System Error: How the IBM Antitrust Suit Raised Computer Prices

David Levy and Steve Welzer

On January 8, 1982, Assistant Attorney General William Baxter dropped the Justice Department's antitrust suit against the International Business Machines Corporation, declaring it to be "without merit." The suit, which was filed by the Department of Justice in 1969, had alleged that IBM was monopolizing the general-purpose mainframe computer market in violation of section 2 of the Sherman Act. In its thirteen years, the litigation produced more than 104,000 pages of transcript and consumed Department of Justice funds at a rate of $1 to $2 million a year.

Aside from the considerable legal expenses incurred by both parties, an antitrust suit of this magnitude and importance can have other social costs and benefits. One of the possible benefits is deterrence. The impending threat of antitrust penalty might discourage firms from (among other things) charging monopoly prices. However, the evidence indicates that the IBM case had the opposite effect. Although the litigation may have discouraged certain allegedly anticompetitive practices (bundling, for example), it also had the unintended consequence of raising prices.

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The Theory

How might this occur? In determining its pricing strategy, a firm considers how current prices affect future, as well as present, profits. A firm that charges a higher (quality-adjusted) price than its rivals will normally lose market share, as other firms already in the industry expand and as new firms enter. In a market like that of computers, the firm's loss of customers will be gradual. Existing customers will hesitate to switch vendors because of the substantial costs of converting software and retraining staff. New buyers may find it hard to distinguish between the prices and attributes of different computer systems. And competing firms will need time to plan and build new plants and increase promotion efforts. Nevertheless, customers *will* gradually be lost. Thus current prices affect future profitability through delayed effects on market share.

A firm's optimal pricing strategy—putting aside antitrust considerations—will depend on

such factors as its present and expected future market share, its present and expected future costs relative to those of its rivals, and expected industry growth. Sometimes it will be in the firm's best interest to set prices so as to gain market share. But in a fast-growing market, the best pricing policy may be to accept losses in market share, because the internal costs of expanding along with the market are too great.

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The threat of antitrust action is likely to affect the target firm's pricing strategy by changing the firm's perception of how large its future market share will be allowed to be. By threatening the firm's right to achieve a future market share, an impending anti-monopolization suit reduces the firm's potential for future profits. The suit thereby encourages the firm to take short-run profits by raising its price toward the monopoly level. More specifically, the filing of an antitrust suit aimed at reducing a firm's market share will impel that firm to increase prices if it sees a reasonable probability of losing the suit. And, conversely, improvement in the firm's litigation prospects will cause it to adjust prices downward, in which case market shares will rise or at least fall less rapidly than before.

IBM's Reaction

The suit against IBM plainly threatened the firm's market share, for it sought not only to levy financial penalties against IBM but also to divide the firm into several smaller companies. (The precedent for such a breakup was established in the *Standard Oil* case of 1911 and reaffirmed in the *Alcoa* case of 1945.) IBM took this threat seriously, and with good reason: it had a prior history of losing antitrust cases. In the famous tie-in suit of 1936, it was forced to sell as well as rent machines; it lost a second suit twenty years later; and it was forced to divest its Service Bureau to Control Data Corporation in settlement of a private antitrust suit brought by the latter firm in 1968.

Faced with the threat of loss in future market share, IBM had less incentive than before to maintain its market share by aggressively competitive pricing. Far better to increase profits by raising prices and allowing market share to fall slowly toward the level sought by antitrust authorities. Since the *Alcoa* case, a large market share has been considered a key indicator of monopolization. Thus a decline in market share would weaken the case for breaking up IBM, and the associated expansion by rivals and entry of new firms would provide further evidence of competition in the computer market.

When the 1969 action against IBM began, delays of as long as twenty or thirty years were expected. In one way, this weakened the incentive effect, since it made an actual breakup a relatively remote prospect. But in a different way it added another incentive to lose market share. The longer the suit dragged on the more costly it would be for IBM, both directly in resources expended and indirectly in constraints on its behavior. Losing market share would improve the chance of bringing the ordeal to a quick end.

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The evidence indicates that IBM responded rationally to these incentives. The Justice Department began its investigation of IBM in 1967 and initiated the suit in 1969. Two studies of pricing behavior in the mainframe computer market, one by Ratchford and Ford for the years 1967 and 1971 and the other by Michaels for 1971, found that in those years IBM did indeed charge a price premium relative to other mainframe manufacturers. By 1980, IBM's prospects in the antitrust suit had vastly improved.

Most of the private antitrust suits had been settled, none of the claims of monopolization had been established, and no damages had been assessed against IBM. And our study of mainframe prices for 1981–83 found that IBM had reversed course by that time and was discounting its (quality-adjusted) price by an average of 20 percent relative to other mainframe manufacturers. The results of the three studies are summarized in Table 1.*

We also examined evidence of actual changes in market shares in the electronic data processing (EDP) industry as a whole and in particular submarkets. Both these measures also showed a pattern of more aggressive marketing after 1979. Taking industry-wide figures first, IBM's share of the U.S. EDP revenues of the 100 largest EDP firms fell by only 2 percentage points between 1961 and 1968, from 52 percent to 50 percent; between 1968 and 1972, however, it fell 13 percentage points, from 50 percent to 37 percent (see Fisher et al., 1983). Thus, IBM's market share began to drop sharply when the Justice Department started investigating IBM in 1967. Moreover, it continued to fall through the 1970s, reaching 31 percent by 1979. Then in the four years 1980–83 it rose to about 36 percent (based on figures from the industry journal, *Datamation*).

