COMPUTERS

- Bases of IBM's Dominance
    - Customer Switching Costs
    - Scale Economies
        - Automation vs Job Shop
        - Economies in R&D
        - Economies of massed reserves (service)
    - "Bundling" of Repair Service with Hardware

- "Leapfrogging"
    - "First Mover Advantage"
    - "Leapfrog" and Preemptive Announcements

- "Fast Second" Strategy
    - The Disincentive to "cannibalize" markets

- Pricing Strategies
    - "Tying" cheap stripped models with high priced add-ons
    - Price discrimination
        - Counter to PCMs (plug compatible manufacturers)
    - Discounts on longer term leases

- Antitrust
    - Was IBM a predator?
        - Marginal cost or average variable cost
        - Intent
    - The short-run and long-run effects of monopoly price cutting
    - The Antitrust challenge (1969-1982)
        - Market definition? Broad or narrow?
        - Anticompetitive behaviour
            - Premature announcement of the System 360
            - Predatory pricing of the 360/91 machine
            - Bundling (hardware, software, service)
            - Manipulation of purchase-to-lease ratios
            - Education allowances (switching costs)
        - Case dropped in 1982: “without merit”

- Aftermath
    - The Microcomputer
        - Decline of the “mainframe” share
    - IBM’s loss of share in the “mainframe” business
    - IBM’s late entry to PCs
        - The deadly strategic error:
            - dependence on Microsoft for the O/S
            - dependence on Intel for the chips.

- The rise of Microsoft
    - US Antitrust challenges
        - Bundling (again)
    - EU challenges

Economics of Predation: What is it? Pricing to discipline rivals? Pricing to drive rivals from the market?

Issue #1, does it exist (is it a profitable strategy?)? Assumption is that post predation, predator can recoup losses and then some. How?

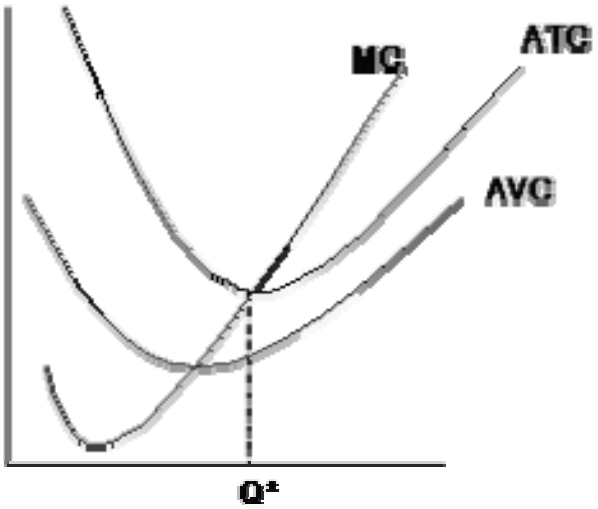
A. The long purse:

1. Problems
    a. Merger more profitable than predation (McGee and the S.O. story).
    b. Predator expands output at lower price, incurs larger and larger losses.
    c. Consumers are irrational
    d. Exit barriers must be low, but this usually means entry barriers are low, and this works against recoupment.
    e. Discounting works against profitability of predation.
    f. Argument based on assumption that predator has ample capital and the victim inadequate capital.
    g. With perfect information predation would never occur.
2. Counter arguments
    a. As horizontal merger becomes more difficult predation becomes more attractive.
    b. Predation could be used to create the failing firm defence.
    c. Asymmetric information between capital borrower (victim) and lenders.

B. Reputation

C. Limit pricing & signaling (but is this predation?).

Issue #2, how to identify predatory pricing?



A. Price-cost rules
   1. Areeda-Turner, for any Q<Q*, P < MC is predatory. Where Q>Q*, then P<ATC is predatory. But they observed that MC too difficult to identify.
      Modified Areeda-Turner: P<MC implies predation. MC hard to determine, so use AVC.
      a. AVC rule ok as long as MC relatively low slope.
      b. Are there non-predatory rationales for pricing at < AVC?
   2. Posner, predatory pricing is “pricing at a level calculated to exclude from the market an equally or more efficient competitor”.

B. Two-stage tests
    1. Joskow & Klevorick
        a. Is a predatory strategy likely to be profitable?
            - Is the alleged predator dominant?
            - Are entry barriers significant
            - Are exit barriers significant?
            - Is technological change insignificant?
            - If yes to above, go to 2nd stage.
        b. Is the price predatory?
            - Below AVC, yes.
            - Between AVC and ATC, firm must explain.
    2. Ordover & Willig,
        a. Is a predatory strategy likely to be profitable?
            - Are there entry “hurdles”
            - Are there re-entry barriers?
            - If yes to the above, move to 2nd stage.
        b. Is the pricing profitable for the perpetrator if it causes exit but unprofitable if it does not cause exit?
            - Recognizes price < MC can be profitable without predatory motivation.
                ◊ firm sells complements
                ◊ network industry
                ◊ rusting assets
C. The role of intent

Issue #3 Welfare Impacts

Economics of Tying (bundling)

A Definition:

B Rationales:

1 Extend market power from one product to another (aka, leveraging). But why?
- can correct the variable proportions problem.

