THE CONCENTRATION OF AMERICAN MEDIA INDUSTRIES

Eli Noam
Columbia University
TPRC Conference
Sept 2006
Draft

Abstract

The study tries to respond to a question of great current policy interest: have American media become more concentrated due to various M&As and shake-outs, or have then become 8
less concentrated due to Internet and other new types of media entry? The study analyzes 100 different media and information industries over a period of 20 years, and aggregates them for broad trends. It establishes a model to explain the trends. It also looks at local, vertical, and ownership concentration, and makes international comparisons. Finally, it proposes a new index for media concentration.

IS THE AMERICAN INFORMATION SECTOR BECOMING MORE CONCENTRATED?

1. A LOST GOLDEN AGE?

Recent years have witnessed the expansion of large media firms in the United States. This development led to fear that American communications media are increasingly controlled by an ever-shrinking number of firms, and that those firms are capable of affecting public opinion, democracy itself, the national agenda, and global culture.

Other countries, too, are watching closely, not only because of the global role of US communications firms, but also because US tendencies are often indicators of future developments elsewhere. Media concentration is an issue around the world. The debate has become the information-age version of the industrial-age struggle over the control of the means of production.

Three years ago, the FCC tried to lower ownership restrictions. The result was a political firestorm in which the political right and left joined forces against free market advocates and major media companies.

Part of the vehemence of the debate over media concentration lies in the self-image of its advocates on both sides. Opponents of the FCC's new

rules view themselves as engaged in a digital Thermopylae, a last line of defense against homogenized news controlled by five giant media conglomerates. They fear a situation like that of Italy, where Silvio Berlusconi used his media empire to achieve power and office. In contrast, defenders of the FCC see themselves as removing the shackles of the state. They argue that we are in the midst of a historic blossoming of information technology. Both sides project themselves as defenders of free speech, either protecting media from the heavy hand of government, or, alternatively, protecting diversity from being choked off by communications empires. Both sides are to some extent correct. But both sides cannot concede the validity of the perspective of the other, which they view, respectively, as the lackeys of corporate interests, or as luddites with tenure.

When it comes to concentration, views are strong, theories abound, but numbers are scarce. To some commentators, the sky has been falling for decades. Others, often from free-market Washington policy think tanks or from the libertarian Internet community, believe that market and technological forces are overcoming all barriers, that we are in the midst of a flowering of media and information, and that there is no problem except for heavy-footed bureaucrats trampling on those flowers.

Who is right? Are media becoming controlled by the few or open to

the many?

Despite much conventional wisdom and anecdotes, the answer to the question is not an obvious "yes." And despite the hand-waving of free marketeers, the answer is not an obvious "no", either.

OVERVIEW OF PAST RESEARCH

Let me first turn, skeptically, to the media pessimists, before turning, also skeptically, to the media optimists.[1] Perhaps the most influential book on the subject has been Ben Bagdikian's periodically updated, frequently cited, regularly assigned, and provocatively titled work, *The Media Monopoly*.[2] Bagdikian is a Pulitzer Prize winning journalist and former Dean of the Journalism School at Berkeley. In other words, he deserves to be taken seriously, and he is.

Bagdikian writes that "by the 1980s, the majority of all major American media – newspapers, magazines, radio, television, books, and movies – were controlled by fifty giant corporations.

In his newest book, *The New Media Monopoly* he concludes: "Five global-dimension firms, operating with many of the characteristics of a

[1] If I spend more time on the former it is because more of them are writing books.
[2] Bagdikian, Ben, *The New Media Monopoly*. Boston, Beacon Press, 2004, p. 3.

cartel, own most of the newspapers, magazines, book publishers, motion picture studios, and radio and television stations in the United States." [3] These firms are Time Warner, Viacom, Disney, News Corp., and Bertelsmann.

Bertelsmann is actually, by revenue, the number 13 media company in the U.S. Comcast, unmentioned, is four times larger. Bertelsmann's German TV or book revenues are not particularly relevant to Bagdikian's US analysis; but without including Bertelsmann in the top 5 list he could not argue control over book publishing. If we will accept his lineup, we find the following aggregate ownership of these 5 firms: of newspapers (counting revenues, not number of dailies, thereby helping Bagdikian's case)[4], these five firms own less than one percent (basically, the lagging *New York Post*)[5]; of magazines, 18.1%; of trade books and paperback books; of motion picture studios, 55%; of radio stations, 13.6%; of TV stations, 15.4%; of cable TV operators, 12.2%.

---

[3] Bagdikian, Ben. *The New Media Monopoly*, Beacon Press, Boston, 2004. p 3.

[4] Measuring market shares according to revenues rather than counting copies tends to give more weight to the largest market participants, since they usually can charge higher prices per copy or advertisement CPM, *ceteris paribus*. Physical measures, furthermore, cannot be readily used for inter-media aggregation and averaging. A similar comment can be made for "attention intensity" or "attention time." If we counted instead the actual number of outlets or readers/audience, or similar indices, the largest of firms would show a somewhat smaller share. The use of revenues is hence normally a worst-case scenario in terms of concentration levels. (If there are exceptions to this, I will be glad to incorporate them.) Another type of weight, for news media, would be to look at value as a news source. This is briefly done in the chapter on "National Horizontal Concentration" for illustrative purposes.

[5] Acquisitions are not a one-way street. The Walt Disney Company sold, in 1997, its newspapers to the Knight-Ridder chain (*The KansasCity Star*, the Fort *Worth Star-Telegram,* and two other papers.), for 1.65 billion.

The problem with Bagdikian is not his alarmism about media concentration or its extent—he makes good and thoughtful points**.** I**, too,** do not believe that economic efficiency should trump democratic concerns. But Bagdikian's numbers are tendentious.

