# History of Internet [The evolution]

The internet traces its roots to a US defense department project in the 1960s that 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 ARPA that stands for Advanced Research Projects Agency, 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. This network uses Circuit switching, that is a method of implementing a telecommunications network in which two network nodes establish a dedicated circuit through the network before the nodes may communicate. The circuit guarantees the full bandwidth of the channel and remains connected for the duration of the communication session. The circuit functions as if the nodes were physically connected as with an electrical circuit.

Leonard Kleinrock at MIT published the first paper on packet switching theory in July 1961 and the first book on the subject in 1964. Kleinrock convinced Roberts by the theoretical feasibility of communications using packets rather than circuits, which was a major step along the path towards computer networking. The other key step was to make the computers talk together. To explore this, in 1965 working with Thomas Merrill, Roberts connected the TX-2 computer in Mass. In California with a low speed dial-up telephone line creating the first wide-area computer network ever built. The result of this experiment was the realization that the time-shared computers could work well together, running programs and retrieving data as necessary on the remote machine, but that the circuit switched telephone system was totally inadequate for the job. Kleinrock’s conviction of the need for packet switching was confirmed.

ARPANET was one of the first computer networks to use packet switching. Development of ARPANET started in 1966, and the first two nodes, UCLA and SRI (Sandford Research Institute), were connected, officially starting ARPANET in 1969. The first RFC also surfaced in April 1969, as a document to define and provide information about computer communications, network protocols, and procedures. The first network switch and IMP (Interface Message Processor) was sent to UCLA on August 29, 1969. It was used to send the first data transmission on ARPANET.

The Internet was officially born, with the first data transmission being sent between UCLA and SRI on October 29, 1969, at 10:30 p.m. After that several changes occur such that