It should be noted that this loss in market share was probably not the result of internal constraints that prevented IBM from expanding production. As Table 2 indicates, IBM's growth in size (real sales) slowed considerably during the 1968–72 period when the firm's market share was declining rapidly, but it then gained speed during the 1979–82 period when market share began to increase. Thus the data are consistent with the hypothesis that IBM was consciously reducing its rate of growth in the earlier period in an attempt to reduce market share.

Turning to the various submarkets of the EDP industry, we find a similar story. IBM's share in the market for mainframe computers declined during the 1970s as new competitors producing "plug-compatible" computers emerged. Thereafter IBM's share of mainframe computer sales rose from 69.4 percent in 1981 to 73.8 percent in 1983. The company's recovery in the fast-growing mini- and micro-computer markets has been even more dramatic. Criticized during the 1970s for its late entrance into these markets, it finally entered mini-computers in 1975 and micro-computers in 1981. IBM quickly became a leading firm in both fields.

Table 1

MAINFRAME PRICE PREMIUMS—IBM RELATIVE TO OTHER MANUFACTURERS

Study	Sample Years	Estimated Price Premium (percent)
Ratchford and	1967	+30 to +40
Ford (1979)	1971	+30 to +35
Michaels (1979)	1971	+10 to +20
Levy and Welzer (1984)	1981–83	−20

Table 2

GROWTH IN IBM'S SALES AND MARKET SHARE

Period	Compounded Annual Growth Rates	
	Real Sales	Market Share
1961–68	+15.1	−0.5
1968–72	+ 3.6	−7.8
1972–79	+ 4.7	−2.5
1979–83	+ 6.4	+3.8

Source: Fisher et al., and *Datamation*, May issues, 1980 and 1984.

In sum, the evidence indicates that by the time the antitrust suit was filed IBM had begun charging a price premium and that its share of the electronic data processing market began a noticeable decline from that point on. The decline continued during the seventies. Since 1980, by which time there were strong indications that the suit would be settled on terms favorable to IBM, the giant firm has discounted its prices and expanded its share of both the EDP market as a whole and the various submarkets. Other industry observers have also noted IBM's recent market change in pricing strategy and its aggressive introduction of new products and expansion into new markets (office systems, telecommunications, robotics, others). A consistent picture emerges: IBM raised its prices with the filing of the antitrust suit and subsequently lowered its prices as its prospects in the suit improved.

*All three studies employed a hedonic pricing model to control for quality variations, such as the processing speed and memory size of different computer models, and to compare IBM's quality-adjusted prices to those of other mainframe manufacturers. In several other respects, however, the methodologies of the studies differed. For discussion and explanation, see Levy and Welzer, 1984.

Lessons Learned

Price increases are clearly not what anti-monopoly regulation should be all about. Yet the IBM suit had the immediate effect of inhibiting rather than promoting price competition. While the suit did advance the antitrust objective of reducing IBM's market share, it appears to have done so only temporarily. Moreover, it may have raised IBM's costs by making it harder for the firm to take advantage of scale economies (this in addition to the considerable legal expense incurred). The suit probably also had the effect of discouraging investments in projects with future payoffs, such as research and development.

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The IBM case also holds more general lessons. The threat of an antitrust suit charging monopolization gives a target firm an incentive to exploit any ability that it has to raise its prices while it still can. The firm generally has plenty of time in which to implement a strategy of price increases. According to a 1970 paper by Richard Posner, the average litigated antitrust case lasts five-and-a-half years. Two modern monopoly cases, *El Paso Natural Gas* (1975) and *United Shoe Machinery* (1969), each lasted more than twenty years.

The threat of legislation, as well as litigation, can have unintended effects. In 1969, criticizing proposed bills that would have dissolved firms in highly concentrated industries, Posner pointed out that

> As leading sellers approached the point at which their aggregate market share would be so large as to trigger dissolution proceedings, they might decide to raise price as a means of preventing further growth and forestalling dissolution. That would aggravate the very problem, monopoly pricing, to which the proposed legislation is principally addressed.

Antitrust initiatives could affect a firm's pricing strategy even if they are not directly aimed at reducing the target firm's market share. For example, regulatory initiatives intended to reduce entry barriers by fiat or to constrain prices some time in the future could threaten to reduce the future profits of the dominant firm and so could give it an incentive to raise prices.

THE ANALYSIS AND EVIDENCE presented here suggest that antitrust enforcement policy can be worse than ineffectual. It may not only enrich lawyers, but also impoverish consumers. When a monopolization suit of dubious merit is brought against a large firm, the suit may simply encourage the firm to exploit fully whatever market power it does possess while the litigation is pending.

This suggests several broader conclusions. First, monopolization cases should be selected with great care. Second, the interim costs of a target's likely pricing response should be weighed in evaluating the net social benefits likely to accrue from the litigation. Third, suits that are not meritorious should be dismissed as promptly as possible, so as to minimize the consumer costs that the litigation itself tends to create. And finally, judges and lawyers must learn, here as in so many other areas, that justice delayed may entail social costs above and beyond the costs of justice denied. ■

Selected Readings

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