AN EXAMINATION OF IBM PRICING POLICY IN THE 60's AND 70's

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1952 - 1969 IN THE BEGINNING...

The modern history of IBM pricing policy starts with the 1952 antitrust suit filed by the Justice Department. IBM was charged with monopolizing the tabulating machine industry. (At that time, the computer industry was practically non-existent). The suit charged that IBM monopolized the industry by maintaining a lease only policy and by refusing to cross-license its patents on the manufacture of tab card equipment. In 1956, IBM signed a consent decree to settle the suit. IBM agreed to the following four points:

1. IBM will limit its leases to one year,
2. IBM will sell its equipment as well as lease,
3. IBM will divest itself of manufacturing capacity over 50% of US capacity, and
4. IBM will cross-license its tabulating machine patents free of royalty, and will cross-license other patents at a reasonable royalty charge.

This consent decree, although it directly applied to IBMs tab card business, guided IBMs actions into the 1960s as the US computer industry started to grow. In the mid-sixties, IBM announced the System/360. The S/360 was unique in that the connection to peripheral equipment such as tape drives was standardized. This fact and the fact that IBM pursued several policies of price discrimination opened the market for small companies to produce and sell IBM compatible peripheral equipment.

In the late sixties, IBM practiced two major forms of price discrimination. First, it charged different customers different

prices for the same item of hardware. IBM, knowing that the businessmen of the future were in college today, gave discounts of up to 30% to universities. (At one point, they even donated computers if the school would teach a programming course using it.) Also, IBM would provide varying levels of software and hardware support to different customers paying the same price. Second, IBM used what it called "functional pricing" in the sale of its equipment. This pricing policy means charging according to the performance of the piece of equipment rather than according to the actual cost of manufacturing. Figure 1 shows the price performance curve of one of IBMs most popular tape drives, the 2420. It was available in several models and I shall discuss the -5 and -7. The -7 had about twice the performance of the other model and rented for about twice the price. The profit margin for the -5 was 29.4% while for the -7, it was 42.9%. IBM policy here was to extract revenue from those needing performance regardless of the production costs. This is only effective when the products do not face competition. In a competitive market, the high price-low cost area will attract other manufacturers. That is exactly what happened.

In November 1967, Potter Instrument and Management Assistance introduced plug compatible versions of the IBM 2401 tape drive. IBMs first response was to announce the 2420 tape drive. The 2420 took advantage of new technology to significantly lower the price-performance curve. The imbalance at the high performance end

still existed and in 1970, Potter, Storage Technology Corporation (STC) and Telex announced their versions of the 2420. IBM management, who initially felt that the innovative technology of their 2420 would protect the new drives from competition, had to reassess the high profit margins placed on the high performance end of the product line.

1969 - 1972 IBM FIGHTS BACK

By July 1970, plug compatible manufactures (PCMs) had about 11% of the peripheral market and IBM had predicted that PCM could have up to 23% of the add-on memory business in a few years. In 1969, a new problem arose for IBM - the Justice Department filed suit against IBM charging violation of the Sherman Act. Specially mentioned in the suit were:

1. IBMs pricing policy of offering a single quote for the entire system and services,
2. IBM used accumulated software experience to keep out competitors,
3. IBM marketed selected computers with unusally low profit margins especially in areas where other companies had or may acquire a foothold, and
4. IBM prematurely announced new models to disrupt the market.

(This suit, still unresolved, recently celebrated its tenth aniversary).

IBM's reaction to this suit was to immediately "unbundle" its systems. In effect, IBM will now sell any piece of hardware, software or support service separately. This action was just what the PCM companies wanted. Now they could market their peripheral devices to users who did not have to buy complete IBM systems. But the PCMs did not realize that this policy was about to backfire.

