**IC EX 5A: Assignment 5**

Read: http://spectrum.ieee.org/computing/networks/osi-the-internet-that-wasn't

Write a paragraph (or 2) that describes the circumstances of the July 1986 meeting on the OSI reference model that is pictured in the article. Consider the circumstances that existed in 1986 and whether this meeting was even worthwhile given the statuses of OSI and TCP/IP at that time. Include a citation for the article and you may include other citations if you wish to.

*The circumstances of the July 1986 meeting on the OSI reference model was in the midst of a bitter rivalry, formed by a decade of years before. In the 1970s, the INWG met regularly and exchanged technical papers in an effort to reconcile its designs for datagram networks. After several years of debate and discussion, the group finally reached an agreement in 1975, and Cerf and Pouzin submitted their protocol to the international body responsible for overseeing telecommunication standards, the International Telegraph and Telephone Consultative Committee (known by its French acronym, CCITT).* *The committee rejected the INWG’s proposal as too risky and untested. Cerf and his colleagues were bitterly disappointed. When Pouzin complained at major conferences about the “arm-twisting” tactics of “national monopolies,” everyone knew he was referring to the French telecom authority. French bureaucrats did not appreciate their country­man’s candor, and government funding was drained from Cyclades between 1975 and 1978, when Pouzin’s involvement also ended. Cerf was also so discouraged by his international adventures in standards making that he resigned his position as INWG chair in late 1975. He also quit the faculty at Stanford and accepted an offer to work with Bob Kahn at ARPA. Cerf and Kahn had already drawn on Pouzin’s datagram design and published the details of their “transmission control program” the previous year in the IEEE Transactions on Communications. That provided the technical foundation of the “Internet,” a term adopted later to refer to a network of networks that utilized ARPA’s TCP/IP* (Russell, 2013)*.*

*In 1977, the British computer industry proposed the creation of a new standards committee within the International Organization for Standardization (ISO). The British proposal, called for “network standards needed for open working” to provide an alternative to traditional computing’s “self-contained, ‘closed’ systems.” The concept was as much strategic as it was technical, signaling their desire to enable competition with the big incumbents—namely, IBM and the telecom monopolies. As expected, ISO approved the British request and named the U.S. database ­expert Charles Bachman as committee chairman. Bachman’s design departed from IBM’s Systems Network Architecture in a significant way: Where IBM specified a terminal-to-­computer architecture, Bachman would connect computers to one another, as peers. That made it extremely attractive to companies like General Motors, a leading proponent of OSI in the 1980s. The layered OSI reference model also provided an important organizational feature: modularity, which the layering allowed committees to subdivide the work* (Russell, 2013)*.*

*This uneasy alliance of computer and telecom engineers published the OSI reference model as an international standard in 1984. Individual OSI standards for transport protocols, electronic mail, electronic directories, network management, and many other functions soon followed. OSI began to accumulate the trappings of inevitability. Leading computer companies such as Digital Equipment Corp., Honeywell, and IBM were by then heavily invested in OSI, as was the European Economic Community and national governments throughout Europe, North America, and Asia. Even the U.S. government—the main sponsor of the Internet protocols, which were incompatible with OSI—jumped on the OSI bandwagon. The Defense Department officially embraced the conclusions of a 1985 National Research Council recommendation to transition away from TCP/IP and toward OSI. Meanwhile, the Department of Commerce issued a mandate in 1988 that the OSI standard be used in all computers purchased by U.S. government agencies ­after August 1990* (Russell, 2013)*.*

*Then, on 1 January 1983, ARPA stopped supporting the ­ARPANET host protocol, thus forcing its contractors to adopt TCP/IP if they wanted to stay connected; that date became known as the “birth of the Internet.” And so, while many users still expected OSI to become the future solution to global network interconnection, growing numbers began using TCP/IP to meet the practical near-term pressures for interoperability* (Russell, 2013)*.*

*By the late 1980s, frustration with OSI’s slow development had reached a boiling point. At a 1989 meeting in Europe, the OSI advocate Brian Carpenter gave a talk titled “Is OSI Too Late?” It was, he recalled in a recent memoir, “the only time in my life” that he “got a standing ovation in a technical conference* (Russell, 2013)*.”*

*This meeting was worthwhile given the statuses of OSI and TCP/IP at that time.*

# References

Russell, A. L. (2013, Jul 30). *OSI. The Internet That Wasn’t.* Retrieved from IEEE Spectrum Technology, Engineering, and Science News: http://spectrum.ieee.org/computing/networks/osi-the-internet-that-wasnt