Bagdikians's mantle has been assumed by Robert McChesney of the University of Illinois. McChesney has been an influential voice and activist. McChesney is much more careful with his numbers than Bagdikian. He observes that there are thousands of media firms in the United States. The issue therefore is not simply counting voices but considering their significance.

One can quibble with some of McChesney's data, but the question is to what purpose. McChesney makes economic points but his position is that economics do not matter anyway. Ultimately, the concentration argument for him is secondary and tactical. Even if markets functioned, McChesney writes forthrightly, "the problem with market regulation is not merely a matter of economic concentration – even competitive markets are problematic. Perhaps we should not even expect the market to be the appropriate regulator for the media system, or many components of it, because media presents many unique attributes that undermine the suitability

of market regulation."[6]

Bagdikian's more simplistic numbers have taken on a life of their own.[7] Celebrated film documentary maker Michael Moore picked the number five from Bagdikian and globalized it: "By the end of the millennium five men controlled the world's media."

Lawrence Lessig, the noted Stanford Law professor (and for a time my friendly co-columnist on new media at *Financial Times Online*), escalated the number: "Indeed, after the changes that the FCC announced in June 2003, most expect that within a few years, we will live in a world where just three companies control more than 85 percent of the media"[8]. He adds: "Today, in most markets, the two largest broadcasters control 74 percent of that market's revenues" (p. 162-3). (The actual market share of the top two firms is 47.9%.[9] This, of course, is still quite high, but less blatantly so.) Lessig continues: "While the number of channels has

---

[6] McChesney, Robert W. *The Problem of the Media: US Communication Politics in the 21st Century.* New York: Monthly Review Press, 2004. p. 175.

[7] Ben Bagdikian, *The New Media Monopoly*. Boston: Beacon Press, 2004. Cooper, Mark, *Media Ownership and Democracy in the Digital Information Age*. Stanford: Center for Internet and Society, Stanford University Law School, 2003. <http://cyberlaw.stanford.edu/blogs/cooper/archives/mediabooke.pdf>; Sunstein, Cass, *Republic.com.* Princeton: Princeton University Press, 2001; Chester, Jeffrey and Larson, Gary O. "A 12-Step Program for Media Democracy," *The Nation,* July 23, 2002. <http://www.thenation.com/doc.mhtml?i=20020805&s=larson20020723>; Leanza, Cheryl and Feld, Harold, "More Than 'a Toaster with Pictures': Defending Media Ownership Limits," *Communications Lawyer*, Fall 2003, pp. 12-22. <http://www.mediaaccess.org/ToasterFINAL.pdf>; Chomsky, Noam, *Media Control: The Spectacular Achievements of Propoganda.* New York: Seven Stories Press, 2nd Edition, 2002.

[8] Lessig, Lawrence, "Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity," The Penguin Press, 2004.

[9] Number is based on the aggregate C2 for the 30 local markets (see chapter on Local Concentration).

increased dramatically, the ownership of those channels has narrowed to an even smaller few…" (p.165) (Actually, the share of the top 5 firms in channel ownership, weighed by the revenues of these channels, has declined from 93.2% in 1984, to 81.3% in 1996, 77.1% in 2001, and 68.4 in 2005. (If we only counted the number of channels rather than their revenues, these shares would be significantly smaller, and further undermine Lessig's point. For sure, 68% is a high and troubling percentage. But Lessig's alleges a trend opposite from the one observable, and hence a growing problem.)

By 2006, Lessig escalated further. Interviewed on the documentary movie "This Film Is Not Yet Rated," he finds or predicts that "by the time it's completed we have three, maybe two, companies that essentially own access to culture."

We now turn to the views of the media optimists, who see an abundance of openness and diversity. Most of it is libertarian or free market in orientation[10]. **(**We ignore the self-interested perspectives of companies and trade associations.**)**

Perhaps the most comprehensive expression of the optimist view is Adam Thierer's "Media Myths: Making Sense of the Debate over Media

[10] It is not widespread in academia. One graduate student at another university wrote about the author after his hopefully balanced presentation: "Most interesting to me was the idea that there is even a school of thought that disagrees with the alarmist view towards media concentration.

Ownership"[11] (2004). Thierer, a well-known economist with the Cato Institute in Washington, dismisses media reformers. "what, then, explains the unusual passion they have exhibited during this debate? … It is the field of psychology, not law or economics, where the best explanation for such 'media madness' can be found" (p. 14). And he concludes: "To the extent that there was ever a "Golden Age" of media in America, we are living in it today. The media sky has never been brighter and is getting brighter with each passing year. And this is most definitely not a case of looking for silver linings around the clouds; *there are no clouds*."

Thierer, however, is stronger in challenging his opponents' absence of data than in providing his own. What he cites are those of others, (including some by the author) with their strengths and weaknesses. Like his opponents, he walks his cat back from a conclusion to helpful facts. He therefore needs not confront the limits of a sanguine statement such as "In such an age of abundance and hyper-choice, the question of who owns what or how much they own is utterly irrelevant." (p. 70)

As we can see, much of the literature on media concentration has been stronger in commitment than in empirical evidence, richer in certitude than

[11] Thierer, Adam D. "Media Myths. Making Sense of the Debate Over Media Ownership," Cato Institute, forthcoming

in research on both sides. But there have been a few such studies[12]. Perhaps the comprehensive data effort to data has been the volume *Who Owns the Media?*[13] [14]

INTERNATIONAL DIMENSIONS

Media concentration is not just an American issue. Because of the debate, well-informed people around the world see it as singular.[15] Therefore, it might be useful to put the US situation in perspective. We report the findings of others**'** research on Europe, and add the comparable US and Japanese numbers.

