

History of the internet

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Many years ago a network was born it only had several computers were connected and now that same network has millions of computers connected at all times, it's called the Internet. This paper will explain: the birth, evolution, growth, and how it's changed the world as we know it. The audience for this material would be anyone interested in learning more about the Internet. I will offer a guided tour though the evolution of the Internet and explain what this effect has on its growth and popularity.

An idea was born years ago but not till recently has it come into vision to the rest of the world, it's called the Internet. It's like a plague growing across the world, signs of its growth are seen everywhere. For example, most of all new television commercials have some form of Web address in them for Internet information about their products or service. Most all major companies have web pages and direct Internet connection for customer support The Internet is reaching out and touching everyone's lives even without their knowledge.

“ The Internet is first conceived in the early '60s during the Cold War. Under the leadership of the Department of Defense's Advanced Research Project Agency (ARPA), 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.” (<http://www.pbs.org/internet/timeline/>)

The purpose of its existence was for fast communication in during a global war or nuclear attack. Analyst projected in a major attack on the United States would destroy most major communications. The government established a new form of network that was large scale and expandable enough for anyone to be connected. The first users of this new network were

using it for sharing information and data in research. Now days the most the Internet has to fear is a back-ho from a tractor, or government involvement.

A man by the name of Leonard Kleinrock at MIT published a paper on packet switching theory in July 1961 and the first book on the subject in 1964. This was using tiny of bits of electricity moving though network wire to carry the signal, the very basics to networking. Kleinrock was convinced of 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 first two computers with a low speed dial-up telephone line, this created the first (however small) wide-area computer network ever built. This was considered a wide-area due to the fact two computers were in different states. The result of this experiment was the realization that the time-shared computers could work well together. Running programs and retrieving data was necessary, on the remote machine, but that the circuit switched telephone system was totally inadequate for the job. Thomas Merrill and Roberts knew much more work was needed before true networking could be achieved. Kleinrock's conviction of the need for packet switching was confirmed. This was an idea to the world of networking, it was not till later when companies started realizing the usefulness of just what Kleinrock had done. (See Figure #1 at any time for timeline information)

In late 1966 DARPA went into development which later this new computer network concept quickly put together plans for the “ ARPANET.” The RAND group had written a paper on packet switching networks for secure voice in <https://assignbuster.com/history-of-the-internet-722/>

the military in 1964. It happened that the work at MIT (1961-1967), at RAND (1962-1965), and at NPL (1964-1967) had all proceeded in parallel without any of the researchers knowing about the other work. So two different groups of researchers were doing the exact same thing basically and did not know about it till later. The word " packet" was adopted from the work at NPL and the proposed line speed to be used in the ARPANET design was upgraded from 2.4 kbps to 50 kbps. This was 25 times faster than the first speeds that they were working with at the time. This was also a major jump in the speed of packet travel during the day. This new speed would soon become very slow, due to the new amount of network traffic, as many new connections would be introduced.

Connections were added quickly to the ARPANET during the following year. Work proceeded on completing a functionally complete Host-to-Host protocol and other network software. At first all software had to be written from scratch but as time went on they adopted what they had learned to create faster networking software. It was not till December 1970 that the Network Working Group (NWG) finished the initial ARPANET Host-to-Host protocol, called the Network Control Protocol (NCP). This was to set the standards for the networking in hopes of creating compatibility for most connections. As the ARPANET sites completed implementing NCP during the period 1971-1972, the network users finally could begin to develop applications.

It was about this time when E-mail was starting to become more relevant to the Internet, due to the new standards that were being set at the time.

More and more people were being connected and they were given address names. E-MAIL Stands for Electronic Mail, this is like regular mail, except

faster. It only takes less than a second for you to send a message to someone half way across the world. Most Internet Providers give you free e-mail with your Internet package. An e-mail address is like a p. o. box in regular mail. It's made up of your name, or login, then an @ symbol. Then the company that's supplying the e-mail or school. An example is something like Over the years E-mail has caused some major problems with the Internet. Powerful software has been developed to search the Internet for E-Mail addresses. Once the address is found it logs them into a huge database. Companies who run and maintain the software then sell their databases to people that want to sell you something or provide you a service. The whole process becomes a huge junk mail system. This is creating many problems with E-mail and also slowing down the Internet. People have been hit with so many junk E-mails at one time that it causes network problems. This junk E-Mail is also known as Spam, unwanted E-mail.

