Joseph Carl Robnett Licklider: developed the idea of a universal network while working at DARPA

He also was a big supporter of time-sharing vs. batch processing computers.

Robert Taylor: succeeded Licklider at DARPA Information Processing Techniques Office (IPTO)
What Did Licklider Want?

- The Department of Defense operated computers or computer-like equipment for many different functions:
  - Missiles and satellites, Strategic Air command
  - Battleship control systems
  - Army field operations

- Licklider wanted for all of them to be able to communicate with each other
More Internet Pioneers

L-R: Vint Cerf, Robert Kahn, Len Kleinrock, and Larry Roberts – Team members from Bolt, Beranek and Newman (BBN) and the Lincoln Labs at MIT and later at UCLA who created the first IMP and connected the first two nodes.
Key Innovations

- TCP/IP Routers and Packet Switches
- Local Area Networks (LANs)
- Fiber Optics (big Internet pipes)
- UNIX with TCP/IP kernel
- Integration of TCP/IP into all computers
- Hypertext Markup Language (HTML)
- Multimedia standards and protocols
Ethernet

- Developed by Robert Metcalfe and others at Xerox PARC in 1973-75
- Connects computers locally and allows them to connect to the Internet from one shared node
Pioneers of the Web: 1980

- Tim Berners-Lee
- Robert Caillou

HTML developed for scientists at the CERN complex in Geneva
The Rise of Microcomputers and Hacker Culture

- 1976 Apple I computer sold to computer hobbyists
- Paul Allen and Bill Gates create a BASIC language compiler for microcomputers
- 1981 IBM PC begins to compete in the microcomputer market
Good Questions in the Textbook

- How has the historical development of the Internet shaped its contemporary characteristics?
- Is TCP/IP a radical communication technology?
- How important is the do-it-yourself, or hacker, ethos for making sense of the Internet’s development?
- Assess the impact of the World Wide Web and the graphical browser on the diffusion of the Internet.