

January 13, 1970

Memo to: Dr. L.C. Foster

From: J. P. Lindley

Subject: Data Processing Terminal

It is widely predicted that the data processing field will be the most rapidly expanding segment of the electronics industry in the next decade. As mentioned by Jim Brush, one area in which Zenith has competence is that of display devices. It seems that several markets exist for a unit to interface between the telephone and a television set. Even a simple device with no grey scale and only black and white capability would have wide application.

As you suggested, this memory could be used for a facsimile transmission device. Another application would be as a time-shared data terminal. The currently available terminals are leased on mechanical typewriters and use about 200 Hz bandwidth. The extension to standard telephone bandwidths of 3 to 5 kHz would increase the data rates by over ten times.

The equipment necessary for time-share computer use would be as follows. A logic device would be necessary to convert from the ASCII (teletype) code to a binary character display suitable for television use. This would also determine the position of the character upon the television screen. The characters would be placed into a memory in the order in which they were received along with the line spacing and carriage return information.

The memory would contain the information for one frame. The binary representation of the characters would have been inserted in the proper location. The size of the memory necessary for a data terminal could be considerably smaller than that for other uses. The display of thirty lines, 70 characters long would be sufficient for most uses, particularly if a method of indexing the desired portion of a long document were available. The design of the characters would use 10 lines in the vertical direction giving a 10 by 7 bit character. This is approximately 150,000 bits, and would display about 1/2 of a 8-1/2 x 11 teletype page. For special purpose, large character displays, even less storage would be necessary.

A related product would be a magnet tape recorder to replace the punched paper tape presently used as an input and output on a teletype. The punched tape is extremely inconvenient to store and use. Since the paper tape is usually used for dead storage and is played infrequently, present audio quality tape in cassetts would probably be adequate.

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This product would be the stepping stone to a facsimile device and could be used as an intermediate use for a high priced but lower storage capability memory. This system should be contrasted to the type read out which uses a special purpose storage tube which prints characters directly. The ancillary equipment is relatively inexpensive but the tube is costly. This proposed system would use a low priced television set but the memory would be necessary. The advantage is that it would be compatible with a conventional home TV set and eventually could be adapted to a consumer data terminal.

*Jack*  
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cc Jim Brush