Study of Requirements of Highly Interactive 
Typewriter Communication with a Multi Access Computer

J. B. Dennis

Our present MAC terminals (Teletype 35 and IBM 1050) do not have the characteristics needed for the highly interactive typewriter dialogs that will become possible with future MAC systems. Three factors enter into this situation.

1) Features of the terminal devices.
2) Signaling conventions used for transmission.
3) Characteristics of the computer interface.

We propose a study of highly interactive man/machine communication through typewriter terminals with the following objectives:

1) To determine whether signaling techniques possible under existing communications tariffs are adequate, and to determine suitable signaling specifications if those available are inadequate.
2) To determine appropriate specifications for the computer interface so that highly interactive communication is possible.
3) To study characteristics of typewriter terminal devices to determine what features are desirable for interactive communication with a MAC system.

An experimental study including on-line use of a terminal and a computer connection that can be modified readily as ideas evolve, is needed for several reasons.

1) The necessity for a new tariff is probably best shown through demonstration.
2) The choice of console features is dependent on psychological factors that are difficult to evaluate otherwise.
3) It is the only practical way of being sure that a set of specifications is correct and truly adequate.

An IBM Selectric input/output typewriter is suggested for the study because of the ease of connecting it to electronic logic, the availability of a character set reasonably consistent with the MAC system and the PPP-1 typeface, and the convenience of its size, visibility of typescript, etc. Further, the use of the Selectric will provide and opportunity to evaluate the reliability of the “golf ball” mechanism in the more trying service of quick request and response.

The Selectric would be used in two situations:

1) Connected to the time shared PDP-1 in building 26.
2) Connected to the MAC system via the 7750.

The PDP-1 connection would permit working with a quickly reacting computer and using a communication channel completely under our control for experimenting with signaling techniques. The MAC connection would help answer questions of multiplexing interface logic and the special problems of a large time-shared computer. Both connections would be made
through a telephone pair, either using standard data sets, or special hardware if necessary.