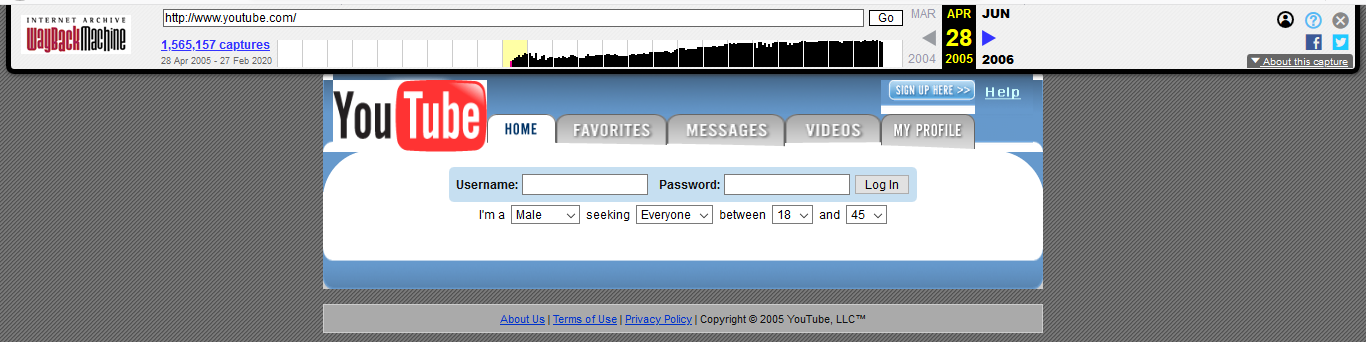
* Steve Crocker and a team at UCLA released NCP (NetWare Core Protocol) in 1970. NCP is a file sharing protocol for use with NetWare.
* Ray Tomlinson sent the first e-mail in 1971. ALOHA net, a UHF wireless packet network, is used in Hawaii to connect the islands together.
* Although it is not Wi-Fi, it helps lay the foundation for Wi-Fi. Ethernet is developed by Robert Metcalfe in 1973 while working at Xerox PARC.
* The first international network connection, called SATNET, is deployed in 1973 by ARPA.
* An experimental VoIP call was made in 1973, officially introducing VoIP technology and capabilities.
* However, the first software allowing users to make VoIP calls was not available until 1995.
* The first routers were used at Xerox in 1974. However, these first routers were not considered true IP routers.
* Ginny Strazisar developed the first true IP router, originally called a gateway, in 1976.
* Bob Kahn invented the TCP/IP protocol for networks and developed it, with help from Vint Cerf, in 1978.
* Internet protocol version 4, or IPv4, was officially defined in RFC 791 in 1981. IPv4 was the first major version of the Internet protocol.
* BITNET was created in 1981 as a network between IBM mainframe systems in the United States.
* CSNET (Computer Science Network) was developed by the U.S. National Science Foundation in 1981. ARPANET finished the transition to using TCP/IP in 1983.
* Paul Mockapetris and Jon Postel implement the first DNS in 1983.
* The NSFNET (National Science Foundation Network) came online in 1986.
* It was a backbone for ARPANET, before eventually replacing ARPANET in the early 1990s.
* BITNET II was created in 1986 to address bandwidth issues with the original BITNET.
* The first T1 backbone was added to ARPANET in 1988.
* WaveLAN network technology, the official precursor to Wi-Fi, was introduced to the market by AT&T, Lucent, and NCR in 1988.
* Details about network firewall technology was first published in 1988.
* The published paper discussed the first firewall, called a packet filter firewall, that was developed by Digital Equipment Corporation the same year.
* Kalpana, a U.S. network hardware company, developed and introduced the first network switch in 1990.
* IPv6 was introduced in 1996 as an improvement over IPv4, including a wider range of IP addresses, improved routing, and embedded encryption.
* The first version of the 802.11 standard for Wi-Fi is introduced in June 1997, providing transmission speeds up to 2 Mbps.
* The 802.11a standard for Wi-Fi was made official in 1999, designed to use the 5 GHz band and provide transmission speeds up to 25 Mbps. 802.11b devices were available to the public starting mid-1999, providing transmission speeds up to 11 Mbps.
* The WEP encryption protocol for Wi-Fi is introduced in September 1999, for use with 802.11b. 802.11g devices were available to the public starting in January 2003, providing transmission speeds up to 20 Mbps.
* The WPA encryption protocol for Wi-Fi is introduced in 2003, for use with 802.11g.
* The WPA2 encryption protocol is introduced in 2004, as an improvement over and replacement for WPA. All Wi-Fi devices are required to be WPA2 certified by 2006.
* The 802.11n standard for Wi-Fi was made official in 2009.
* It provides higher transfer speeds over 802.11a and 802.11g, and it can operate on the 2.4 GHz and 5 GHz bandwidths.
* The Wi-Fi Alliance introduced WPA3 encryption for Wi-Fi in January 2018, which includes security enhancements over WPA2.

In conclusion, 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.

