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 tarrifs 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 typewrite 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 PFP-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.