

CS144

An Introduction to Computer Networks

What the Internet is

A very brief history of networking
and the Internet



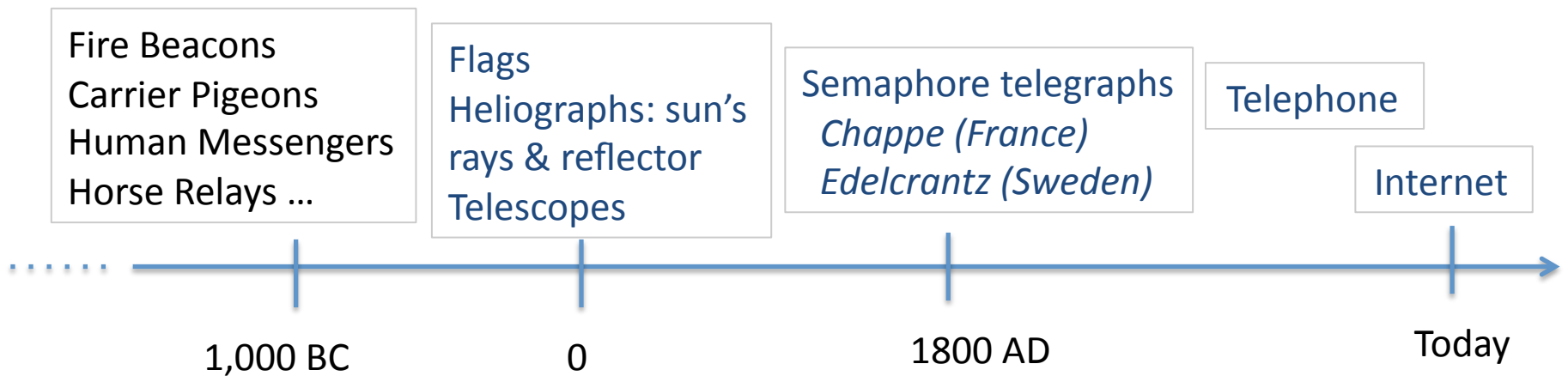
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Outline

Brief history of networking

Brief history of the Internet



The Telegraph

Four steps of invention

(2,000 BC) Systems to signal a small set of pre-defined messages, e.g. beacons.

(1600s) Systems to transmit arbitrary messages, e.g. by encoding the alphabet.

(1700s) Numeric codes for common words and phrases. “Compression”.

(1700s) Codes for control signals. “Protocols”.

Protocol Signals by 1800

1. Initialization
2. Error control: erase, resend.
3. Rate control: “faster/slower”.
4. Flow control: stop/wait, selective-repeat.

Telephone networks in 1900

1. (1897) Alexander Graeme Bell made the first telephone call

Outline

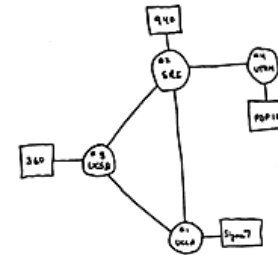
Brief history of Networking

Brief history of the Internet

Parallel beginnings



J.C.R. Licklider describes an Intergalactic Network connecting everyone on the globe.



Four nodes interconnected (UCLA, SRI, UCSB, Utah)



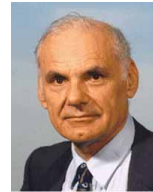
RAND (Paul Baran)
Packet switching for survivable networks.



MIT (Kleinrock) First paper on packet switching theory.



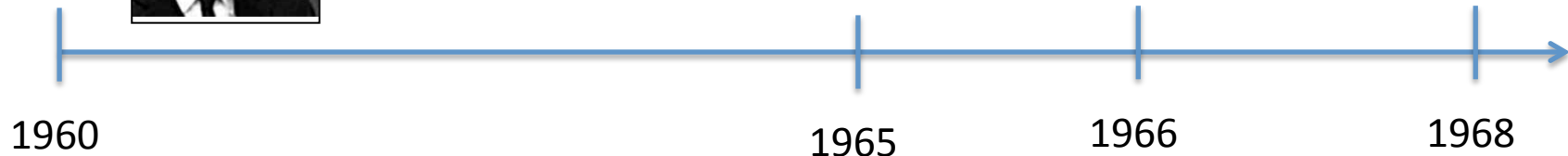
NPL, UK (Davies)
Packet network.

