

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,)	
)	
Plaintiff,)	
)	
v.)	Civil Action: 97-3040
)	
INTERNATIONAL BUSINESS MACHINES)	Filed December <u>18</u> , 1997
CORPORATION and)	
STORAGE TECHNOLOGY CORPORATION,)	
)	
Defendants.)	

COMPLAINT FOR EQUITABLE RELIEF
FOR VIOLATION OF SECTION ONE OF THE SHERMAN ACT

The United States of America, acting by its attorneys and under the direction of the Attorney General of the United States, brings this action for equitable relief arising from an agreement between International Business Machines Corporation ("IBM") and Storage Technology Corporation ("STK"). This agreement unlawfully restrains competition in the United States and worldwide in the sale of disk storage subsystems for mainframe computers in violation of Section 1 of the Sherman Act (15 U.S.C. § 1). In support of this complaint the United States alleges as follows:

I. NATURE OF ACTION

1. Before June 7, 1996, IBM and STK were two of only five competitors worldwide in the production and sale of direct access storage ("DASD") subsystems for IBM and plug-compatible mainframe

computers (hereafter, "mainframe computers"). In 1995, the last full year in which IBM and STK competed against each other, sales of DASD for mainframe computers (hereafter, "mainframe DASD") exceeded \$4 billion worldwide.

2. On June 7, 1996, IBM and STK entered into an OEM agreement that gave IBM the *de facto* exclusive worldwide right to market STK's mainframe DASD (hereafter, "OEM Agreement").

3. Prior to the OEM Agreement, STK had sold its principal mainframe DASD product, called "Iceberg," in direct competition with IBM's mainframe DASD product, called "RAMAC," as well as in competition with other sellers of mainframe DASD. This competition substantially benefited purchasers of mainframe DASD during the two years prior to the signing of the OEM Agreement.

4. Today STK sells its mainframe DASD products only to IBM, which then resells those products to end-users. The OEM Agreement contains provisions designed to ensure that as a practical matter STK sells to no one other than IBM. After executing the OEM Agreement, STK has sold mainframe DASD only to IBM, which also continues to sell RAMAC.

5. By entering into the OEM Agreement, IBM and STK effectively agreed to stop competing against each other in the sales of mainframe DASD, to the detriment of purchasers of these products. The OEM Agreement has substantially lessened competition in the market for mainframe DASD.

II. JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction under Section 4 of the Sherman Act (15 U.S.C. § 4) and under 28 U.S.C. §§ 1331 and 1337 to prevent and restrain violations by IBM and STK of Section 1 of the Sherman Act (15 U.S.C. § 1).

7. Venue is proper in this district under Section 12 of the Clayton Act, 15 U.S.C. § 22, and under 28 U.S.C. § 1391(c) because both IBM and STK transact business and are found in this district.

III. THE DEFENDANTS AND INTERSTATE COMMERCE

8. Defendant IBM is a corporation organized and existing under the laws of the State of New York, with its principal place of business in Armonk, New York. IBM is by far the world's largest supplier of mainframe computers and related products. For the year 1996, IBM posted worldwide revenues of about \$75 billion. Included in this total are over \$2 billion in sales of mainframe DASD, representing shipments of about 588 "terabytes" of data storage capacity. The terabyte -- equivalent to the amount of data that can be stored in hundreds of millions of pages of paper -- is a standard industry measure of sales volume. IBM's total U.S. DASD sales in 1995 were over \$1.2 billion, for 275 terabytes of mainframe DASD.

9. Defendant STK is a corporation organized and existing under the laws of the State of Delaware, with its principal place

of business in Louisville, Colorado. STK reported total worldwide revenues of about \$2 billion in 1996. STK's core businesses are computer data storage and retrieval systems, especially those for mainframe computer systems. Other than mainframe DASD, STK's major products are automated tape library storage systems for mainframe computers, and it is the world's dominant supplier of these tape systems. STK's 1995 worldwide sales of mainframe DASD were over \$300 million, representing shipments of about 155 terabytes. Its U.S. sales of mainframe DASD in 1995 were about \$190 million, representing shipments of about 100 terabytes.

