

move Taylor's programmed management from the workbench into the front office, at least into the offices of our middle managements, the vice presidents.

The rapid processing of vast volumes of information is making it more feasible for the men in the front office to make more of the decisions. The application of statistical and mathematical methods to decision making is developing so fast that most of us who got our education some years ago are having an awfully hard time keeping up. The impression I have of it is that this is an area of decision making that is far more effectively applied to the production process than it has been to other phases of management.

The technique of simulation is one that the front office, I think, is better able to understand in most cases than some of the other procedures. But it is too early, I submit, to say what the basic effect of this is going to have on the structure of organizations and on the basic theories of management. Let us just say that there is a catalyst at work here that is going to change a lot of things. What the precise contours of the change will be I think we must defer for a few more years before trying to foresee precisely.

The fifth and last of these expressions of the technological revolution that is underway is in some respects perhaps the most important, namely, our ability to produce more with fewer man-hours. We have learned to automate our machines with electronic controls, with feedback, and with self-adjusting mechanisms that are making them effective production units with very few men indeed.

Just 3 weeks ago I took a field trip as a board member of a company that is building a new hydraulic installation on the Roanoke River in Virginia, which will develop 540,000 kilowatts when it is finally finished. There are two dams. On the down-river dam there is just one man who has a house up on a hill and he is available if something goes wrong. The major installation is going to have a good many more people than that, maybe 25 or 30, but the unit will be controlled on an interconnecting computer that will control the power production in the whole system. This is located in Dayton, Ohio. This is just one evidence of the kind of thing that is rapidly coming into focus.