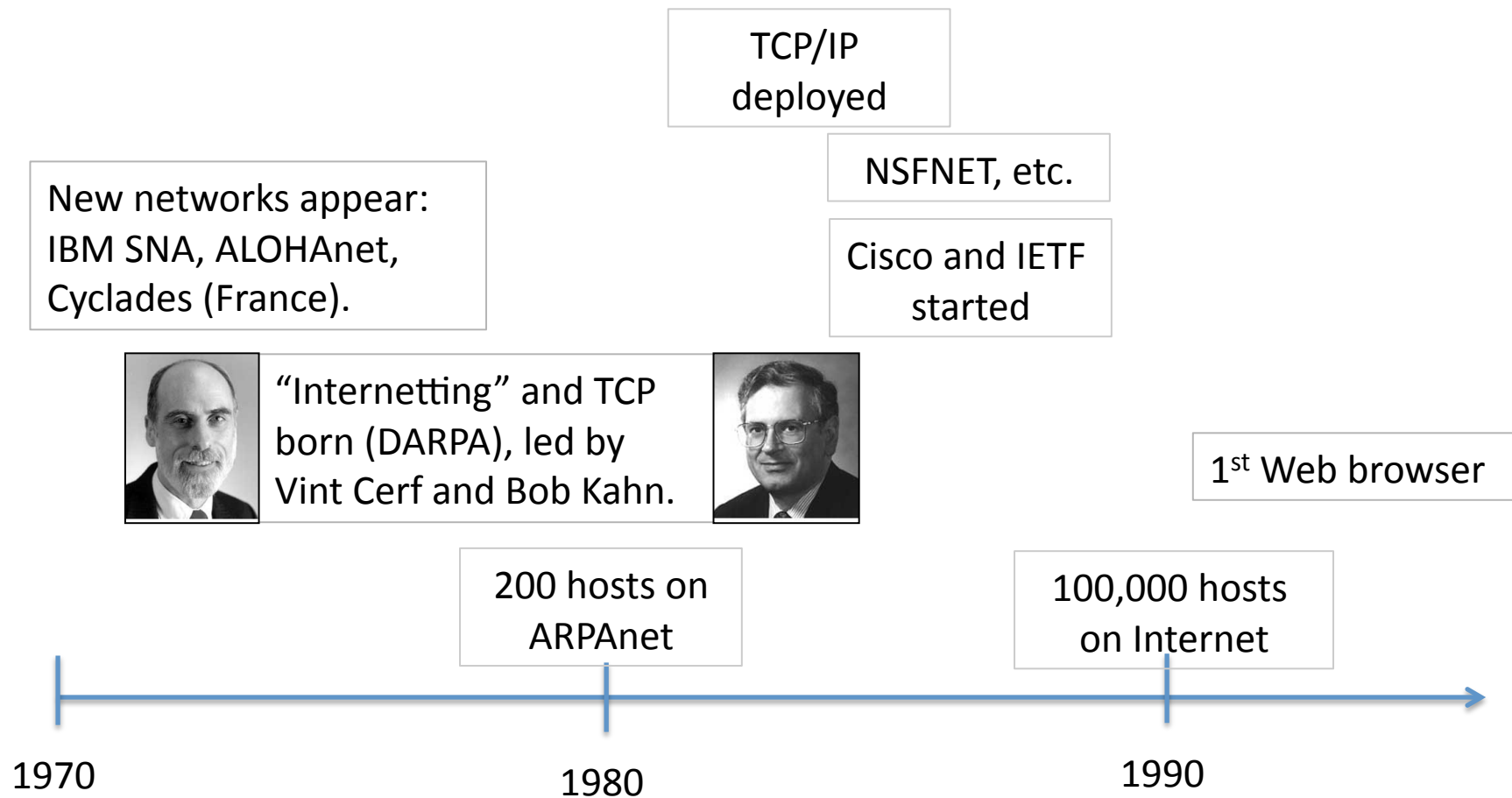


DARPA (Roberts)
plans for "ARPANET".

WAN connects two time-sharing computers

First "IMPs" (BBN).





Useful References

1. The Early History of Data Networks

G. J. Holzmann, B. Pehrson, IEEE Press 1994.

2. The Design Philosophy of the DARPA Internet Protocols.

D. Clark, ACM Sigcomm 1988

3. Brief History of the Internet

B. M. Leiner, V. Cerf, D. D. Clark et al.

<http://www.internetsociety.org/internet/internet-51/history-internet/brief-history-internet>

<The End>