IBM, via a program internally called SMASH, was about to completely restructure its pricing plan. In early 1971, as a response to the inroads made into its markets due to functional pricing of tape drives, IBM announced the 3420 series tape drives. These drives, although they used new technology, did not offer a performance improvement. Their main function was to let IBM correct their pricing mistake of the 2420. Figure 1 shows the new price-per-formance curve. Profit margins were set at 26.5% for the low end units and 29.2% at the high performance end. The PCMs, of course, countered with a price cut on their drives, but the squeeze was on. At this time, all IBM lease products were cancellable on thirty days'notice, while the leases of most competitors were one-year or longer. (The long leases were one reason that PCMs could offer lower prices.) On May 25, 1971, IBM announced the Fixed Term Plan (FTP). FTP cut lease prices up to 35% while requiring one or two year lease terms with heavy cancellation penalties. The effect was immediate. Within a week, Telex stock dropped 14% and over the next two years, its stock value dropped from $198 million to $48 million. The order rate for PCM tape drives dropped 62% by December 1971. Next IBM addressed the add-on memory competition. In 1970, IBM announced the System/370 models 155 and 165 with memory prices of $12,000 per month per megabyte rental. With these systems and the previously installed base of S/360 machines, memory PCMs continued to make advances into IBM's customer base. The 155 and 165 used magnetic core

memories. In late 1970, IBM announced the S/370 145 with all semiconductor memory. With the pending announcement of the S/370 135 in March 1971, IBM was beginning to be concerned over the ability of competitors to continue to make advances in this market. The final SMASH project announcement on August 2, 1972 set the stage for the latest chapter in IBM history. On that day, IBM announced the S/370 models 158 and 168. IBM now required a minimum amount of memory be purchased with each system. The memory was also moved from an external box to inside of the processor itself. The price of memory was lowered 57% to $5200 per month per megabyte. (A price many considered was designed to drive the competition out of business.) In order to compensate for the lower memory and peripheral prices, IBM raised the price of the central processor (CPU) by 36% for the 165 to 168 and by 54% for the 155 to 158. By late 1972, the FTP on peripherals with its substantial price cut followed by increases in CPU prices and reduced memory prices were reallocations of the revenue between CPUs and peripherals to take account of the fact that IBM no longer had substantial market power in peripherals.

1972 - PRESENT COMPETITION FROM ANOTHER SOURCE

In the early seventies, IBM continued its policy of functional pricing of the central processors of its systems. Figure 2 shows the price-performance graph of many of IBM's past, present

and future systems. The increase of CPU prices brought on by PCM competition in 1972 opened IBM to competition in the plug compatible CPU market. The S/370 158 and 168 being on the high end of the performance scale attracted several entrants into competition with IBM. Dr. Gene Amdahl left IBM in 1970 to form his own company to manufacture machines in the 168 and up range. In 1975, National Semiconductor entered in the 158 range. Figure 3 shows the effect on the price of 158 class machines caused by the various IBM and competitors strategies.

In 1972, with the announcement of the 158, IBM raised its CPU prices by 54%. This created a "price umbrella" under which competitors could function. The new entrants needed several years to develop their products and during this time, IBM continued to raise the price of the CPU while lowering the prices of memory and peripherals. With the first delivery of the Amdahl machine in 1976 (with twice the performance of the 168 at the same price) and the delivery of the National machine in 1977 (with the performance of the 158 at a substantially lower price), IBM countered with the announcement of the 303X series of machines and dramatic price cuts. IBM felt secure in making these price cuts since competition was starting to make advances. IBM was emboldened by its successful defense of the California Computer suit and the fact that the Justice Department antitrust case was faltering. These price cuts in March 1977 totaled 35%.

The profit squeeze continued in 1979 as IBM introduced the low end of what is considered its main system for the 1980s. This tactic is similar to the one employed in the early 1970s against tape and memory PCMs. The 4300 system uses innovative technology to cut the price-performance ratio in half, that is, the same performance at half the price. The effect on the industry could have been predicted. Several competitors have divested themselves of their PCM business while others who have chosen to remain in the business expect little or no profit from that segment in the next year.

CONCLUSION

Both the 1970-1972 battle with the peripheral manufacturers and the 1977-1979 battle with the CPU manufacturers show IBM clearly in a position of the profit maximizer taking advantage of the structural characteristics of the industry. IBM pursued a combination of pricing policies. First, they tied products in which they were losing market power to those in which they maintained market power. This was done with discretion since tying products together is illegal under the antitrust laws if it expands market power. Secondly, they increased the prices of products with barriers to entry while dropping or at least competitively setting the price on those products with no barriers to entry. Thirdly, once the market was penetrated, IBM used its position of power and economies of scale to introduce new products at lower prices.