From 1970-1973 the ARPANET is a success from the very beginning. Although it was originally designed to allow scientists to share data and access remote computers, email quickly becomes the most popular application. Electronic mail quickly became very popular with it's growth along with Newsgroups. In 1971 ARPANET grows to 23 hosts connecting large universities and government research centers around the country. Over the next few years ARPANET starts to move away from its military/research roots. In 1976 Queen Elizabeth goes online with the first royal email message. At the start of 1981 ARPANET has 213 hosts, but this also right before the start of the micro-computer explosion. A new host is added approximately once every 20 days. From 1982-1987 researchers all

across the network are working on improving the network, as problems are starting to pop up. Researchers at MIT created TCP/IP, the common language of all Internet computers. TCP/IP was to become one of the most important items for the improvement of the Internet. Before then the names and numbers for all the connected computers for the networks were a jumble and it was difficult to connect to some of the systems. TCP/IP was then used to redistribute out the names and numbers of the connected computers. For the first time 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. Due to the technology was discovered to create them in a cheaper and faster manner. The power of this new desktop tool quickly grew as business software was created. This new business software allowed the computer to handle large number calculations with ease, as spreadsheet and databases were created. With combination of inexpensive desktop machines and powerful, network-ready servers this allowed 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 and in 1987 the number of Internet hosts exceeds 10, 000 and that was number was growing quickly.

It was around this time when Newsgroups were where starting to become very large. The Internet we know today started out with one branch called NEWSGROUPS. These are places where people can post messages and talk to each other. Newsgroups is the oldest area of the Internet, all it contains is text messages posted from people. Today they are more popular than ever.

Today there are thousands of messages' areas of all sorts of topics. You can find information about anything and ask questions about them. You can ask publicly, questions about that topic and maybe someone will help you out with it, or at least tell you where you can go to find information about it. Or you can do the same and help others.

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. Computer hackers, have been around as long as the computer has, and all ways will be. Not all hackers in the world are evil villains, working and plotting on crashing your computer. Most are just are just curios to see if they can do it and get away with it. All hackers are not evil monsters who want destroy your personal data and take down your server. It's the ones who are wanting to destroy your data and server who you need to protect your self from. Companies learned long time ago you just can not just simply wire up your network into the Internet, this is too dangerous. Firewalls were invented, (this is some software that was written, it acts like a traffic cop). The firewall filters the traffic based on its IP address and can also filter the port that it's sent through. These new worries are dramatically illustrated on Nov. 1, 1988 when a malicious program called the “ Internet Worm” temporarily disables approximately 6, 000 of the 60, 000 Internet hosts. Along with Hackers and Crackers there is also Virus's.

“ What is a Virus? Symantec Corporation says a virus is “ a parasitic program written intentionally to enter a computer without the user's permission or knowledge. The word parasitic is used because a virus attaches to files or

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boot sectors and replicates itself thus continuing to spread. Though some viruses do little but replicate, others can cause serious damage or affect program and system performance. A virus should never be assumed harmless and left on a system.”

http://www.symantec.com/avcenter/vfaq.html#what_virus

In 1992 the first audio and video broadcasts take place over a portion of the Internet known as the “MBONE.” Another major item in the new expanding world of the Internet was hypertext. This allowed graphics and sounds to be viewed over the Net. In 1993 Mosaic, the first graphics-based Web browser, becomes available. This later becomes the most popular area of the Internet is the World Wide Web, or WWW. This is what makes the Internet what it is. The WWW has a lot of things in common with the other Internet PROTOCOLS. It has information, etc. What makes the WWW so popular is that it’s full of pictures. Bright, colorful, fast-loading pictures. One reason is that the people of America have become so use to the flow of information that it must be constantly changing and updated, also Americans are so use to television. The type of information you are likely to find on the Internet is free information. Items such as government documents, works with expired copyrights, works that are in the public domain, and works that authors are making available to the Internet community on an experimental basis. Some types of information you are not likely to find on the Internet, most notably, commercial works that are protected by copyright law, information given from companies or organizations. (See Figure #2 for information of how the Internet is laid out)

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In 1996 the Internet celebrated its 25th anniversary, the military strategy that influenced its birth has become just a historic footnote and at the time an estimated 40 million people are connected to the Internet. More than \$1 billion per year changes' hands at Internet shopping malls, auctions, and companies that sell their goods and services on the Net. Things are not all calm on this new growing information super highway, Netscape and Microsoft are to start a war over the way HTML is run over then Net. Web page browsers, there mainly two left out of the few that there ever were. Netscape and Microsoft Internet Explorer. There is a huge war right now between the two. Each is making their own version, but Microsoft is making there browser a bit different, in the way it handles some of the HTTP coding. Netscape uses the HTML coding information that was written by the people who wrote it. While Microsoft is changing the way the original format is. Their reason is just to be different and make things harder for the creators of web pages. They hope to win the browser war and by then have the standards of HTML changed to meet there needs.

Today many parents are talking their children out of public school and placing them into home school Parents are finding the Internet a very useful item in teaching their children. One reason is the world of knowledge that is available to them. But at the same time care needs to be taken in where that information is coming from. Is the information that their children is learning from coming from a reputable location or just some persons personal web page? One way to know just where the information is coming from is its location. Looking at the web address, if the address has a ". org" or ". gov" in the address. Those are reputable places of information.

