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INFORMATION PROCESSING SERVICES
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J. H. SALTZER

28 April 1975

Prof. J. H. Saltzer
NE43-505

Dear Jerry,

Thank you for your letter of April 1, 1975, relating to the issue of defining just what fraction of the Multics service is consumed by paying customers.

Wes Burner, Bob Daley, and I have discussed this issue a large number of times over the last few years. The problem, as we see it, boils down to defining just how much of the system could possibly be sold in the best of all possible circumstances. I understand--and agree with--your calculation of the percentage of the CPU hours available that can be assigned to revenue use, non-revenue use, and unused capacity. My own feeling about the capacity of the system is summarized in the following table which assumes 20 hour-a-day operation of a 2 CPU system during an average 30.4-day month.

<u>Shift</u>	<u>CPU Hours Available</u>	<u>Maximum % Salable</u>	<u>Net Hours Salable</u>
T1	390	85%	332
T2	260	65%	169
T3	304	20%	61
T4	<u>262</u>	<u>35%</u>	<u>92</u>
Totals	1,216	54%	654

As you can see, I come out with 54% utilization as a "full" machine, which is not very different from your estimate of 60%. Several of my colleagues feel that the maximum salable percentages are unrealistically high. This estimate, together with data similar to that you present in your letter, led me to the conclusion that the

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paying user capacity of the system could be approximately tripled, at best. To be on the conservative side, my general statement has been "between doubled and tripled".

I think that it is clear that the best way for us to proceed is to follow our plan to reduce the rates by 50% with the goal of doubling the usage. When this goal has been achieved, we can recalculate our estimates of how much capacity is, in fact, left, as we will then have a better idea of our ability to push usage from the first shift into the second, third, and fourth shifts.

However, I am very concerned that we be cautious in all of these maneuvers not to replace the problem of having a very underutilized system with the problem of having users storming my office because they cannot log in or because the response time is poor. In any event, our first 50% step clearly is a major move in the right direction.

Thank you for having taken the time to outline these facts. I appreciate your interest and help.

Sincerely,



Robert H. Scott
Director

RHS:ssw

cc: W. J. Burner
F. J. Corbató
R. C. Daley
M. L. Dertouzos