Table 1: Newspaper and TV Network Concentration: Europe, Japan, and US

	Circulation share of the top 3 newspaper companies (C3) in 2001[16]	TV Networks HHI Concentration[17]

[12] Earlier, Harvey Levin authored an empirical study of media concentration, measuring cross-ownership ties between broadcasters, publishers, and the film industry in the 1950s and before. Levin's thoughtful discussion remains relevant to this day. Levin, Harvey *Fact and Fancy in Television Regulation: an Economic Study of Policy Alternatives* Russell Sage Foundation, New York, 1980.

[13] Compaine, Benjamin; Sterling, Christopher; Guback, Thomas; and Noble, J. Kendrick, Jr, *Who Owns the Media?* White Plains: Knowledge Industry, 1979, 1982.

[14] The books cover several major mass media industries. Trends of concentration are discussed mostly seriatim by medium. This was likely an outgrowth of the fact that the study's sections on different industries are divided among and credited separately to the co-authors. It is therefore not clear if a chapter speaks for both of the book's authors.
Compaine, Benjamin M. and Gomery, Douglas, *Who Owns the Media?Competition and Concentration in the Mass Media Industry*, Third Edition, Lawrence Erlbaum Associates, Inc., NJ, 2000

[15] Halimi, Serge, Editorial Board Member of *Le Monde Diplomatique*; "United States: an Unfree Press", Le Monde Diplomatique, June 2003; *The Guardian* "US Media Monopoly Dangers Raise More Concern. One US, One Market, One Media Mogul", UK, 05/17/03

[16] Source for Europe: Albarran, Alan B. & Mierzejewska Bozena I. "Media Concentration in the U.S. and European Union: A Comparative Analysis," presented at *6th World Media Economics Conference* (2004).

Finland	46	3,605
Netherlands	88	2,549
Sweden	85	2,834
UK	60	2,550
France	41	2,054
Ireland	66	2,347
Germany	35	3,140
Italy	43	4,081
Spain	53	2,207
Japan	45	**2,116**
United States	20	2,164

These numbers show US concentrations to be at the low end of the spectrum.[18]

THE DYNAMICS OF MEDIA CONCENTRATION

1. THE MODEL

The overall trend of media concentration is the composite of three separate dynamics that overlay each other. The three forces are:

1. The growth in *economies of scale* in information sector operations.
2. The lowering of *entry barriers.*
3. *Digital convergence.*

Source for Japan: Japan Media Review, accessed at http://www.japanmediareview.com/Japan/wiki/Shimbunwiki/.

[17] **Does not include cable and DBS channels.** Source for US: Chapter [ ] of this book. Source for Europe TV: Alfonso Sánchez-Tabernero, "Competition between Public Service and Commercial Telcision Broadcasting in the European Market," presented at *6th World Media Economics Conference*, *Centre d' etudes sure les médias and Journal of Media Economics*, HEC Montréal, Montréal, Canada, May 12-15, 2004. Source for US TV: Table 5 in Chapter [ ] in this book, using intermediate point between 2001 and 2005 data for 2003. Data source for Japan: **InfoCom Research, Inc.: Information & Communications in Japan 2006; NHK: Annual Report, 2006. By Kiyoshi Nakamura.**

[18] **One could argue that a few national newspapers provide more diversity than many locally monopolistic ones. But one would then have to accept the same argument for local TV stations, where it would militate against localism in favor of national networks.**

Together they result in certain concentration patterns. The first two lead to an oscillation of concentration, with an upward trend. The third factor leads the concentration trend mass media to converge to that of the overall information sector.

First, economies of scale. Digital technology shifted the ratio of fixed cost of investment and the variable costs of serving people. The incremental costs are very low in a digital environment, and the average costs therefore keep dropping. This translates into growing economies of scale. There is a relation between the equilibrium market structure (i.e., of market concentration) and the economies of scale of an industry. Where the latter are high, an industry is likely to consist of a few firms only. An example is the automobile industry. Where economies of scale are low, there will be many providers, such as in the case of auto repair shops. What electronic technology has been doing is to change scale economies. The incremental costs for operating a broadband network of producing semiconductors, or consumer electronic devices, of distributing software program, video games, daily newspaper, or new recording has declined. On the internet, incremental costs are typically miniscule.

Information products are characterized by high fixed costs and low marginal costs. They are expensive to produce, but cheap to reproduce and

distribute. Technology keeps making reproduction and distribution cheaper, while the greater choosiness of users and the slower technical progress in information creation makes it often more expensive. The cost characteristics mean substantial economies of scale, and incentives for each competitor to expand in order to gain them. A related kind of size benefits are "network effects." Users of networks (and often of content) often benefit from the presence of other participants. They can reach more people, and share in common experience with friends, colleagues and neighbors. This, too, creates advantages to size, on the demand side.

The second economic trend in many media and information industries are *lower entry barriers.* Electronic technology, in particular, makes it easier to produce content—magazines, music recordings, film, etc. Wireless technology enables the entry of new networks and applications by smaller firms. Computers and IT hardware can be designed by small or smaller firms. The digital revolution has led to dropping hardware costs, exemplified by Moore's Law with its exponential cost declines. Many products can be put together from off-the-shelf hardware and software components; or outsourced to specialists. This makes it unnecessary to develop many aspects of a product in-house.

