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PROJECT MAC

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To: E. Fredkin
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From: J. H. Saltzer

Date: September 27, 1973

Subject: Progress in negotiations for a large memory system for Multics

This note is to report recent activity and the current status of my discussions with Bob Scott concerning our proposal to expand the M.I.T. Multics configuration to 8 million words of memory, to support Automatic Programming and related work.

In review, in late April, 1973, I prepared an RFP for a large memory system, and we (Scott, Daley, Corbató, and Saltzer) met with Honeywell technical and marketing representatives to discuss the RFP. Honeywell indicated at that time that it wished to respond. The proposal apparently invoked both technical and marketing decisions at several levels which required a larger settling time than anticipated, and the response was not received until mid-July. When I reviewed the details in August, it appeared on the surface that the technical plan (e.g., performance, reliability, maintainability) was responsive though unsupported by precise specifications. On Tuesday, September 26, more detailed technical specifications were described orally by R. Montee (of HISI Phoenix Engineering) and these continue to appear to be responsive, although a few facts are still missing.

The proposal for price, on the other hand, was far out of line with what we had been hoping: to a first approximation, the price quoted was 6¢ per bit for the first 2 million words, and 1.5¢ per bit thereafter. This price quotation compares with IBM's 3¢ per bit on the 370/168, the Ampex price of 1.5¢ per bit for the recent 256K word addition to the MathLab PDP-10, and rumored current quotations for 0.9¢ per bit for some suppliers for 12 month delivery. The HISI 1.5¢ per bit quotation would actually be plausible, if it applied to all memory, since it would be supported by the manufacturer of the rest of the system. The "surcharge" involved in pricing at 6¢ per bit for the first 2 million words is on the order of $3 million, a quite noticeable figure.

It is clear that this pricing proposal is out of line with the marketplace, and thus there is no way to justify requesting the funds for it from any of our normal support routes. For this reason, we are initiating two activities, in parallel:

1) To return to HISI, within the week, at the highest possible corporate level, a reply which says that the technical response is acceptable but the pricing response is not; to point out the competitive market situation, and request a rapid new pricing response. We propose to suggest several alternative ways of arranging this response, some of which would not undercut pricing strategies for other customers.

2) To send the original RFP immediately to a list of nine independent LSI memory vendors, requesting an immediate (2 week) indication of whether or not each is interested in preparing a formal reply, and if so, what approximate ball park of price would be involved.

Both of these activities are intended to produce, within two or three weeks, a clear indication of whether or not it is feasible to continue trying to make Multics the vehicle for a large memory system, as compared with the alternative of beginning to upgrade the memory of one of the Project MAC PDP-10's toward its 4 million word limit.

As should be apparent from the schedule proposed, the necessity for rapid action has been clearly recognized.

In a closely related matter, Bob Scott indicated that I.P.C. is not satisfied with current Multics performance, and intends to begin holding HISI responsible for not meeting reasonable system performance specifications. Along this line, he suggested that Project MAC submit to I.P.C. a specification of what response time characteristics it is willing to consider acceptable, so that meters can be installed to help in enforcing a policy of guaranteeing acceptable interactive responses.

Jerry