

**“US v. MS AND THE FUTURE OF THE US
COMPUTING INDUSTRY”**

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I am not a consultant of DOJ, Microsoft, or any of the 19
States and the District of Columbia that are suing Microsoft

**For more extensive coverage of the Microsoft trial click on
<http://www.stern.nyu.edu/networks/ms/>**

THE ALLEGATIONS

In *United States v. Microsoft*, Microsoft (“MS”) is mainly accused of :

1. Monopolization of the market for operating systems (“OSs”) for PCs; (¶ 2, Sherman Act)
2. Anti-competitive contractual arrangements with various vendors of related goods such as with computer manufacturers and Internet Service Providers (“ISPs”) and other actions taken to preserve and enhance its monopoly; (¶ 2, Sherman Act)
3. Attempting monopolize the market for Internet browsers (but failing to succeed); (¶ 2, Sherman Act)
4. Anti-competitive bundling of the Internet Explorer (“IE”), the MS Internet browser, with the Windows operating systems; (¶ 1, Sherman Act)

THE LAW (1)

The US antitrust law, as presently interpreted, implies:

- **“Monopolization”** under ¶ 2 of the Sherman Act is illegal if the offender took anti-competitive actions to acquire, preserve, or enhance its monopoly

Sherman Act ¶ 2: “Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony.”

- For “monopolization,” plaintiffs have to prove that the defendant
 1. Possesses market power
 2. Willfully acquired or maintained this monopoly power as distinguished from acquisition through a superior product, business acumen, or historical accident

THE LAW (2)

- **“Attempting to monopolize”** is illegal (Sherman Act, ¶ 2)
 - Bundling, and, more generally, price discrimination could be illegal if it has anti-competitive consequences
 - Exclusionary contracts could be illegal if they have anti-competitive effects
- To prove “attempting to monopolize” (under Sherman Act ¶ 2), plaintiffs have to prove that the defendant
 1. Engaged in predatory or anti-competitive conduct
 2. with intent to monopolize
 3. and that there was a “dangerous probability” that the defendant would succeed in achieving monopoly power

THE LAW (3)

- Unreasonable “**restraint of competition**” is illegal under ¶ 1 of the Sherman Act; this may include tying of products or exclusive arrangements

Sherman Act ¶ 1: “Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.”

MICROSOFT'S BUSINESS

- Microsoft sells
 - Software
 - Operating systems for PC (Windows 95, 98, NT, 2000)
 - Operating systems for local network and Internet servers (Windows NT, 2000)
 - “Back-office” products for network and Internet servers
 - Internet Clients
 - Internet and Network Servers
 - Desktop applications (Office, Word, Excel, Access, PowerPoint, MS-Money, etc.)
 - Games
 - Programming languages (Visual Basic, Java)
 - Services
 - Internet service (MSN, WebTV)
 - Internet content (MSN)
 - Product support
 - Hardware
 - Mice, keyboards

THE JUDGE'S "FINDINGS OF FACT" AND "FINDINGS OF LAW"

- The judge's "findings of fact" (November 1999) and "findings of law" (April 2000) find for the plaintiffs (US Department of Justice and 19 States) in almost all the allegations against MS
- The judge finds:
 - Microsoft has a monopoly in the PC operating systems market (for Intel-based computers) "where it enjoys a large and stable market share"
 - Microsoft used its monopoly power in the PC operating systems market and harmed competitors
 - Microsoft hobbled the innovation process
 - Microsoft actions harmed consumers
 - Various Microsoft contracts had anti-competitive implications, but MS is *not* guilty of anti-competitive exclusive dealing contracts hindering the distribution of Navigator

ESSENCE OF THE JUDGE'S ARGUMENT ON MONOPOLIZATION OF OPERATING SYSTEMS MARKET (1)

1. MS has monopoly power in the OS market for Intel-based PCs

[**Problem:** Low price of OS; if Microsoft is able to exercise monopoly power, why does it not exercise it through price? Most economists would agree that it is more profitable to exercise market power by increasing price than by raising the non-price costs of rivals]

[**Problem:** Antitrust market definition should be based on substitution considerations; market should include computers based on other chips and other hardware]

