

Internetne tehnologije

Zgodovina Interneta

Žarko Čučej



Maribor, 2009.03.12

Abstract

The Internet has become such an integral part of our lives, with such powerful capabilities, that it is easy to forget that this technological marvel was created by the long, hard, dedicated efforts of human beings – folks who had a vision of what universal networking could become and worked to make it happen. The key people, projects, and organizations that helped create the Internet are described below in roughly chronological order.

Founders

The conceptual foundation for creation of the Internet was significantly developed by three individuals and a research conference, each of which changed the way we thought about technology by accurately predicting its future:

- Vannevar Bush wrote the first visionary description of the potential uses for information technology with his description of the "memex" automated library system.
- Norbert Wiener invented the field of Cybernetics, inspiring future researchers to focus on the use of technology to extend human capabilities.
- The 1956 Dartmouth Artificial Intelligence conference crystallized the concept that technology was improving at an exponential rate, and provided the first serious consideration of the consequences.
- Marshall McLuhan made the idea of a global village interconnected by an electronic nervous system part of our popular culture.

Concepts

The conceptual foundation for creation of the Internet was significantly developed by three individuals and a research conference, each of which changed the way we thought about technology by accurately predicting its future:

- Vannevar Bush wrote the first visionary description of the potential uses for information technology with his description of the "memex" automated library system.
- Norbert Wiener invented the field of Cybernetics, inspiring future researchers to focus on the use of technology to extend human capabilities.
- The 1956 Dartmouth Artificial Intelligence conference crystallized the concept that technology was improving at an exponential rate, and provided the first serious consideration of the consequences.
- Marshall McLuhan made the idea of a global village interconnected by an electronic nervous system part of our popular culture.

ARPA

- In 1957, the Soviet Union launched the first satellite, Sputnik I, triggering US President Dwight Eisenhower to create the ARPA agency to regain the technological lead in the arms race.

ARPA: Advanced Research Projects Agency

DARPA: Defense Advanced Research Projects Agency

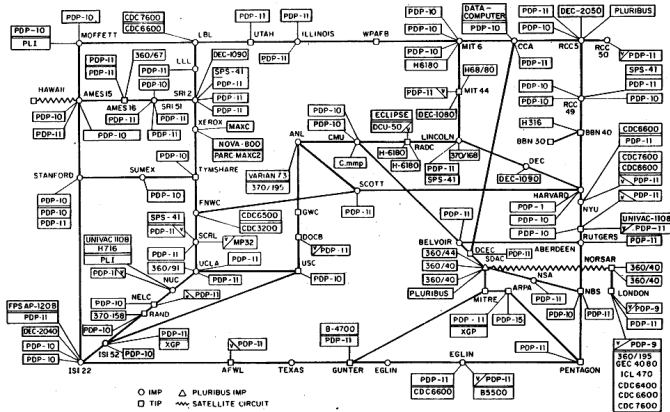
- ARPA appointed J.C.R. Licklider to head the new IPTO organization with a mandate to further the research of the SAGE program and help protect the US against a space-based nuclear attack.
- Licklider evangelized within the IPTO about the potential benefits of a country-wide communications network, influencing his successors to hire Lawrence Roberts to implement his vision.

ARPAnet

- Roberts led development of the network, based on the new idea of packet switching discovered by Paul Baran at RAND, and a few years later by Donald Davies at the UK National Physical Laboratory.
- A special computer called an Interface Message Processor (IMP) was developed to realize the design, and the ARPANET went live in early October, 1969.
- The first communications were between Leonard Kleinrock's research center at the University of California at Los Angeles, and Douglas Engelbart's center at the Stanford Research Institute.

ARPAnet

ARPANET LOGICAL MAP, MARCH 1977



{PLEASE NOTE THAT WHILE THIS MAP SHOWS THE MOST POPULATION OF THE NETWORK ACCORDING TO THE BEST INFORMATION OBTAINABLE, NO CLAIM CAN BE MADE FOR ITS ACCURACY}

NAMES SHOWN ARE IMP NAMES, NOT NECESSARILY HOST NAMES

Slika: ARPAnet logical map, status: march 1977.

First protocols ...

- The first networking protocol used on the ARPANET was the Network Control Program.
- In 1983, it was replaced with the TCP/IP protocol developed by Robert Kahn, Vinton Cerf, and others, which quickly became the most widely used network protocol in the world.
- In 1990, the ARPANET was retired and transferred to the NSFNET.
- The NSFNET was soon connected to the CSNET, which linked Universities around North America, and then to the EUnet, which connected research facilities in Europe.
- Thanks in part to the NSF's enlightened management, and fueled by the popularity of the web, the use of the Internet exploded after 1990, causing the US Government to transfer management to independent organizations starting in 1995.
- **And here we are.**