IBM HARRISON
April 2, 1970

Memorandum to: Mr. S. W. Dunwell

Subject: Bear Mountain Meeting

I am looking forward to the Bear Mountain Meeting with IBM Fellows because I would like to think that they are sufficiently objective to make a constructive analysis of the problems that you and some of the rest of us are worried about.

To continue our success in the data processing field I feel that we must do significant innovation in addition to the present exploitation mode of engineering in IBM. We must:

(1) anticipate the end of the line on cost performance enhancement derived from the application of higher speed components; with the next iteration we will finally begin to see the law of diminishing returns from this particular engineering approach.

(2) anticipate the need for greater efficiency in the usage of the mass of hardware in an installation of data processing equipment. With the present system design, too much hardware stands idle too much of the time.

(3) anticipate the need to be realistic about the need for Customer Engineer considerations in systems design.

(4) anticipate new dimensions in teleprocessing as a means for increasing the overall efficiency of customer's operations. The communications world, based on narrow band audio frequency techniques, is finally being upset. Broad band techniques will change the teleprocessing climate completely.

(5) anticipate broader and more effective communications between people and machine systems. Is the deficiency in terminals a technical problem or lack of creative management? Why can't we make the progress that is so obviously needed in enhancing an APL type of language?

(6) anticipate the need for a memory technology that is really suitable for the long term and broad usage in processing systems. Too much of the present systems is involved in accommodating awkward hierarchies which happen to be available at the moment.

(7) anticipate the extension of the present systems using single large data bases to systems with many geographically and organizationally distributed large data bases. This involves practical information retrieval techniques and a hard look at suitable file hardware.

(8) anticipate the need for manufacturing economies. Although the relationship between manufacturing costs and volume production is a transcendental equation, it is clear that engineering for future systems should be based on a new level of standardization for manufacturing efficiency.

These and other similar features will characterize the successful data processing after the present 360-NS period. It is important that attention be drawn to the fact that these are the real Research and Engineering challenges. Somehow we must counteract the increasing trend toward exclusive emphasis in IBM on production engineering extensions of products that will not provide the basis for meeting future needs. We must be sure that we do not settle back into the complacent atmosphere that locked us blindly to the punched card system when better techniques were obvious to others.

R. L. Palmer

RLP:S

CCS:
Mr. T. V. Learson
Dr. E. R. Piore