[**General problem for antitrust:** Monopoly may maximize social surplus when there are network externalities present under conditions of incompatibility; *de facto* standardization is valuable]

Economides and Flyer (1998), “Compatibility and Market Structure for Network Goods,” <http://www.stern.nyu.edu/networks/98-02.pdf>) show that, in market conditions similar to the ones in the OS software market, social welfare (total social surplus) can be higher in monopoly

Table: Profits, Consumers’ and Total Surplus Under Incompatibility

Number of firms	Π_1	Π_2	Π_3	Total Industry Profits $\sum_{j=1}^l \Pi_j$	Consumers’ surplus CS	Total Surplus TS
1	0.1481			0.1481	0.148197	0.29629651
2	0.1097	7.159e-3		0.1168	0.173219	0.29001881
3	0.1077	5.377e-3	3.508e-4	0.1135	0.175288	0.28878819

ESSENCE OF THE JUDGE'S ARGUMENT ON MONOPOLIZATION OF OPERATING SYSTEMS MARKET (2)

2. MS maintained its monopoly power by anti-competitive means
 - by attempting to kill Netscape Navigator through predatory actions because
 1. Netscape Navigator run on top of many OSs
[**Problem:** Internet Explorer also runs over many OSs]
 2. Netscape Navigator could become the platform over which some applications could be run over the Internet
[**Problem:** Limited to Internet-based applications; Navigator is *not* an OS and was unlikely to ever become one]
[**Problem:** Grabbing market from Navigator may have had competitive justifications]
 - by killing Java as an non-OS-specific language over which applications could be written (instead of being written for Windows)
 - MS promoted its own version of Java which was Windows-specific
[**Problem:** MS claims that Sun's non-OS-specific language was inefficient and slow, and it improved it -- a competitive justification]

ESSENCE OF THE JUDGE’S ARGUMENT ON ATTEMPTING TO MONOPOLIZE THE BROWSER MARKET

- MS lost money while trying to gain market share from Netscape, in its attempt to monopolize the browser market by leveraging its monopoly of the OS market

- MS failed in this attempt

[Problem: You cannot extract monopoly surplus twice --
“Chicago critique”]

[Problem: Contradicts plaintiff’s theory if the browser and OS markets are the same]

ESSENCE OF THE JUDGE'S ARGUMENT ON TYING OF OS AND BROWSER

- MS has monopoly power in OS market
- Browser market separate
- Technological and contractual tying of IE with Windows raised price and hurt consumers

[**Problem:** Hard to prove that a quality-adjusted new version of Windows *without* IE should not have a higher hedonic price than old Windows; i.e. hard to prove increase in price is because of tying and consumers were hurt]

- Consumers do not want IE even for free because it burdens the OS with memory and overhead requirements
[Problem: Very unlikely]

[**Problem:** Contradiction: in ¶ 2 part of the case browsers are in the same market as OS, but in section 1 part of the case, browsers and OS are in different markets]

[**Problem:** For ¶ 2 part of the case, IE price is too low; for ¶ 1 tying, IE price is too high]

REMEDIES PROPOSED BY DOJ AND THE STATES

1. Break up Microsoft according to lines of business into two companies, one for operating systems (Windows 98, NT, and 2000), one for applications (MS-Office, MS-Money, etc.) and whatever else MS makes (including server software). Internet Explorer is licensed to both companies.
2. Impose a variety of interim conduct restrictions

ARGUMENT IN FAVOR OF DOJ REMEDIES

- Reduces the incentive for vertical foreclosure
- Reduces the applications barrier to entry by separating “MS APPs” from “MS OS”

[Problem: Over 10,000 applications available for Windows, most not made by MS; MS Office is already available for Mac OS; MS Office not available only for Linux (3-4% of the market); no significant reduction in the applications barrier to entry]

PROBLEMS WITH BREAKUP REMEDIES (1)

