Some Reflections on Early History

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Abstract

The ideas and developments reviewed briefly are mainly from six sources: (1) the M.I.T. Lincoln Laboratory during the middle and late 1950s, (2) Bolt Beranek and Newman in 1957-1962, (3) the ARPA program in 1962-1964, (4) IBM Research in 1964-1966, (5) Ivan Sutherland's lab at Harvard in 1967, and (6) Project MAC at M.I.T. in 1968-1972.

For instance, there were (1) cloud filter stations with light guns and light pens, (2) a single 1024x1024 scope display time-shared four ways and a workstation for studying technical documents, (3) Rand tablets, Teagher tables, and Bernstein's horizontal text-editing display onto which both the human editor and the computer editor could write (and understand each other), (4) a computer system especially for computer-based education and a powerful vector graphics display system, (5) a PDP-1-based, single-user workstation with four display screens, a paper tape unit, a magnetic tape unit, a printer, and the beginnings of Sutherland's virtual space displays, and (6) graphics over the ARPANET and a multi-window workstation based on the Evans and Sutherland LDS-1.

One of the key insights to be offered explains why workstations have vertical instead of horizontal (desk-like) display surfaces. Part of the plot is that, when, in the 50s or 60s, a cathode-ray tube was mounted face-up, some of the phosphor fell down onto the electron gun and caused a short circuit. Another part is that Fredkin and DEC simply got mixed up about which way the PDP-1 display ought to swivel.