An issue considered here is one that very few people in political leadership positions understood or cared about in the late twentieth century: the effectiveness of election administration. It was a public activity with very low priority. An important problem of election administration was constantly changing technology as the use of computers became possible. The bottom line in this era was whether the voting public had confidence in the accuracy and integrity of the new systems. If the results were provided quickly, and there was little question about who won, the issue of public confidence typically would not arise. In some early uses, very delayed results were produced and serious public concerns were raised.

The ability of election administrators to select and implement computerized voting equipment, which the voting public was able to effectively utilize, was a question little understood. Two U.S. representatives and a few technical specialists kept interest alive. Efforts to assist election administrators to deal effectively with the new technology in terms of comparative resources applied, were minimal.

6.1 Continued Use of Lever Machines

At the end of section 4.7, it was noted that lever machines were used by about one of every six voters in 1928 and that, in the early 1930s, the Shoup company had begun to compete with AVM. By 1944, 29 percent of voters used lever machines and in 1948, the usage was about 30 percent nationwide (The New York Times, November 3, 1948, p. 5).

In 1946, Mayor Curley of Boston asked MIT to undertake a study of the two contenders. MIT’s report from the dean of engineering compared the Shoup and AVM machines. It noted that both machines were well designed and that either would be capable of giving good service over a long period of years. As a result of the MIT report, Boston bought 718 Shoup machines at a slightly higher price than equivalent AVM machines.
Human usability turned out to be a distinguishing factor between the machines. Possibly, that was the reason that the Shoup machines had been purchased initially. The 1946 MIT report had stated:

We feel that the vertical arrangement of the ballot on the Shoup machine is of considerable advantage because confusion on the part of the voter is less probable. With the horizontal ballots [of the AVM machine], it is conceivable that the voter may not be clear as to whether he should move the lever above or below the strip on which the candidate’s name is printed . . .

We prefer the Shoup machine, mainly because (a) there appears to be less chance of confusion and incorrect balloting on the part of the voter and (b) less chance of error on the part of the persons delegated to read the machine count and report vote counts.

In the 1950 competition, AVM’s sales manager Frank P. Stone, admitted that there was some loss in the vote due to the horizontal ballot arrangement, but nowhere near 15 percent, as had been charged by competitor Ransom F. Shoup. Stone claimed also that in voting for slates of candidates, the Shoup machine was less capable, in that

the names run close to the floor and people have to stoop over to read them, and short persons have difficulty reading the names on the top.

Despite its criticality in this situation, human usability in design of voting equipment was considered hardly at all by social scientists or other investigators in the next half-century. In a professional article published in 1998, Susan King Roth, an associate professor of industrial design, wrote:

The human use of voting equipment and voters’ perceptions of the voting experience have largely been overlooked. (Roth, 1998, p. 29)

In the same article, Roth described an experiment concerning usability of voting machines in Franklin County (Columbus), Ohio. It was noted that average American female eye height is 60.3 inches, but that the top of the printing of the “issues” section of the machine (running horizontally) was 67 inches off the floor. In the experiment, “several subjects who were observed to stand well below the top of the ballot interface did not vote at all on this section. One subject stated that she did not see any issues on the ballot” (Roth, 1998, p. 33).

In 1956, an important issue was not human factors, but the financial health of the two manufacturers. AVM’s sales in the early years of the century “were bolstered by campaigning reform groups who wanted to do away with the easily corruptible paper ballots” (Wall Street Journal, May 1, 1956, p. 1). Production had slowly climbed from 1,000 machines in 1930 to 1,750 in 1940, 3,100 in 1950, and 4,000 in 1955. AVM had outsold Shoup by two-to-one each year in the past ten.

In an article later that year, it was predicted that 50 percent of the national total of 62 million voters would use voting machines in the forthcoming presidential election (New York Times, November 1, 1956, p. 39). They