# View the 5 – 10 popular websites of your choice from web archive URL and put your observation and assessment

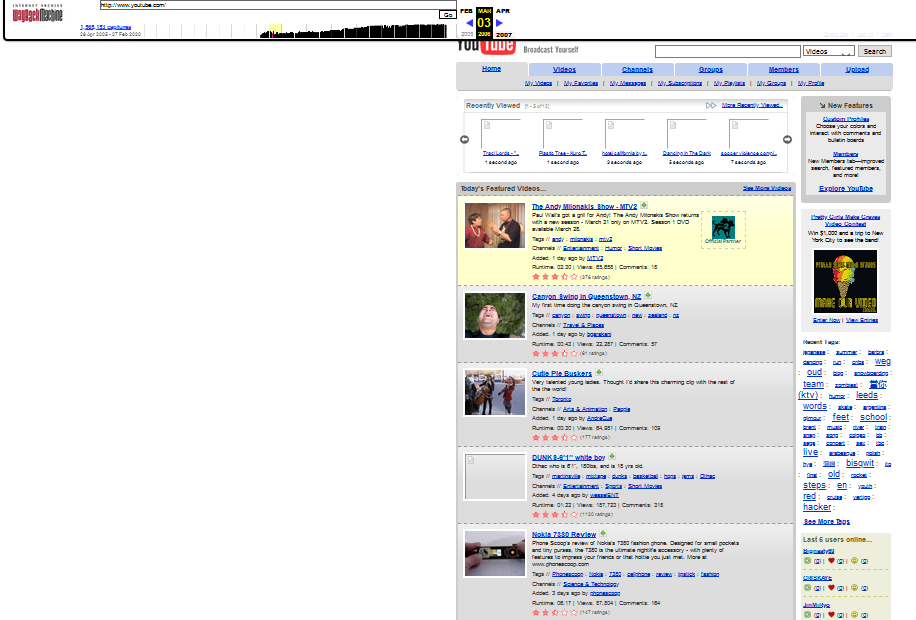
## YouTube.com

### On April 28 2005



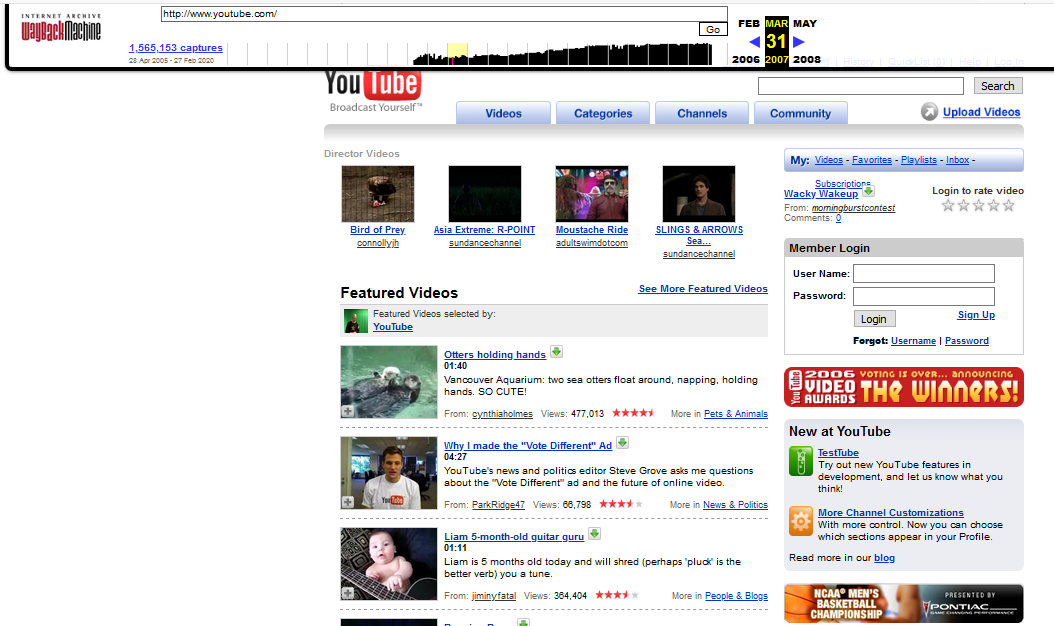
* It had not scroll feature.
* It had very simply requirement to Log In because of this it seemed that it had some security issue.
* It has not more kind of web page color
* It had color change while used that page and leave that page on the page link
* It had home, favorites, messages, videos and my profile pages

### On March 03 2006



* It had not scroll feature
* It had arrow to go through more recently viewed
* Videos were easily download by downloading arrow on the video
* It had showed comments, views and runtime of the video
* The page was very attractive to see
* It had an access to see last 5 users online
* It had home, videos, channel, group, member and upload pages

### On March 31 2007



Recourse

<https://en.wikipedia.org/wiki/History_of_the_Internet>

<https://www.networkworld.com/article/2870267/the-evolution-of-the-internet.html>

<https://www.internetsociety.org/internet/history-internet/brief-history-internet/>

<https://en.wikipedia.org/wiki/Circuit_switching>

<https://www.computerhope.com/history/network.htm>

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