- A breakup would hurt both shareholders and consumers
 1. Microsoft is an entrepreneurial company that is run by very few top executives (about twenty) with very fluid divisions
 - This makes it flexible and efficient, qualities that the DOJ should try to preserve (although Microsoft's competitors would probably like to extinguish)
 - Big difference from AT&T's breakup, since AT&T was a mature company with plenty of managers, and the long lines division was run separately from the local telephone companies
 - Moreover, AT&T's long lines was *not* divided as originally proposed by DOJ
 - To support breakup remedies, DOJ has to show that conduct remedies will not work, and DOJ has not shown that

PROBLEMS WITH BREAKUP REMEDIES (2)

2. Will result in higher prices

- Since new “MS OS” have no incentive to keep the price low so that it can exercise monopoly power in the adjacent browser market, MS OS can now exercise the monopoly power it has (according to DOJ) and raise the price of the operating system
- If DOJ is correct and MS has significant monopoly power because of the “applications barrier to entry,” higher prices will be the direct result of the breakup
- DOJ has not performed the appropriate cost-benefit analysis to show that conduct remedies are not sufficient and that a breakup is necessary

PROBLEMS WITH BREAKUP REMEDIES (3)

- If first Microsoft is broken into two companies according to type of program produced, and then the operating systems company is broken into three parts, creating five “baby Bills” (Litan et al.) there will be even worse consequences
- “Baby Bills” will have incentives to create *incompatible* versions of Windows
 - a. Baby Bills will try to differentiate their operating systems to avoid strong competition leading to small price-cost margins; this is true even in industries without network externalities
 - D’Aspremont et al. *Econometrica* (1979)
 - Economides, *EER* (1984)
 - Shaked and Sutton, *RES* (1982)
 - b. Baby Bills will try to make their operating systems incompatible with each other in a race to become the dominant OS, since the dominant firm receives the lion’s share of profits in a winner-takes-most world
 - Economides and Flyer (1997)
 - Economides (2000)
- This would inevitably reduce the range of software that would be compatible with each user’s computer; consumers’ surplus will decrease

PROBLEMS WITH BREAKUP REMEDIES (4)

- The hybrid breakup would be a huge headache for corporate IT departments
- Emerging incompatibilities would also hurt shareholders, since the combined value of the resulting Baby Bills will be smaller than that of the original Microsoft

OTHER POSSIBLE REMEDIES (1)

1. Impose various restrictions on the contracts that Microsoft can write with sellers of complementary goods and with competitors

- This remedy is easy to tailor according to the violation

2. Force Microsoft to disclose the APIs (definitions of the interface between the operating system and the application) that allow it to attach the Internet Explorer deep in the operating system

- Microsoft routinely discloses APIs that hook applications to the operating system and allow for interoperability
- Currently, Microsoft does not disclose the APIs that tie together parts of the Windows operating system, which includes Internet Explorer
- If the APIs that hook Internet Explorer to other parts of the operating system are disclosed, Netscape (and any other browser) can get the same interoperability with Windows as Internet Explorer
- Such disclosure would solve all technological bundling problems

3. Published price list with quantity discounts

OTHER POSSIBLE REMEDIES (2)

4. Regulation

- Regulation requires a stable product
- Regulation of AT&T did not occur until 35 years had passed after the invention of the telephone, despite the fact that
 1. Telecommunications had stronger externalities than software
 2. During its first 40 years AT&T took much more aggressive actions than Microsoft, including refusal to deal and refusal to interconnect

5. Imposition of compatibility on subsequent MS products such as compatibility of Windows 2000 with others' network servers, WSJ, 4/19/2000

[**Problem:** future products not part of litigation]

PREDICTIONS

- The appeals process goes into the next presidency
- Appeals court reverses tying decision
- Case is settled before the final decision but after a new president takes office
- MS is expected to have legal fees of up to \$6 billion; but biggest loss to MS is continuous antitrust scrutiny that does not allow it to make significant acquisitions in telecommunications and the Internet during the next two years

CONSEQUENCES FOR THE COMPUTER SECTOR

- A breakup is likely to impose the dark shadow of radical antitrust intervention on the whole computer industry
- In the computer sector there are many firms that have a dominant position in their respective markets
- If DOJ wins big on Microsoft, antitrust suits against AOL, Yahoo, and others will not be far behind