

**ADDIS ABABA UNIVERSITY**

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**CENTER OF INFORMATION TECHNOLOGY AND SCIENTIFIC COMPUTING**

**Evolution of Internet to the World Wide Web**

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# **Introduction**

Every day, millions of people around the world use the Internet to search for and retrieve information on all sorts of topics in a wide variety of areas. The information can appear in several types of digital formats, such as text, images, audio, or video. Individuals, companies, research labs, libraries, news organizations, television networks, governments, and other organizations all make resources available. People communicate with each other, sharing information and making commercial and business transactions, using electronic mail. All this activity is possible because tens of thousands of networks are connected to the Internet and exchange information in the same basic ways. Never before has so much information from such a wide variety of sources and in so many formats been available to the public.

The World Wide Web is not the same as the Internet, but the two terms are popularly used as synonyms. The Web is the information connected or linked in a way that is like a spider’s web. Using a Web browser, the computer program or software that lets you access the World Wide Web, you can find information on almost any topic with just a few clicks of your mouse button. Several search tools (programs that search the Web for resources) are readily available. When you type a keyword or phrase into a form and click on a button or icon on the screen, a list of items appears. You simply click on the ones you want to retrieve. The amount and variety of information available are astounding, but sometimes it’s difficult to find appropriate material.

# **History of Internet**

The Internet is a vast network of computers and other mini-networks all linked together so that everyone can find information, purchase products, or meet new people. It is easily assessable from home for anyone that has a computer and a modem or at a local library. It has made a huge impact since its introduction to the public and now some people cannot see life without it. It is also relatively new considering it was just about 10 years ago that it was made public and easily accessible to everyone thorough online services.

The Internet is first conceived in the early ’60s. Under the leadership of the Department of Defence’s Advanced Research Project Agency, it grows from a paper architecture into a small network (ARPANET) intended to promote the sharing of super-computers amongst researchers in the United States. Through the next couple years there were talks of about how this network could come into the cooperate world and in 1969 researchers at four US campuses create the first hosts of the ARPANET, connecting Stanford Research Institute, UCLA, UC Santa Barbara, and the University of Utah. The ARPANET is a success from the very beginning. Although originally designed to allow scientists to share data and access remote computers, email quickly becomes the most popular application. The ARPANET becomes a high-speed digital post office as people use it to collaborate on research projects and discuss topics of various interests. In 1971 the ARPANET grows to 23 hosts connecting universities and government research centres around the country. In 1972 the Internetworking Working Group becomes the first of several standards which set entities to govern the growing network. Vinton Cerf is elected the first chairman of the INWG, and later becomes known as a “Father of the Internet.” The ARPANET goes international in 1973 with connections to University College in London, England and the Royal Radar Establishment in Norway.

From 1974 to 1981 the general public starts to get its first vague hint of how networked computers can be used in daily life as the commercial version of the ARPANET goes online. The ARPANET starts to move away from its military and research roots and in 1974 Bolt, Beranek & Newman opens Telnet, the first commercial version of the ARPANET. In 1981 ARPANET has 213 hosts and a new host was being added approximately once every 20 days.

From 1982 to 1987 Bob Kahn and Vint Cerf are key members of a team which creates TCP/IP, the common language of all Internet computers. For the first time the it seemed as though the loose collection of networks which made up the ARPANET is seen as an “internet”, and the Internet as we know it today is born. The mid-80s marks a boom in the personal computer and super-minicomputer industries. The combination of inexpensive desktop machines and powerful, network-ready servers allows many companies to join the Internet for the first time. Corporations begin to use the Internet to communicate with each other and with their customers. In 1982 the term “Internet” is used for the first time. By 1984 the number of Internet hosts exceeds 1,000, by 1987 the number exceeded 10,000, and by 1990 the number exceeded 300,000.

By 1988 the Internet is an essential tool for communications, however it also begins to create concerns about privacy and security in the digital world. New words, such as “hacker,” “cracker” and” electronic break-in”, are created. These new worries are dramatically demonstrated on Nov. 1, 1988 when a malicious program called the “Internet Worm” temporarily disables approximately 6,000 of the 60,000 Internet hosts. The Computer Emergency Response Team was formed in 1988 and it was their job to address security concerns raised by the Worm.

In 1993 corporations wishing to use the Internet face a serious problem which was commercial network traffic was banned from the National Science Foundation’s NSFNET, the backbone of the Internet, but in 1991 the NSF lifts the restriction on commercial use, clearing the way for the age of electronic commerce.

Also in 1991 at the University of Minnesota, a team led by computer programmer Mark MaCahill releases “gopher,” the first point-and-click way of navigating the files of the Internet. Originally designed to ease campus communications, gopher is freely distributed on the Internet. 1991 is also the year in which Tim Berners-Lee, working at CERN in Switzerland, posts the first computer code of the World Wide

Web in a relatively innocuous newsgroup, “alt.hypertext.” The ability to combine words, pictures, and sounds on Web pages excites many computer programmers who see the potential for publishing information on the Internet in a way that can be as easy as using a word processor.

Marc Andreesen and a group of student programmers at NCSA (the National Centre for Supercomputing Applications located on the campus of University of Illinois at Urbana Champaign) will eventually develop a graphical browser for the World Wide Web called Mosaic and by 1993 Mosaic becomes the first graphics-based Web browser.

By 1993 traffic on the NSF backbone network exceeds 1 trillion bytes per month, and the first audio and video broadcasts take place over a portion of the Internet known as the “MBONE.” More than 1,000,000 hosts are now part of the Internet and it expands at a 341,634% annual growth rate.

In 1995 NSFNET reverts back to a research project, leaving the Internet in commercial hands. The Web now comprises the bulk of Internet traffic. James Gosling and a team of programmers at Sun Microsystems release an Internet programming language called Java, which radically alters the way applications and information can be retrieved, displayed, and used over the Internet.

As the Internet celebrates its 25th anniversary in 1996, the military strategies that influenced its birth become historical footnotes. Approximately 40 million people are connected to the Internet. More than $1 billion per year changes hands at Internet shopping malls, and Internet related companies like Netscape are the darlings of high-tech investors. Users in almost 150 countries around the world are now connected to the Internet. The number of computer hosts approaches 10 million. Within 30 years, the Internet has grown from a Cold War concept for controlling the tattered remains of a post-nuclear society to the Information Superhighway. Just as the railroads of the 19th century enabled the Machine Age, and revolutionized the society of the time, the Internet takes us into the Information Age, and profoundly affects the world in which we live.

In present day people are telecommuting over the Internet, allowing them to choose where to live based on quality of life, not proximity to work. Many cities view the Internet as a solution to their clogged highways and fouled air. Schools use the Internet as a vast electronic library, with untold possibilities. Doctors use the Internet to consult with colleagues half a world away. The Internet even offers a single Global Village; it threatens to create a 2nd class citizenship among those without access. As a new generation grows up as accustomed to communicating through a keyboard as in person, life on the Internet will become an increasingly important part of life on Earth. The Age of the Internet has arrived.

# **Website Features in Different Years**

# **Categories of Website**

# **Guidelines for Evaluating a Website**