“ Computers in some schools are helping teachers to keep themselves trained on the latest equipment and software. Teachers must constantly adapt their curriculum to the changing needs of their students that computer technology can bring about (IFT Insight, 1996). With the Internet , teachers are no longer necessarily the center of instruction. With the proper use of the WWW tools, students can take control of their own learning at different levels. Cognitive research has confirmed that students learn best when they are engaged with their studies, and when they are making decisions and thinking critically (Elmore, 1993). The role of the teacher begins to change to that of the person who guides students towards finding and sorting through information. In recent years the amount of information people must deal with is increasing exponentially. It is unrealistic to expect that teachers can teach all the necessary information that students will need to succeed in a community that expects tougher requirements than ever before.”

http://www.geocities.com/Athens/5461/paper_1.html

Another large area to the Internet is what is called IRC (Internet Relay Chat) provides a way of communicating (real-time) with people from all over the world. It's simple and easy, but it's only in the form of text. It consists of various separate networks (or “ nets”) of IRC servers, machines that allow users to connect to IRC. The largest nets are EFnet (the original IRC net, often having more than 15, 000 people at once). Once connected to an IRC net, you will usually join one or more “ channels” and converse with others there. On EFnet, there often are more than 5, 000 channels. Conversations may be public (where everyone in a channel can see what you type) or private (messages between only two people, who may or may not be on the

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same channel). IRC is not a “ game,” and I highly recommend you treat people you meet on IRC with the same courtesy as if you were talking in person. One of the problems that IRC has brought to Internet is stalkers and petafiles, it seems that children are in some danger while using IRC. There have been cases where children have been persuaded to run away from home or even worse to kill them selves. In 1997 the FBI did a research project to find out just how bad the problem was. The FBI used fake accounts to log onto the Internet, once on IRC they posed as 14 year old females. They went into channels that were pornographic, within no time they were bombarded with pornographic materials and information. This information of the results was release to the news media.

With all this information that’s available on the Internet how does a person find anything useful? One way is to use Search Engines, Search Engines are websites that catalogue Internet Sites so that you can find them easily. All you have to do is type in a keyword about the topic you’re searching for, press the search button in the web browser, then it’ll give you back the information you need. There are many search engines out there like Yahoo, then there is Webcrawler, Altavista, Excite, Magellan, Inktomi, Lycos. One of the major problems with the search engines that are available is there is no way to filter the content of what you are searching for. For example if your looking for information about “ dogs” your going to get something like over 10, 000 hits. (A hit is where the information pops up in a web page) and you were just looking for some free medical information about dog care. You could imagine just what a person would turn up about a subject like “ breast cancer.” Also the information on the Net changes so quickly that the search

engines do not update their databases fast enough, so the links to the pages quickly become useless information or dead links.

Too much public data at the hands of people that will abuse it and Internet addictions are two of

the major problems that this new information super highway has brought to the world. The Internet has many public web sites out there that you could obtain public information. Example there is [www. PublicData. Com](http://www.PublicData.Com) this site will give you access to all the drivers' licenses numbers for all the drivers in Texas, and also licenses plate numbers. In its databases, all you have to do is just type in the name of the person you are wanting to find, and it will give you all the people with the same name. Once you pick the person that you are looking for, it gives you all the information that's on their driver's license. Along with that information there is also a place that you can click on that will give all the persons that are living at that address. So a person just looking up a husband would obtain all the data on the wife and children that are also at that home. Along with drivers license, Texas License Plates are also in the database. So you could look up any owner of any car that's registered in Texas. Once you have found the owner's name, all you have to do is put that information back into the search and find out just where those person lives. This information in the wrong hands could be deadly.

Internet addictions are starting to become a more common thing today, this is where a person spends too much time on the Internet. This is mostly related to college students, the students stay up very late at night and are unable to make it to class the next day. The University of Texas has a group

meeting for students for fighting their new addictions. There are predictions that this will become a bigger problem as the Internet grows even larger, and connection speeds increase.

How does the end user at home get connected to the Internet? There are many ways to be connected. These range from large, fairly expensive solutions that are appropriate for large corporations or universities to relatively low-cost solutions that are appropriate for very small businesses of home use. No matter what level of service: from expensive dedicated Internet connections, to inexpensive dial-up connections for home users. Hooking onto the Internet is easier than ever, depending on where you live there most likely a local Internet provider near you. Every major city has at least a hand full.. With so many local providers and the problems with those, lots of people have gone to larger nation wide providers. Some of the major providers that are nation wide are Comp-U-Serv, America on Line (AOL) and Microsoft Network. This is good if you travel a lot, because no matter where you are, you can always be connected. With the explosion of users on the Internet, providers have not been able to keep up with the demand. America on Line was sued by the state of New York, due to the user complaints of not being able to connect. Basically AOL just had too many users and did not have the computer equipment to back it up and the modems and phone lines to support all the new users. With some many users connected to the Internet, it's causing the general speed of the Internet to crawl, but there hope of faster speeds in the near future. The technology exists today for the cable TV providers to also provide high speed Internet service. This new

cable modem Internet service would be up to 200 times faster than the fastest phone modem, at about the same cost.

The Age of the Internet has arrived. Traffic on the Internet expands at a 341,634% annual growth rate.

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.