1. History of The Internet [The evolution]

Before discussing the history of the internet, it is vital to understand what the internet is and what it represents in today’s standards.

The internet, put in simple terms is a network of networks. The size of the internet as well as what the internet offers depends purely on the networks that make it up. from this, it is possible to infer that the internet is not controlled by a single entity and that it can’t be controlled by a single entity.

Going to the actual invention or birthdate of the internet, no one can pinpoint the date where it occurred and it can only be considered as a continuous change that brought about the end result.

The internet was the work of dozens of pioneering scientists, programmers and engineers who contributed various features and technologies to create the internet. Many scientists anticipated the existence of a worldwide network of information exchange long before the internet actually existed.

Still, the first practical schematics arrived in the early 1960’s and later on the creation of the ARPANET which can be considered as a monumental step that drove the internet to what it is today.

The history of the internet then, can only be studied through observing monumental developments that played a major role in its growth to what it is today.

1. The ARPANET (Advanced Research Projects Agency Network) and its creation

Even though many scientists had anticipated the existence of a worldwide network of information exchange, the first description of such a network that allowed for social interactions was written by J.C.R Licklider of MIT in August 1962. He described a Galactic Network Concept where he envisioned a globally interconnected set of computers through which everyone could quickly access data. And while at DARPA (Defense Advanced Research Projects Agency), which is an agency of the United Stated Department of Defense, he convinced his successors Ivan Sutherland, Bob Taylor and Lawrence G. Roberts, who was an MIT Researcher, the importance of such a network.

In 1964, Roberts would go on to create the first wide-area computer network ever built when he connected a TX-2 computer in Massachusetts to a Q-32 in California. The result was the realization that the time-shared computers could work well together. However, the line used to connect the two computers was a circuit switched telephone system that was inadequate for the job. At this point the work of Leonard Kleinrock of MIT on packet switching theory was confirmed to be superior to circuit switches.

Circuit switching is a system where each data unit knows not only it’s final destination but the specific path it must follow to reach its destination while packet switching is a system where each data unit just knows its final destination and the specific path followed by it is decided by routers. One of the main advantages of packet switching over circuit switching is that packet switching is suitable for handling bilateral traffic i.e. a transfer of data in both directions. While Kleinrock worked on his packet switching theory in 1961, other groups such as RAND (1965) and NPL (1967) had also worked on packet switching in parallel without any of the researchers knowing about the other’s work.

In late 1966 Roberts went to DARPA to develop the computer network and put together his plan for the “ARPANET” publishing it in 1967. In August 1968, after Roberts and the DARPA funded community had refined the overall structure and specification for the ARPANET. DARPA was looking for a company to build the packet switches called Interface Message Processors (IMP’s) that were vital for the ARPANET. Bolt Beranek and Newman (BBN) was given the contract.

1. Trans-Atlantic connections
2. NCP and TCP/IP
3. DNS
4. The world wide web