10. IBM and STK are engaged in, and their activities substantially affect, interstate and foreign commerce.

IV. BACKGROUND

The Mainframe DASD Market

11. DASD are computer data storage systems that utilize rotating magnetic disks. "Mainframe DASD" are specifically designed to attach to and operate with mainframe computers. In common industry usage, and as used in this complaint, "mainframe computers" means IBM's System 390 computers, predecessor models, and other manufacturers' IBM-plugin-compatible computers that operate with IBM mainframe computer operating systems, principal examples of which are IBM's OS-390, MVS, VSE, and VM operating systems.

12. Mainframe DASD perform high-speed and high-capacity data storage and retrieval functions that are essential to the operation of mainframe computer systems. Mainframe computers and mainframe DASD are commonly and widely used for mission-critical data processing by business, educational, governmental, and other organizations throughout the world. Data search times measurable in milliseconds and high data-transfer rates make DASD suitable for on-line transaction processing, large volume batch processing, and other applications in which rapid access to large amounts of data is important.

13. Although other types of data storage devices exist -- for example, tape, optical and electronic memory products -- because of performance or cost differences, none of these other products are effective substitutes for DASD. Conversion to a non-mainframe computer system is also not an effective way to substitute away from mainframe DASD because of the substantial costs and risks of switching to an alternative computer platform.

14. IBM, STK, and other manufacturers sell DASD subsystems throughout the United States and worldwide.

Competition and Market Structure

15. IBM invented DASD in the 1950s and was historically the dominant producer and seller of DASD products worldwide. In the early 1990s, however, IBM began to face significant competition from DASD products built with a new architecture, called "RAID"

(Redundant Array of Inexpensive Disks). This new DASD architecture used fault-tolerant arrays of many inexpensive disk drives linked together for redundancy to ensure against data loss in the event of the failure of any particular drive. It permitted the manufacture of highly reliable mainframe DASD at a cost far lower than that of producing IBM's highly reliable but very expensive individual disk drives.

16. While STK was recognized as an innovative developer of mainframe RAID technology in the late 1980s and early 1990s, product development difficulties delayed the introduction of its RAID product, Iceberg, until 1994. These delays allowed another firm, EMC Corporation, to become in 1991 the first company to market a RAID-type mainframe DASD product. EMC effectively used the technical and cost advantages of its RAID product to attract market share from IBM. In 1994, IBM introduced its own RAID product, RAMAC, and STK brought Iceberg to market.

17. As with most computer hardware products, one of the most significant trends in the mainframe DASD market has been a rapid decline in cost. Because of continuing technological advances and improvements, largely related to exponential increases in the amount of data that can be stored on a disk drive of constant size, mainframe DASD costs and prices as a function of storage capacity have declined steadily and should continue to decline over the foreseeable future. For example, the average selling price of DASD, measured on a cost per

megabyte basis (\$/MB) fell from approximately \$10.00 in 1990 to between \$1.00 and \$2.00 per megabyte in 1995-96.

18. Until the OEM Agreement, IBM, STK, and EMC were the three leading marketers of such products both in the U.S. and worldwide. Only one other firm, Hitachi Data Systems, had a significant share of the mainframe DASD market. Hitachi did not introduce a RAID product until the end of 1995.

19. The mainframe DASD market is highly concentrated. In 1995, there were only four major competitors, which were reduced to three by the OEM Agreement. Using a measure of market concentration called the Herfindahl-Hirschman Index ("HHI"), explained in Appendix A, the OEM Agreement substantially increased concentration in the already highly-concentrated mainframe DASD market. In 1995, the last full year in which IBM and STK were independent competitors, in the United States, IBM had a market share, in terabytes, of 33%; STK had a market share of 12%. The post-OEM Agreement HHI increased 792 points from 3242 to 4034. Measured worldwide, the post-OEM Agreement HHI increased 720 points from 3047 to 3767.

The OEM Agreement

20. Pursuant to the terms of the OEM Agreement, as of July 1, 1996:

- (a) STK is to supply, and IBM is to purchase, STK's mainframe DASD products at fixed prices that decline

over time. The declining prices to IBM reflect the expected continuing decline in STK's manufacturing costs. IBM effectively has the exclusive right to resell STK's DASD products. It sells these products under its own trademark and sets the price at which they are sold or leased.