One reason for lower barriers is a more rapid pace of innovation. This

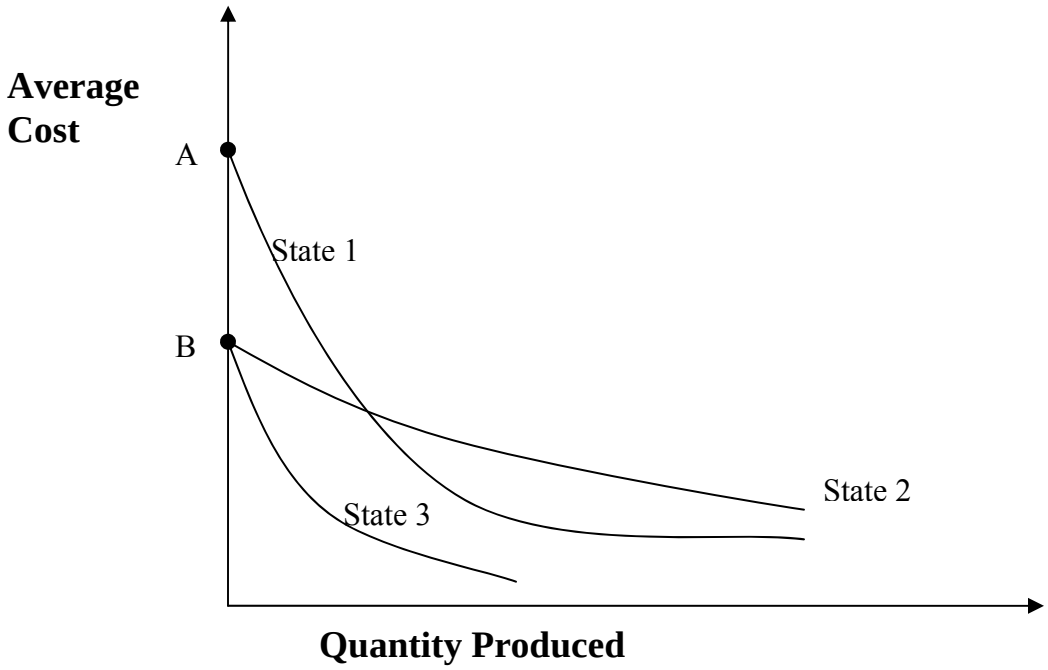
provides openings to new and nimble companies that can leapfrog slower established firms.

Another reason are legal/governmental restrictions. Liberalization policies have made it easier for new participants to enter than in the past, where monopoly franchises or limited spectrum allocations protected incumbents. There are still remnants of protections but less than in the past. Similarly, there has been a lowering of trade barriers restricting international entry.

It is easy to confuse entry barriers with economies of scale. The two are related but different. It may be easier to enter than before in terms of upfront investment or legal restrictions, but that does not mean an absence of efficiencies associated with larger operations in production. It is easier to start a phone company, a magazine, or an independent film company than it used to be, but it is not necessarily easier to contest a larger firm. The technology or innovation that makes entry easier is also usually available to all, including established firms, unless it is proprietary and rare.

This can be seen in Graph 1, which presents two states of an industry. The Graph shows the cost unit of a product for each quantity produced. The barrier to entry is the distance on the vertical axis for the first unit of production. In State 1, this cost is A, while in State 2 this cost is lower, at B.

GRAPH 1 ECONOMIES OF SCALE AND ENTRY BARRIERS



Economies of scale, in contrast, are reflected by the *slope* of the cost lines. That slope depends on the incremental costs of production. If the incremental costs are low, the slope is steep, as it is in the case in State A. In contrast, State 2 has relatively small scale economies. (Of course, State 2 could also have low entry barriers as well as high economies of scale, resulting in State 3. The Graph merely illustrates the difference of the two concepts.)

Applied to the debate over media concentration, one can characterize,

perhaps, somewhat simplistically, those who believe in wide-open media—the media-optimists—as focusing on the entry barriers and concluding that entry has become easy and plentiful. They are correct. In contrast, media pessimists are focused on the economies of scale, and they observe ever-growing media firms. They are correct, too.

It is necessary to look at both elements, on entry barriers and on scale economies. If one does so, a dynamic scenario unfolds. Scale economies and entry barriers can rise or decline. Where they move in the same direction, the impact on concentration is, ceteris paribus, generally unambiguous. See Table 2.

Table 2: Concentration Trend: Impact of Scale Economies and Entry Barriers

		Scale Economies	
		Rising	**Declining**
Entry Barriers	**Rising**	*Higher Concentration*	*Inverted-U Concentration Trend*
	Decli-ning	*U-shaped Concentration Trend*	*Lower Concentration*

