The Internet is a global network based on the Internet Protocol Suite (TCP/IP); its origins can be traced

back to 1965, when Ivan Sutherland, the head of the Information Processing Technology Office (IPTO)

at the Advanced Research Projects Agency (ARPA), encouraged Lawrence Roberts, who had worked

previously at MIT’s Lincoln Laboratories, to become the chief scientist at ISTO Technologies and to

initiate a networking project based on packet switching rather than circuit switching.

In the early 1960s Leonard Kleinrock at the University of California at Los Angeles (UCLA) developed

the theoretical foundations of packet networks and, in the early 1970s, for hierarchical routing in

packet-switching networks. Kleinrock published the first paper on packet-switching theory in 1961 and

the first book on the subject in 1964.

In August 1968 DARPA released a request for quotation (RFQ) for the development of packet

switches called interface message processors (IMPs). A group from Bolt Beranek and Newman (BBN)

won the contract. Several researchers and their teams including Robert Kahn from BBN, Lawrence

Roberts from DARPA, Howard Frank from Network Analysis Corporation, and Leonard Kleinrock

from UCLA, played a major role in the overall ARPANET architectural design. The idea of open architecture

networking was first introduced by Kahn in 1972, and his collaboration with Vint Cerf

from Stanford led to the design of TCP/IP. Three groups, one at Stanford, one at BBN, and one at

UCLA, won the DARPA contract to implement TCP/IP.

In 1969 BBN installed the first IMP at UCLA. The first two nodes the ARPANET interconnected

were the Network Measurement Center at UCLA’s School of Engineering and Applied Science and

SRI International in Menlo Park, California. Two more nodes were added at UC Santa Barbara and the

University of Utah. By the end of 1971 there were 15 sites interconnected by ARPANET.

Ethernet technology, developed by Bob Metcalfe at Xerox PARC in 1973, and other local area

network technologies, such as token-passing rings, allowed the personal computers and workstations

to be connected to the Internet in the 1980s. As the number of Internet hosts increased, it was no longer

feasible to have a single table of all hosts and their addresses. The Domain Name System (DNS) was

invented by Paul Mockapetris of USC/ISI. The DNS permitted a scalable distributed mechanism for

resolving hierarchical host names into an Internet address.

UC Berkeley, with support from DARPA, rewrote the TCP/IP code developed at BBN and incorporated

it into the Unix BSD system. In 1985 Dennis Jennings started the NSFNET program at NSF to

support the general research and academic communities.