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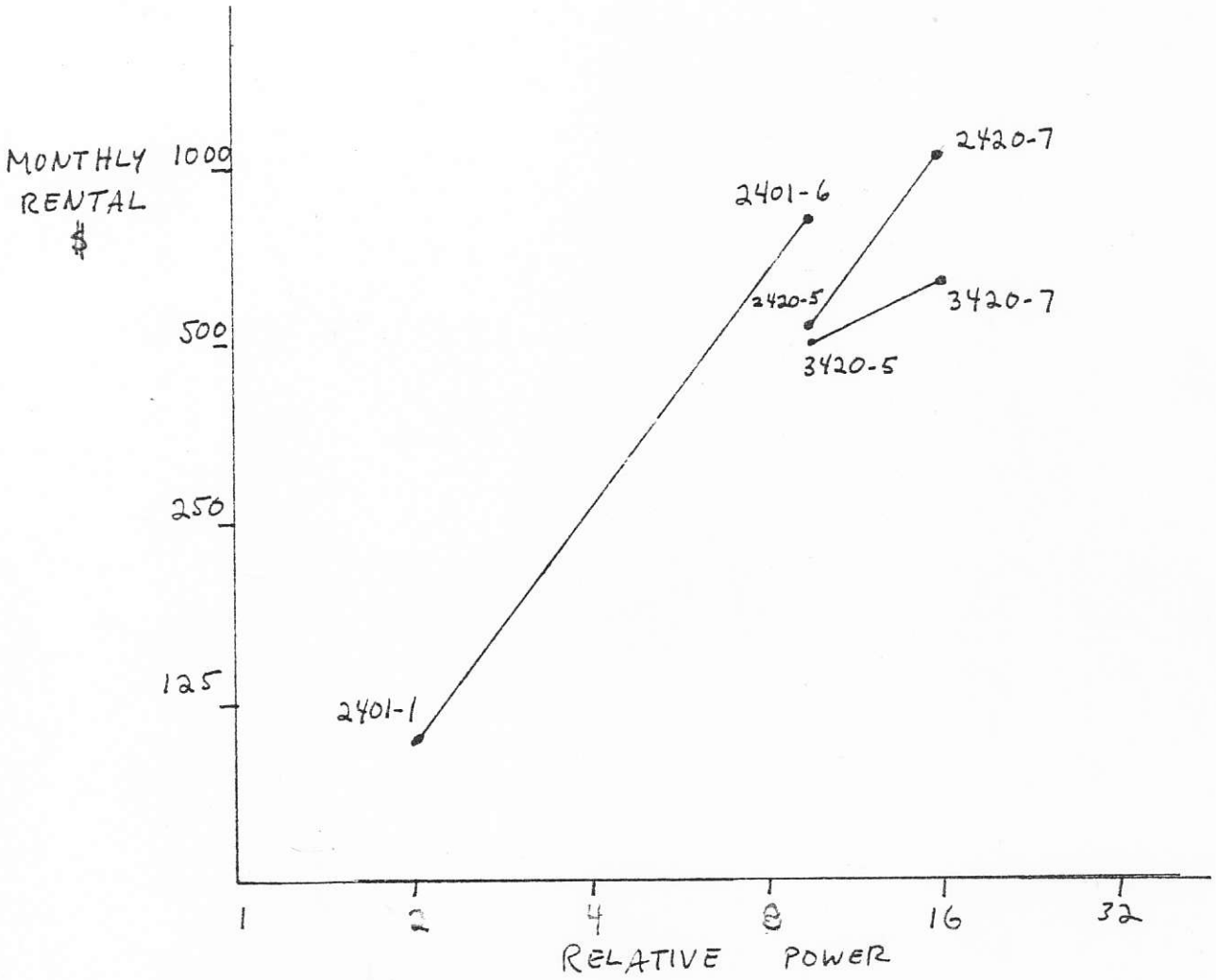