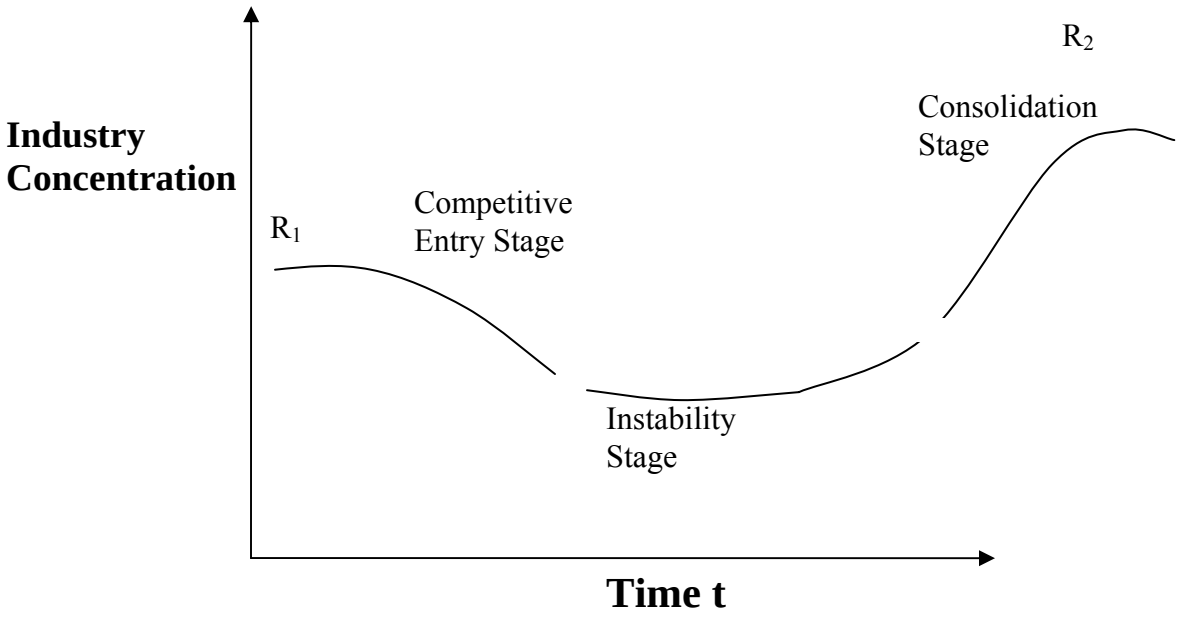
For example, if entry barriers drop while scale economies decline, there will be more firms contesting the market, while the optimal size of viable firms declines. Together, these two factors will lead to more surviving firms, and to a lower market concentration. The opposite case is where both scale economies and entry barriers rise. Now, there will be fewer firms contesting and fewer firms surviving: more concentration[19]. The ambiguous situations are those in which the two factors move in opposite directions. Where entry barriers rise while scale economies drop, the result is an initial decrease of contestants (higher concentration) but an eventual survival of more (lower concentration), resulting in an inverted U-shaped concentration trend. And where entry barriers drop while scale economies rise, the opposite is the case: there will be initially more contestants (lower concentration) but eventually fewer survivors. The (higher concentration) trend is U-shaped. The trend of the two factors in recent decades has been just that – towards lower entry barriers, and to higher scale economies. It is therefore not surprising to observe the U-shaped concentration pattern through many industries of the information sector.

Let us assume that a stable industry, which has been based on certain

[19] **Would the increased scale economies lead to a greater dominance of the top firm? Not necessarily. More likely is that they will help a small group of firms that are large enough to benefit from the scale.**

economic characteristics, experiences a simultaneous change of lower entry barriers and higher scale economies. The adjustment to a new equilibrium takes several stages, which are depicted in Graph 3.

GRAPH 3: CYCLES OF CONCENTRATION



Stage 1: *Competitive entry.* Lower entry barriers cause new participants to enter; the lower early costs enable them to compete. The concentration of the industry drops.

Stage 2: *Instability.* In a competitive environment, companies contest each other in prices and features. The features lead to higher cost; but it is

price competition that is the real destabilizing factor. In competition, prices tend to be set at marginal cost (long term). For information products and services, this marginal cost is near zero. But at that level, prices are too lower to cover the early (fixed) costs. If such prices persist, companies fail, industries are in crisis, and new entry slows. There are many recent examples for this in the information sector.

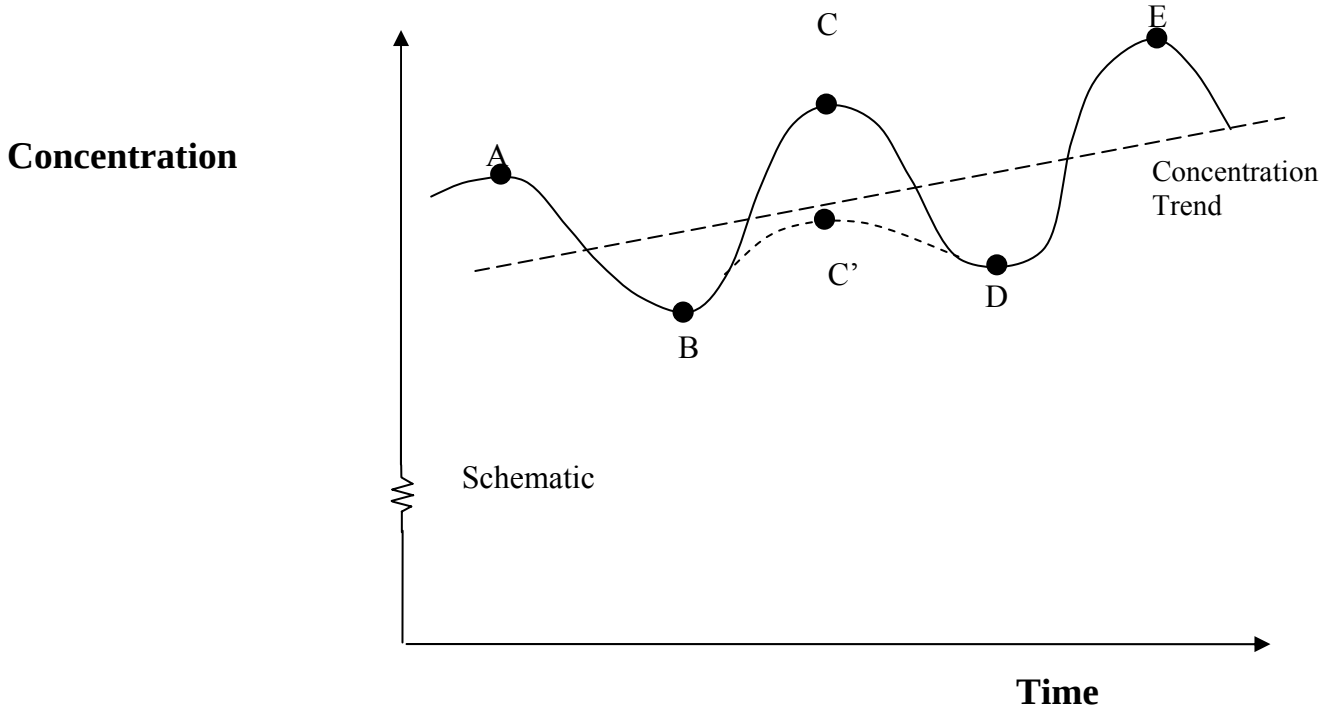
Stage 3: *Consolidation.* Eventually, as some competitors fail, others consolidate and the industry re-concentrates. Prices rise again and profits return. This attracts again new entrants, and a new cycle begins.