- (b) IBM is committed to purchase quarterly and annual minimum volumes of STK DASD, expressed in terabytes. The OEM Agreement imposes financial penalties on IBM if it fails to purchase these minimum volumes.
- (c) IBM is required to pay STK "recovery payments," the amounts of which decline proportionately with increasing volume purchases by IBM of STK's DASD products. The recovery payments also take into account the proportion of IBM's total sales that consist of STK products: the higher the proportion of sales of STK products to IBM's total sales, the lower the recovery payment.
- (d) IBM is to provide STK with funding for improvements to STK's mainframe DASD products that were planned prior to the OEM Agreement.

21. Under the OEM Agreement, IBM may continue to sell its RAMAC products, and it has done so. IBM intends to sell RAMAC at least until it introduces its next generation mainframe DASD product, currently known as "CPSS" (Common Parts Storage

Systems). IBM expects to introduce CPSS sometime in 1998.

22. The facially non-exclusive nature of the OEM Agreement is illusory because STK would suffer severely adverse financial consequences if it were to sell DASD independently of IBM. Thus, the OEM Agreement effectively eliminates all competition between IBM and STK, and STK has made no mainframe DASD sales except to IBM since it took effect.

23. The OEM Agreement extends through the end of 1998, with IBM and STK expressly reserving the right to renew the agreement thereafter. Thus, this antitrust violation will continue unless the relief prayed for is granted.

V. HARM TO COMPETITION

24. The OEM Agreement has deprived customers of the benefits of free and open competition in the manufacture and sale of DASD products by eliminating direct and significant competition between IBM and STK in that market. Prior to the OEM Agreement, STK was well known to IBM, other DASD producers, customers, and industry analysts as an aggressive competitor in the mainframe DASD market. STK was the low-price bidder for numerous DASD sales; and for many customers, IBM and STK products were the top two choices in numerous bidding situations.

25. Entry into the mainframe DASD market is difficult, and there are unlikely to be new entrants able to counteract the anticompetitive effects of the OEM Agreement. The development,

testing and marketing of mainframe DASD require considerable time and expense. STK spent several hundred million dollars over a period of six years before it was able to offer a DASD product with the functionality and reliability required by most customers. A new entrant would also have to overcome the strong customer preference for products with an established reputation of reliability, availability and customer support. At a minimum, it takes years and a significant investment of resources to build such a reputation. No entrant is likely to enter the DASD market in any reasonable time and replace the competition lost through the elimination of STK as an independent competitor.

VI. VIOLATION CHARGED

26. Prior to July 1, 1996, IBM and STK were substantial, direct horizontal competitors in the manufacture and sale of DASD. Today, as a result of the OEM agreement, the two no longer compete. The OEM Agreement has caused anticompetitive effects, and it constitutes an unreasonable restraint of trade in the worldwide market for mainframe DASD. It adversely affects interstate and export commerce and violates Section 1 of the Sherman Act, 15 U.S.C. § 1.

VII. REQUESTED RELIEF

27. The United States seeks judgment against IBM and STK as follows:

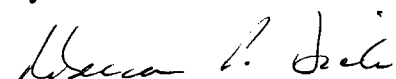
- (a) That the court adjudge and decree that the OEM Agreement constitutes an illegal restraint of interstate trade and commerce in violation of Section 1 of the Sherman Act and issue an injunction requiring modification or rescission of the OEM Agreement.
- (b) That the Court issue an injunction requiring IBM and STK to take all steps necessary to ensure that STK can sell mainframe DASD in competition with IBM and other sellers of mainframe DASD.
- (c) That the United States recover the costs of this action.
- (d) That the United States have such other relief as the Court may deem just and proper to prevent recurrence of the alleged violation and to dissipate the

anticompetitive effects of IBM's and STK's past
violation.

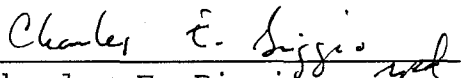
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APPENDIX A

HERFINDAHL-HIRSCHMAN INDEX CALCULATIONS

"HHI" means the Herfindahl-Hirschman Index, a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of thirty, thirty, twenty, and twenty percent, the HHI is 2600 ($30^2 + 30^2 + 20^2 + 20^2 = 2600$). The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

Markets in which the HHI is between 1000 and 1800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1800 points are considered to be highly concentrated. Transactions that increase the HHI by more than 100 points in concentrated markets presumptively raise antitrust concerns under the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission. See *Merger Guidelines* § 1.51.