2 Exploit market power: tying is convenient way to price discriminate

The cinema example ("block booking").

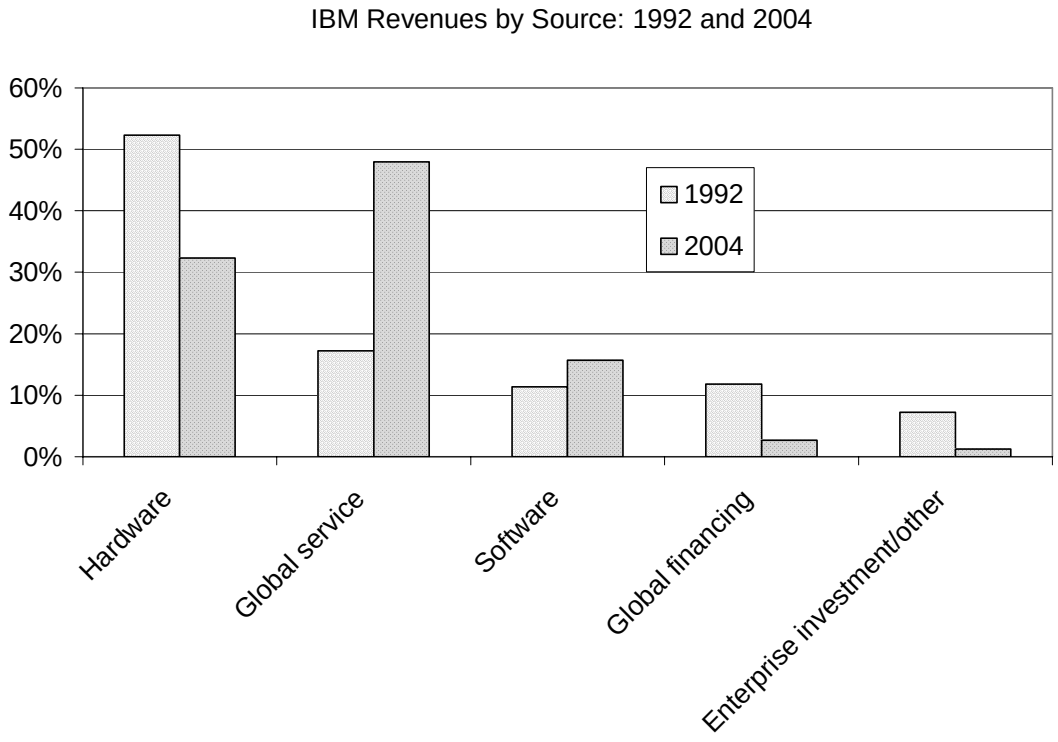
	Movie 1	Movie 2
Cineplex	$100	$70
Famous Players	$60	$80

Perfect price discrimination (100+70+60+80=$310).
One price for each movie (70+70+60+60=$260).
"Bundled" or block booking: $140 x 2 = $280.

3 Control quality of inputs

4 Economies of scale

Aftermath



Revenue Source	2004	Percent
Hardware		
Mainframes, chips, storage	17,916	19%
Personal systems[a]	12,794	13%
Global service	46,213	48%
Software	15,094	16%
Global financing	2,608	3%
Enterprise investment/other	1,224	1%

[a]The bulk of this division (PCs and laptops) was sold to Lenovo (China) Group in December 2004.

Top US patent award recipients
(2004)

	# of Patents	Rank 2003
IBM	3,248	1
Matsushita	1,934	4
Canon	1,805	2
HP	1,775	5
Micron Technology	1,760	6
Samsung	1,604	9
Intel	1,601	7
Hitachi	1,514	3
Toshiba	1,310	13
Sony	1,305	10

source: US Patent and Trademark Office

Microsoft

Market Share: Operating Systems
(2005)

	Share
Windows	89.8%
of which:	
Win XP	*64.9%*
Win 2000	*19.1%*
Win 98	*3.6%*
Win NT	*0.7%*
Win .NET	*1.5%*
Linux	3.5%
Mac	3.0%

(based on Internet use)

Browser Shares
(2002 and 2005)

	2002	2005
Microsoft IE	96.6%	86.6%
Netscape	2.1%	1.1%
Mozilla/Firefox		8.7%
Apple Safari		1.3%
Opera	0.4%	1.0%

source: www.OneStat.com