Dear Saul:

        We have been giving a good deal of thought and attention
to the issues raised by your proposal to augment your 10 at Rutgers.
This response has been discussed with Ed Feigenbaum and Elliot Levinthal
as well as with Tom; but I felt we should not carry it beyond our own
two groups without further consultation with you.

        Briefly, there are two main reasons why I do not think that we
should recommend the use of the SUMEX-AIM grant as a vehicle for this
purpose.
1) I believe that this pattern of extension of the SUMEX-
AIM system is a significant departure from the charter that was author-
ized by the RR Council -- involving as it does not only a significant
capital investment, but an INEVITABLE commitment for further operational
support in the future
and   2) serious technical and especially MANAGERIAL problems
of supporting two distant systems in a way that would really accomplish
the backup goals that are the rationale in the present proposal.

        In the light of our extensive experience with efforts to sustain
day to day compatibility with IMSSS and with other network TENEXes, our
staff is unanimous that only an authoritative single management of the
two facilities would make it actually work to those goals. I am sure
that you would be as loathe to delegate such responsibility as we would
be to assume it: at its best, and even with "full authority", it would
be a managerial nightmare.

        We do have an alternative proposal that would answer the
technical issues of 2). And as for 1), we would all offer you the
strongest support in defense of a project proposal from you before the
appropriate study section and Council. And we can transmit as much
more detail as you wish about the technical problems -- the simplest
would be for you to talk to Tom and Rainer.

        The alternative option that we have in mind would be an augmen-
tation of your system with the aim of giving the SUMEX-AIM community
access to TOPS-10 as a complement to TENEX.
        This would greatly benefit SUMEX-AIM users who are having
difficulties in adapting their programs to TENEX: We believe many of these
problems will eventually be solved, but some perhaps only at unreasonable ex-
pense compared to just having time available on a TOPS-10 machine. Also the
conversions would be very much facilitated if we could examine the running
code as it was IN FACT being executed under TOPS-10.

        In our opinion, this widening of options to SUMEX-AIM users would be
of greater benefit as a return for augmenting your system, than would be
the exact duplication of SUMEX-tenex. With efficient communication between
our two systems, there may even be occasions when users would run program
segments alternately under TENEX and under TOPS-10 in accordance with the
availability of the appropriate software.In fact there are a number of
very interesting experiments on inter-system coordination and coopera-
tion that would be advanced by this complementarity, and will be of ut-
most importance in the future development of computer networking and
the concept of division of labor among functionally specialized centers.
t, the *Firmal economic preparation on Sumex-aim development*
fractionation of capital investment-- and commitment to the
 future costs that will follow with it -- are not the most

cost effective use of available funds. (For example, in a year or two, when
we are more heavily loaded, the upgrading of the KI to a KL processor can
probably give us a 2 or 3X increase in thruput at relatively little cost. We
are at a point on the investment-yield curve (taking staffing also into
account) where it makes little sense to distribute the investment into frag-
ments.

        We can sympathize that one motive for local augmentation may be
the still imperfect state of communications across the country compared
to the local phone call. We think this is subject to continued improvement
and certainly will support any reasonable steps to make working on the
system more comfortable for you and your colleagues.

Josh
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