

CLOSE

In this paper we have considered, in skeleton form, all the aspects of a high-power computer-controlled editing system. The emphasis has been on a point of view: the necessity for a broad program base permitting the creation of luxuriant features for the user.

Other designers might well proceed differently, especially as concerns the text and relational filing capabilities of the system ~~xxx~~ (POIGNANT).

The POIGNANT structure is not strictly essential if various limitations are introduced in the system-- for instance, ~~xxx~~ the labelling of shots with only four letters or numbers, the elimination or sharp restriction of comments, and so on. But this paper is intended to describe a high-capability system, not shortcuts.

The same issues affect the choice of computer. Almost any computer could do the job if text display were not necessary. Even with this addition, the possibilities are broad. Basically what is needed is a "small" computer with a display system, a good interrupt system, and mass memory. Additional switching gear must be interfaced by digital engineers. This interface requirement reduces the field somewhat, since more ~~exp~~ experience is available for some manufacturers than others.

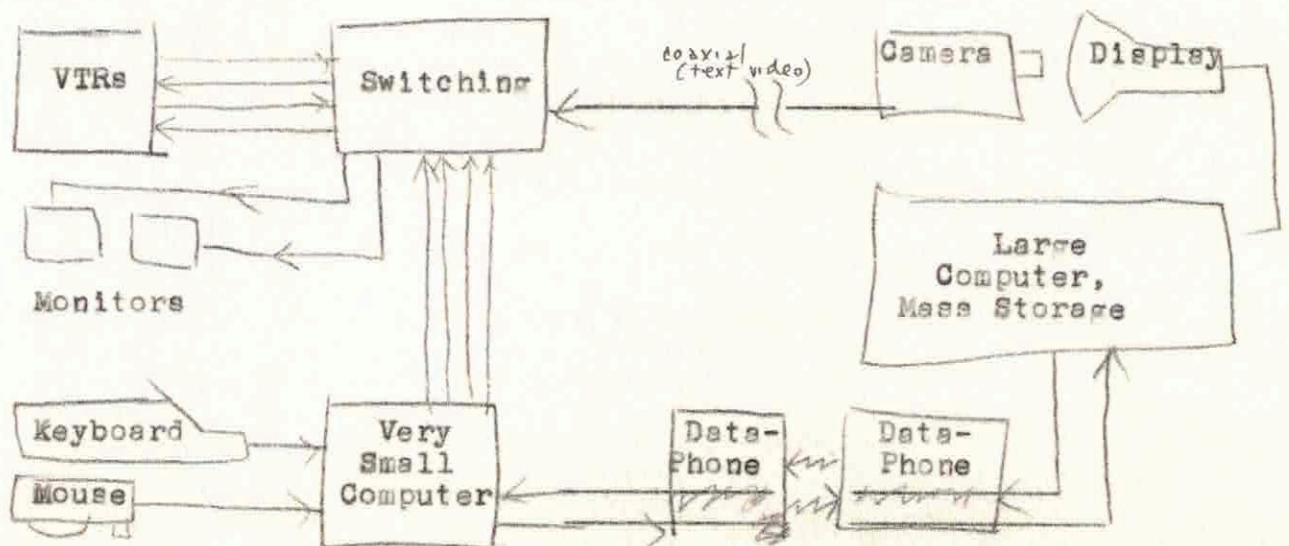
Present favorites for this application are computers from Digital Equipment Corporation and Scientific Data Systems. This decision depends on ~~xxxx~~ design strategy, interface details, and what else becomes available.

Involved in these choices are such questions as the ~~xxxxxxx~~ elegance of text and drawing features desired. Dividing the task among two computers might have merit.

Perhaps the crucial aspect in choosing a computer, however, is the plan for expansion. It need scarcely be mentioned that ~~xx~~ this system may be extended to motion pictures-- skipping the workprint and yielding an edgenumber list for the final cut-- so that it will presumably be of general value to the industry.

The system can be expanded in two ways: duplication, and a bigger computer.

If a number of remote users were tied to a big central system, three remote connections would have to be made to each editing studio, as shown in this diagram:



The bigger computer is preferable, for it reduces the cost of computing per user. At today's prices, the computer cost for a one-user system is about \$60,000; for a large system the hardware cost would be about \$35,000 per user~~xxx~~ (assuming ten users and a PDP-9/339/339/Burroughs disk). But it should be stressed that those are today's prices. Computer costs have fallen steadily for a decade and will continue to do so. Five years from now the prices should be one-half to one-quarter of these figures. (But the competitive advantage of beginning now should be obvious.)

In any case, the cost of hardware for the experimental prototype will be between \$60,000 and \$120,000, including the CRT display for texts but none of the video equipment or switching gear. The cost ~~xxx~~ of programming and overhead is in a similar range. Construction of a functioning system will take one to two years. A third year should be allowed as a cushion, since unexpected difficulties are not unknown in the computer field.

Cost of VTR engineering modifications cannot be estimated here. Presumably this engineering would not increase the time needed to create the overall system, since it can take place concurrently with basic programming phases.

This paper has explained various aspects of a design for a videotape control system: the switching and recopying of shots, the filing and retrieval techniques, and the organizational side. These are all possible now.