This would describe a cyclical concentration trend of up-and-down. However, this is not quite the end of the story. Even within the cycles there can be a trend. This trend is based on the economies of scale. When these economies grow, they lead to relatively larger firms within an industry, i.e., to a higher concentration level. This can be seen in Graph 4.

Graph 4 shows schematically the oscillations in concentration that one could expect in an environment in which entry barriers steadily decline, while economies of scale steadily rise.

GRAPH 4: CONCENTRATION TRENDS, WITH CONTINUOUSLY RISING SCALE

ECONOMIES AND DECLINING ENTRY BARRIERS



Let us begin with an initial Point A. Entry barriers are fairly high, and scale economies intermediate. This defines a highly concentrated industry. Now suppose that barriers drop while scale economies rise: the industry will go through the down-up trend described above, bottoming out at B, rising to C. In that range, competitive entry becomes viable again, and another cycle begins. Point C will be at a higher concentration if scale economies are rising. It could be at C^I (lower) if the impact of economies of scale is less than that of entry barriers, leading to an earlier competitive entry.

The trend of scale economies raises the trend of the peaks of the cycles and hence the overall trends of concentration around which fluctuations take

place. On the other hand, the trend of lower entry barriers leads to more frequent challenges to any equilibrium, and to greater instability. It affects the timing of swings of the instability (frequency) and the magnitude of oscillation (amplitude). Entry barriers affect the *frequency* and *amplitude*[20] of the changes in concentration, while economies of scale determine the axis around which they oscillate.

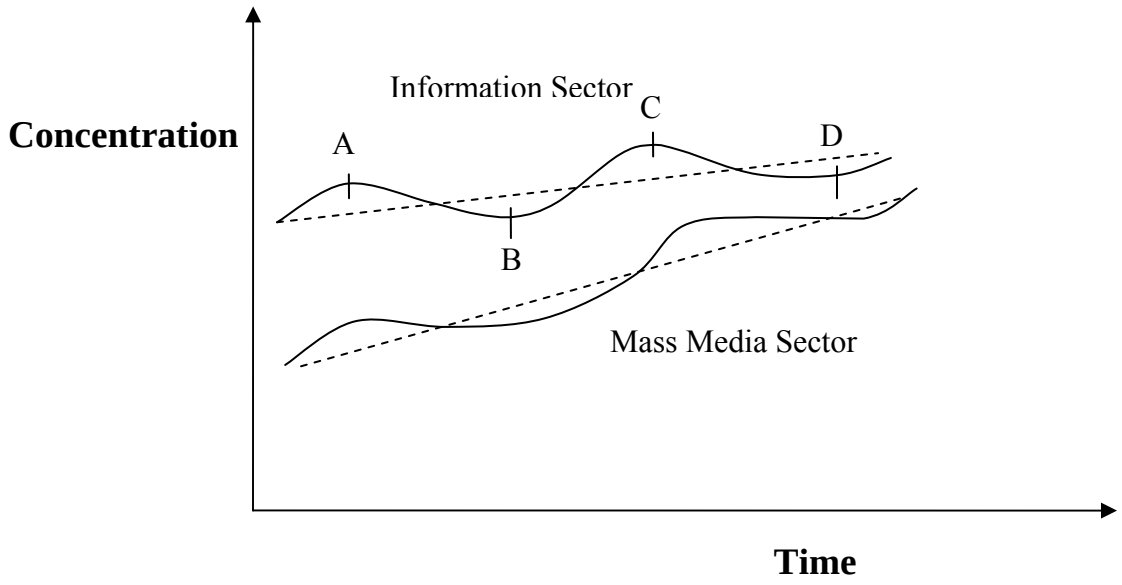
This results in a concentration trend that is fluctuating but rising. If the economies of scale were to shift, maybe due to technology, the trend would reverse itself. The model can accommodate different combinations of scale economies and entry barriers.

This model can explain the tendencies of the media and information sector in recent years. And what about its sub-sector, the Mass Media industries such as print, music, TV, film, etc.? Here, an additional factor comes into play – digital convergence. In the past, media were distinct from telecom networks, consumer electronics, computer hardware and software. Their economic characteristics were different, and hence their industry structure. Not any longer. As was discussed, in an increasingly electronic and digital environment, mass media assume many of the technical elements of networks and technology industries and with them also fundamental

[20] Amplitude will depend on the change in entry barriers; frequency on the rate of change.

economic characteristics of the information sector generally – low marginal costs; high fixed costs; lowering entry barriers. Hence, the concentration trends of mass media converge with that of the rest of the information sector. This can be shown schematically in Graph 5.

GRAPH 5: CONVERGENCE OF CONCENTRATION OF OVERALL INFORMATION SECTOR AND MASS MEDIA SECTOR



This convergence tendency suggests then that the mass media sector, from a relatively low level of concentration, will move to a higher level that is more similar to that of the overall information sector. This will create a steeper axis for the oscillations of this sector underrating down-phases and strengthening the up-phases in the process of convergence.

SEEKING THE ANSWERS

To provide an empirical answer, we have consciously adopted a methodology that is straightforward, simple, and transparent. More complex econometric models are possible—the data would easily support them—but this would then raise the question how much a model specification would affect the results.