FIGURE 1 TAPE DRIVE PRICE-PERFORMANCE CURVES

SOURCE: BROCK, US COMPUTER INDUSTRY

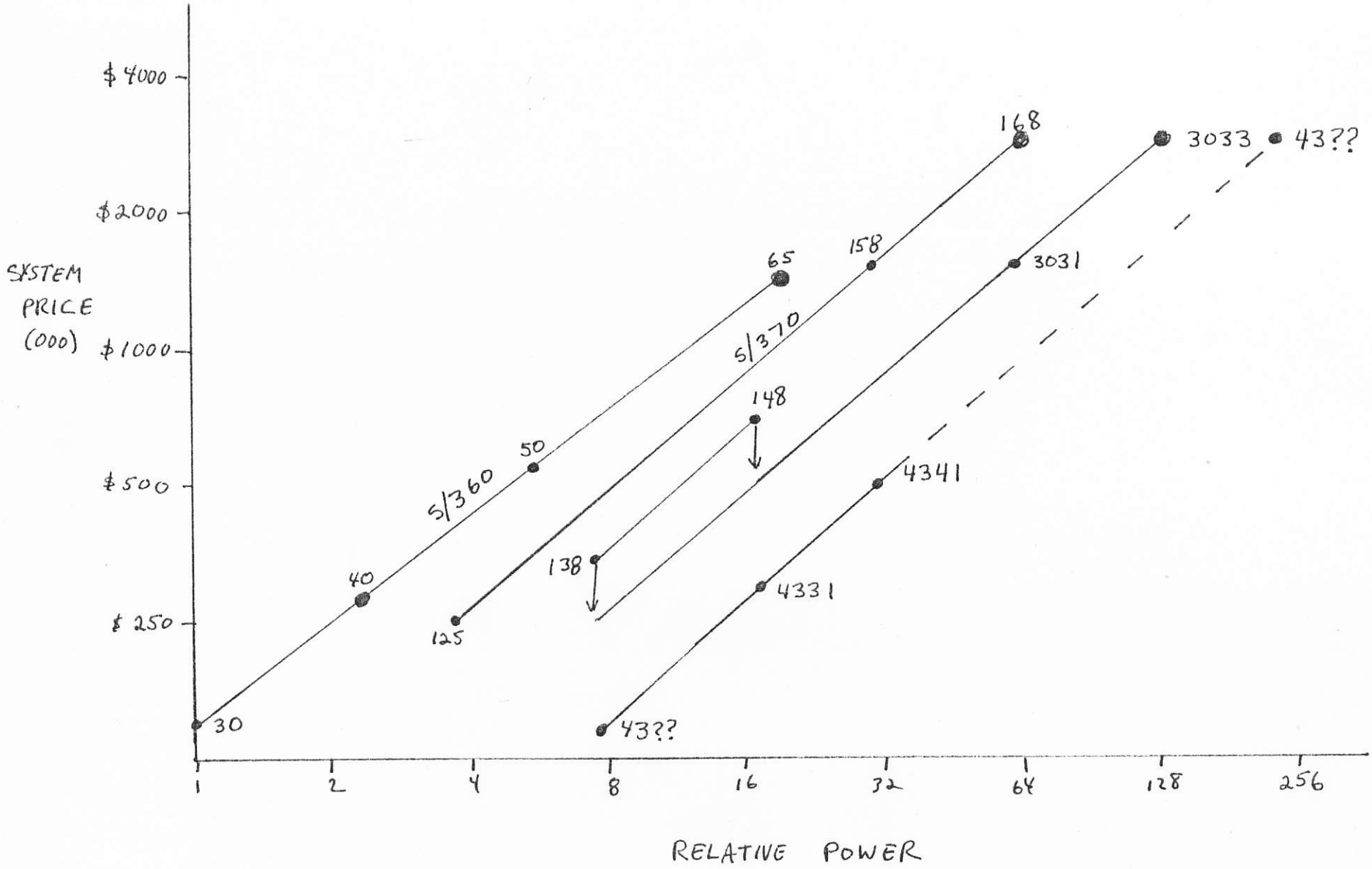
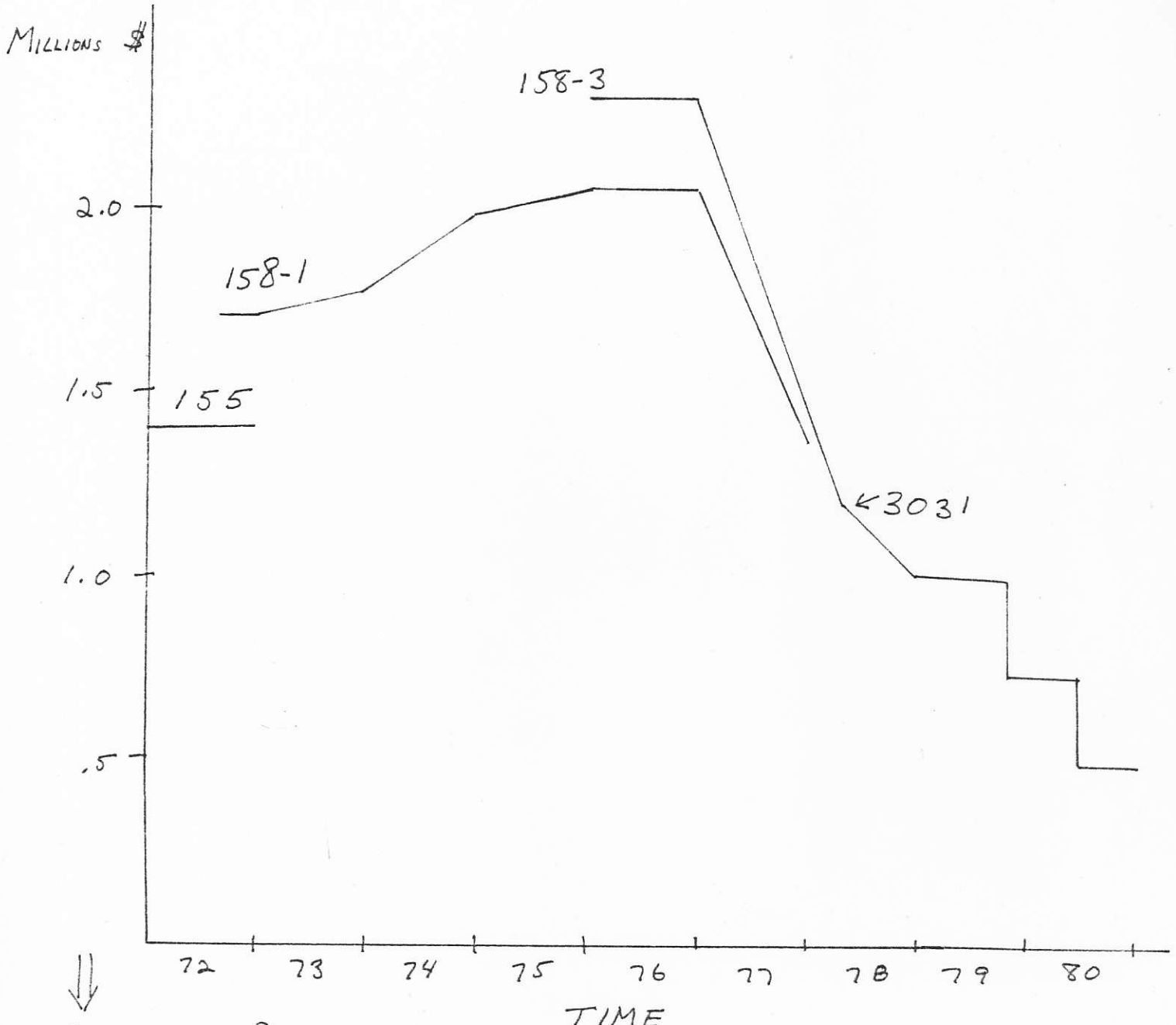


FIGURE 2 PRICE PERFORMANCE CURVES

SOURCE: BW 5/30/77 + INDUSTRY UPDATE

FIGURE 3
IBM 158 CLASS PRICE TRENDS



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