ARPANET - What made the internet as we know it today

Today, almost anyone can send a message from one computer to another with a few keystrokes. Information has never been easier to share with other people than ever before. The internet is used to improve research, increase communication and socialize over computers.

This has not always been the case and not until 1969 was the first machine connected to ARPANET (Advanced Research Projects Agency Network) which is the cornerstone of the internet as we know it today. This network invented and used two foundations in the modern internet called Packet switching and TCP / IP protocol.

Like most inventions, it is a motivation that started the invention of such a system. This motivation came from the Americans after the Soviet Union launched the world's first satellite Sputnik 1 in October 1957. The fear this gave over the United States led to its president Dwight D. Eisenhowe approved and created the department ARPA (Today called DARPA and stands for Defense Advanced Research Projects Agency) under the U.S. military.

This department was to be dedicated to military research to be on the same and better level than the Soviet Union when it came to military technology. Among these, computers fell as one of the fields to be researched. Computers have been in use by the US government since 1939 for mathematical calculations, but have not yet been able to talk to each other.

In 1961, scientist and engineer Leonard Kleinrock, a professor at UCLA, published a paper on Package Switching. In short, this paper was about how a machine can send larger files and programs in smaller fixed data packets that can use many routes to reach the correct end destination. This opened up the possibility of sending larger amounts of data more securely and faster than before.

At the same time, computer scientist and engineer J. C. R. Licklider worked at ARPA and wrote the first paper that computers can be used as communication devices. Along with this research in 1963, he conducted and sent several letters to acquaintances and members of the intergalactic computer network. In these letters, Licklider came up with a proposal to create a computer network that can share information and research.

During this time, the American state had a great fear, and there was nuclear war. They showed, if there was to be a nuclear war, that they needed a communication system that had to withstand such an attack. One of the decisions that was made was that this system should be able to operate even if one or more points were to be taken out in such a match. All work to develop this system has been sent out to various universities across the states.

The researchers concluded that this communication system should follow a distributed system. This means that the host point in the system is connected to two other points. As a result of this design, one can lose multiple points without losing the ability to communicate with remaining points. It was also decided that each computer in a local area should be connected to a main computer called an IMP (Interface Message Processor), which in turn should be able to talk to other IMPs in the system.

ARPA sent out a tender for who will do the job of installation and landed on Bolt, Beranek and Newman Inc. as the chief company in this assignment. The first IMP was installed during 1969 at the University of California due to. influence of Kleinrock. Here, the first computer was connected to IMP, which became the first turning point in data history because the first connection of two machines to ARPANET has now been completed. The second location that received an IMP was the Stanford Research Institute and on October 29, 1969, the first message was sent between two computers. The first message should be ‘LOG’, due to a crash of the system only the letters ‘LO’ appeared and the world's first message was sent over two computers.

Although this was an unfortunate start, this was groundbreaking on the basis that now you officially have a way to communicate with several computers. In the coming years after 1969, several nodes on this system appeared. First several universities and research institutes on the west coast and later more from the east coast around New York. Soon after, more and more places came in from different places scattered around the United States. Around July 1970, there were as many as 20 nodes connected with different universities spread across the states.

What has now become a new age of communication was the first email sent out by Ray Tomlinson in 1971. Shortly afterwards, ARPANET got its first international connections, which were Norway and England. Since these countries are located across the Atlantic, it was not possible to connect them with ordinary telephone cables used until now. So the invention of

SATNET (Atlantic Packet Satellite Network) which became an integrated solution of ASRPANET.

While things were moving fast, other networking solutions such as CS NET, MILNET and NSFNET came to name a few. NSFNET became the first network to allow users outside a university background to use the network. With a solid basic structure of the network, several people used other solutions such as NSFNET, which eventually led to ARPANET being closed down in 1990.

After this time, the rest of the world has started using other networks that reach what we call the internet. Shortly afterwards, the invention of the World Wide Web came along with HTML, which became the first graphical solution for surfing the Internet.