The study defines and tracks the major firms in 100 separate industries which together comprise the information sector. The geographical market definition is national, i.e., the United States of America. A global market definition would be misleading, since a company could have a big share in America but not globally, or vice versa. This means that we exclude non-US revenues of US firms, and we include the US-market revenues of non-American firms. This approach, though laborious, seems more appropriate than letting the vast global income of companies such as IBM or Sony distort the US picture.

Table 3: The Industries Analyzed

Information Sector

Mass Media

PRINT & PUBLISHING
Daily Newspapers
Books
Educational Books
Trade and Paperback
Other Books

Book Retailing
Book Stores
Online Book Retailing
Magazines
Academic Journals
Local Magazines
Online Information Services
Printing Services

ELECTRONIC LOCAL DISTRIBUTION
Radio Stations
TV Stations
Cable TV Operators
DBS Providers

PROGRAMMING NETWORKS
Radio Networks
TV Networks
Syndication
Cable TV Channels
Pay TV Channels

MUSIC
Performance Rights
Music Publishing
Music Production and Distribution
Music Retailing
Music Stores
Online Music Retailing
Music Cable Channels

FILM
Production
Movie Production/Distrib
TV Prime Time Production
Retail Distribution
Theater Exhibition
Home Video Distribution
Video Rental

IT

IT HARDWARE
Media Consumer Electronics
TV Sets
Home Video Equipment
Camcorders
Set Top Boxes
DBS receivers
CD and MP3
Audio Systems
AM/FM Radios
VCRs
DVDs
PVRs

Semiconductors
Memory
Processors
CISC Microprocessors
RISC Microprocessors
Microcontrollers

Computers
Supercomputers
Mainframe Computers
Midrange Computers
Workstations
Microcomputers
PDAs
Video Game Consoles

Peripherals and Storage
Storage Devices
Disk Drives
Hard Drives
Optical Storage
Printers
Copiers
Modems
Cable Modems
DSL Equipment

COMPUTER SOFTWARE
Operating Software
Network Operating Software
Enterprise Application Software
Mainframe Software
Consumer Applications Software
Software Services
PC Entertainment Software
Games Software

Telecommunications

TELECOM SERVICES
Local Service
Long Distance
Private Line/Business

International
International Voice
International Telex
Telegraph
International Private Line Circuits
Wireless Service
Cellular/PCS
Radio Dispatch
Paging

EQUIPMENT
Consumer Equipment
Corded Handsets
Cordless Handsets
Fax Machines
Mobile Handsets
PBXs

Network Equipment
Internetworking Equipment
Routers
LAN Switches
Central Office Switches
Multiplexers
Fiber Optical Cables
Copper Wire & Coax Cable
Microwave Equipment
Cellular Infrastructure

Internet

Backbones
ISPs
Broadband Providers
Portals
Browser Software
Internet Search Engines
IP Telephony
Media Player Software

This is a long list indeed, and it requires explanations. First, why so many industries? When people talk about media concentration, they tend to focus on a few examples, often picked based on their point of view. Those fearing media concentration are likely to point to radio. Similarly, those believing in the existence of media diversity are likely to emphasize the Internet. At any given time, some media will concentrate while others will diversify. The only meaningful way is not to pick and choose examples, but to look across the broad sweep of media. Of course, specific problems should not be submerged in a big average, and we therefore also analyze and discuss the data for specific industries as well as for broader sub-categories of industries.

MEASURES OF CONCENTRATION

One traditional way to measure concentration is to combine the market share of the top four firms ("C4 ratios") for an industry. A C4 ratio is defined by the aggregate total of market share percentage of the four largest companies within an industry. It is given by:

$$C4_j = \sum_i^4 s_{ij}$$

Where: S_i = firm's *i* market share of a given industry *j* and where firms

are ordered by size of market share.

The concentration trends of individual industries' concentration trends are important by themselves. Each industry experiences specific developments and transactions that create particular trends. Thus, the concentration in newspapers and academic journals might rise, while that of magazines declines and that of books remains stable. To get the big picture then, it is important to look at trends for larger media categories, in this case that of "Print Publishing", which is a weighted aggregate of the several industries that comprise the print sector. Accordingly, we aggregate the individual industries along the dimensions of industry segments and broader sectoral categories. Such measures aggregate the various industries, with weights based on size in terms of revenues. The weighted average HHI is defined as:

$$\text{HHI}_{\text{W}} = \sum_{j=1}^{n} \frac{m_j}{\sum m_j} \sum_{i=1}^{f} S_{ij}^2$$

Where j = an industry

m_j = total revenue of an industry

S_{ij} = firm i's market share of an industry j

n = number of industries

f = number of firms in an industry.

A similar approach to aggregations is also used for the industry-specific C4 indices. The weighted aggregate C4 is

$$C4_w = \sum_{j=1}^{n} \frac{m_j}{\sum m_j} \sum_{i=1}^{4} S_{ij}$$

Where j = a industry *j* within a larger segment

m_j =total revenue of an industry *j*.

S_i = market share of firm in a given industry

i = firm in an industry

n = number of industries

In addition to the more traditional measures of horizontal concentration, we also developed a series of indices to measure trends in vertical integration, with an eye toward providing a rough proxy of each firm's power in the overall information sector.

After extensive use of the various forms of concentration indices, I have come to appreciate the robustness of both the HHI and C4 in tracking trends over time, when used in a consistent manner, and it is here that their primary usefulness lies. But I have experienced the limitations of each. I will therefore propose a different "Media Ownership and Diversity Index"

(MOCDI) later in this study.

FINDINGS

1. THE OVERALL INFORMATION SECTOR

We begin with the final averaging across all 100 information sector industries, and across the 27 mass media industries we have investigated. Graph 1 and Table 1 below show several findings for the overall information sector.

