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COMPUTERS AND STOCKS
by James McDonald

UNDER THE BUTTONWOOD TREE

Here was the scene 176 years ago.

Twenty-four merchants and traders agreed to meet under the buttonwood tree on Wall Street in Manhattan to buy and sell securities. These hardy twenty-four traded in the $80 million bond issue that consolidated U.S. Revolutionary War debts. They also dealt in such speculative ventures as insurance company issues, Alexander Hamilton's First United States Bank, The Bank of North America and the Bank of New York.

Occasionally inclement weather—rather than any trading pressure—forced the respectable burghers inside. Thus, in 1793, the precursor of the New York Stock Exchange met regularly at the Tontine Coffee House.

Thereafter, for many years, changes were evolutionary and were assimilated without too much trouble. Gradually, however, volume increased, membership increased, share ownership broadened, communications improved, and the value of stocks soared.

Then came the post Korean War bull market. Believe it or not, average daily volume on the Big Board fifteen years ago was 1.4 million shares daily. By 1965 daily volume steadily moved along at an average of six million shares.

The new "900" ticker installed in 1964 by NYSE was capable of handling volume up to 12 million shares without falling behind. Brokers rejoiced in the commission income netted from the upsurge in volume and the market was hectic, but pretty orderly.

Cracks in the system appeared openly in 1966. Volume was considerably higher with the peak trading day seeing nearly 13.1 million shares changing hands before the closing bell.

By 1967 the resulting paper backlog and "fails" (a fail comes about when one broker does not deliver the securities he owes another within the five day settlement period) led the Board of Governors to take an unprecedented action. For nine business days in August, the most efficient securities organizations in the world closed their doors at 2:00 PM instead of the traditional 3:30 PM. The move was a clear indication that the back-office could not properly handle the volume anticipated in a normal day. Last year's average was over 10 million shares traded daily. Recently the NYSE has been handling around $130 billion worth of stocks and bonds annually.

Still the paperwork backed up, errors in posting transactions occurred more frequently, and the dollar amount of fails soared.

In late January, fails totaled $5.7 billion—more than $2 billion greater than the total only six months earlier. The Exchange went back to the 2:00 PM close this year and made it stick for six weeks.

Then came April, 1968. Sunday night, President Johnson indicated he would not seek renomination and that the U.S. would curtail bombing in North Vietnam. The first hour of trading was incredible. Before 11:00 AM, 6.06 million shares changed hands. Midweek the volume topped 51.5 million shares. Along the way the 1929 crash volume record of 16.4 million shares was shattered twice.

And a lot more was shattered—any delusion that the current state of Wall Street technology could begin to handle the load was buried in mountains of order slips, tickertape, bookkeeping entries, checks and ledgers.

THE PAPER TIGER

Probably more than any other institution, the securities markets have become the symbol of capitalism throughout the world. Public ownership of American business is at the very core of a free U.S. society, and Wall Street is the entire Western world's financial center.

Preservation of this free system depends on the abilities of financial specialists to solve the overwhelming problems. The attack on Wall Street's "Paper Tiger" was mapped out on several fronts—the exchanges, the unlisted securities markets, and the brokerage houses.

In all cases, one formidable weapon was enlisted for the front lines—electronic data processing technology. The computer had already proven its data processing capabilities in industry and government. The time was ripe for its move on Wall Street.

CENTRAL CERTIFICATE SERVICE (CCS)

One of the biggest obstacles to clearing the paperwork problem is the stock certificate—stocks must be delivered to brokers within five days of purchase. If certificates are not delivered, a "fail" occurs and a series of accounts payable and receivable result.

This summer, the New York Stock Exchange activated its computerized Central Certificate Service. Ideally, CCS works something like a regular bank checking system. Shares h[illegible] in a broker's name are deposited centrally. A transfer [illegible] stock between brokers is made by computer, through a bookkeeping entry removing the shares from one account