MASSACHUSETTS INSTITUTE OF TECHNOLOGY
PROJECT MAC

TO: Malcolm Jones

FROM: F. J. Corbató

DATE: November 10, 1967

   This memo is an addendum to my memo of October 30 concerning a reduced GE 645 system. In that memo, a system with a rent of $89K per month was described. If Project MAC is anxious to achieve further economy and yet maintain rapid checkout of the Initial Multics System, then the following remarks are also in order:

1. There should be only two system controllers instead of four. Each controller should have 128K of 1 microsecond memory.

2. The second disk file should be delayed until the Project MAC Multics System has customers to pay for it.

3. Until after Initial Multics, the tape drives should remain as they are currently installed, namely, eight 7-track drives. This is two less tapes than the projected ten.

4. The above three changes allow the following savings:

Disk saving	4.1K
2 Tapes saving	1.6K
Memory savings	4.7K
	10.4K
+ 5% price rise	.5K
	10.9K
- 20% educ. disc	- 2.2K
	8.7K

Estimated total installation cost per month = 89.0K - 8.7K = $80.3K

5. In order to minimize the time to get to Initial Multics, the
    simplex installation of about $80K/month rent should be realized
    with the presently installed phase A hardware. The installation
    of phase B hardware should not occur before Initial Multics is
    achieved since there is probably a several week shakedown of the
    new equipment until the reliability reaches that of the already
    installed equipment. Premature installation would almost
    certainly delay the reaching of Initial Multics since the con-
    fusion of the phase B system malfunctioning would probably dis-
    tract both those responsible for hardware maintenance and those
    doing software development.

6. When the switch to phase B hardware occurs, it should be on a
    system basis not a piecemeal one. In particular, the system
    should be pretested in Syracuse with an Initial Multics System
    such that reproducible results can be obtained. After shipment
    and reinstallation it should be re-tested in Cambridge before
    the phase A hardware is removed. It should be noted that core
    memory capacity and the fire hose drum may be critical issues
    in this plan.

FJC:scm

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