadband, accessing the internet was a very static and slow experience, requiring someone to sit in front of a large computer, physically connected to a modem, to access the web. But when wifi started to gain popularity, it made the internet accessible wherever someone had a laptop, tablet, or Palm Pilot and wifi connection.

Broadband speeds are generally faster than dial-up. In the US, the Federal Communications Commission (FCC) considers a broadband connection—at least for a fixed line, rather than a cellular connection—one that can achieve speeds of 25 Mbps for downloads and 3 Mbps for uploads. This could certainly change in the future—the definition has changed in the past—but for now, it accurately portrays what most of the country has access to.

**Cellular data**

Mobile broadband—connecting to the internet through a cell phone—has exploded in popularity over the last few years. At the end of 2013, there were about 1.9 billion smartphone subscriptions in the world, and by the end of 2018, there were about 5.3 billion—that’s a jump of about 180% in five years.

It’s a far cry from the earliest iterations of the mobile internet, like WAP (Wireless Application Protocol). Introduced in 1999 and seen in such phones as the Nokia 7110 (which many incorrectly associate with being featured in the year’s smash-hit film *The Matrix*), WAP was sort of like the early dial-up of mobile internet. You could look at rudimentary pages of the internet, to check things like sports scores or news headlines. But getting too deep into the internet would likely burn through whatever overpriced data plan you had at the time.

The first truly useful mobile data standard was 3G in 2003, when radio technology first allowed for more than calls and texts to be sent over the air. (In the western world in 2019, it’s often the connection type your smartphone will fall back to when it can’t connect to LTE; in other countries, it’s still the standard.)

The mobile web truly took off with the iPhone, however, and all the devices that aimed to copy it. When introducing the iPhone, Apple founder Steve Jobs said it was taking on the role of three devices at once: “It’s an iPod, a phone, and an internet communicator.”

The iPhone was first launched in 2007 (though a 3G model wasn’t introduced until 2008). Over the last decade, Apple has sold more than 1 billion iPhones and spurred on competitors like Google, whose Android operating system is now installed on over [2 billion devices](https://www.cnet.com/news/google-boasts-2-billion-active-android-devices/). Suddenly, a device that fit in the palm of your hand could access the web in (more or less) the same way as a laptop. The mobile web has created an entirely new economy—[Apple estimates](https://www.apple.com/newsroom/2019/01/apple-entrepreneur-camp-kicks-off-as-app-developer-earnings-hit-new-record/) that developers have generated $120 billion in revenue from apps developed for the iPhone and iPad since Apple’s App Store was first introduced in 2008. What’s more, [we now spend](https://www.inc.com/melanie-curtin/are-you-on-your-phone-too-much-average-person-spends-this-many-hours-on-it-every-day.html) an average of fours hours every day on our phones, much of that time going to social media.