1. The overall concentration of the information sector declined in terms of the weighted average HHI trend in 100 industries. It fell, from 2,108 to 1,631, but varied considerably over that period. Before 1984, overall concentration was high (weighted average for 1983 was HHI=3,660, much of it due to AT&T.) Then, between 1984 and 1992, aggregate concentration declined fairly sharply, with new entry due to lower legal, technological, and economic entry barriers. After 1996, concentration rose pronouncedly when companies aggressively sought market share, i.e., scale economies and network effects, as competitive advantage. After 2001, concentration declined again somewhat as industries stabilized.

GRAPH 1: INFORMATION INDUSTRY TOTAL 1983– 2005

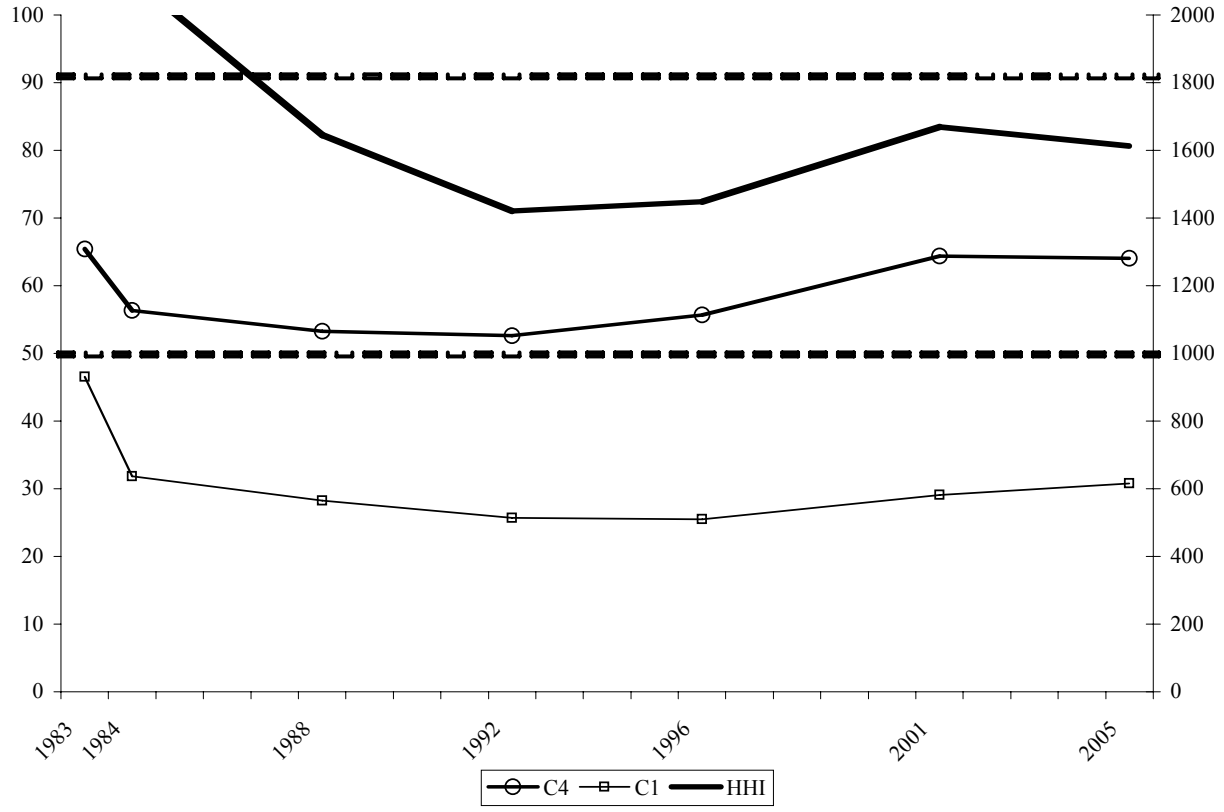


TABLE 1: OVERALL INFORMATION SECTOR INDUSTRIES WEIGHTED AVERAGE CONCENTRATION 1983 – 2005

	1983	1984	1988	1992	1996	2001	2005
HHI	3660	2108	1645	1421	1448	1670	1631
C4	65.4	56.3	53.3	52.6	55.7	64.4	64.1
C1	46.5	31.8	28.2	25.7	25.5	29.1	30.8

Thus, the average weighted HHI, our primary measure of sectoral concentration, was in 2005 lower than it was in 1984[21] by a good amount

[21] To avoid a distortion in the comparisons, we used 1984 as the baseline year. Had we started in 1983 or earlier, the huge AT&T would have been reflected in a much greater overall concentration. For 1983, the HHI would have been 3,660 and the C4 65.4%, both above the 2005 figures.

(from 2,108 down to 1,613). But it was higher in 2005 than it had been between 1992 and 1996, when it was about 1,400. Soon after 1984, the information sector as a whole moved into the range of concentration defined by the US Justice Department as "moderately concentrated," and, with zigs and zags, remained there. Did concentration rise? *No*, if the baseline year is 1984 or earlier. *Yes*, if the baseline year instead is 1992.

2. The C4 index (the average share of the top 4 firms in each industry), followed a similar U-pattern. It first declined from 56.3 in 1984 to 52.4 in 1992, then went up again to 64.4% in 2001, and slightly declined thereafter. By that measure, overall concentration rose over the 20 years. This, together with the declining HHI, would indicate that single-firm control lagged and led to an overall lower HHI, while the ownership by the next tier of 2-3 firms increased on average.

3. And indeed, as the C1 line shows in Graph 1, the market share of the top company (the C1) also shows slight U-shape, though it is on the whole stable at about 30%.

2. THE FOUR SUB-SECTORS OF THE INFORMATION SECTOR

We can compare the four major sub-sectors of the information sector: Mass Media, Telecommunications, IT, and Internet.

GRAPH 2: CONCENTRATION TRENDS SUB-SECTORS (HHI)

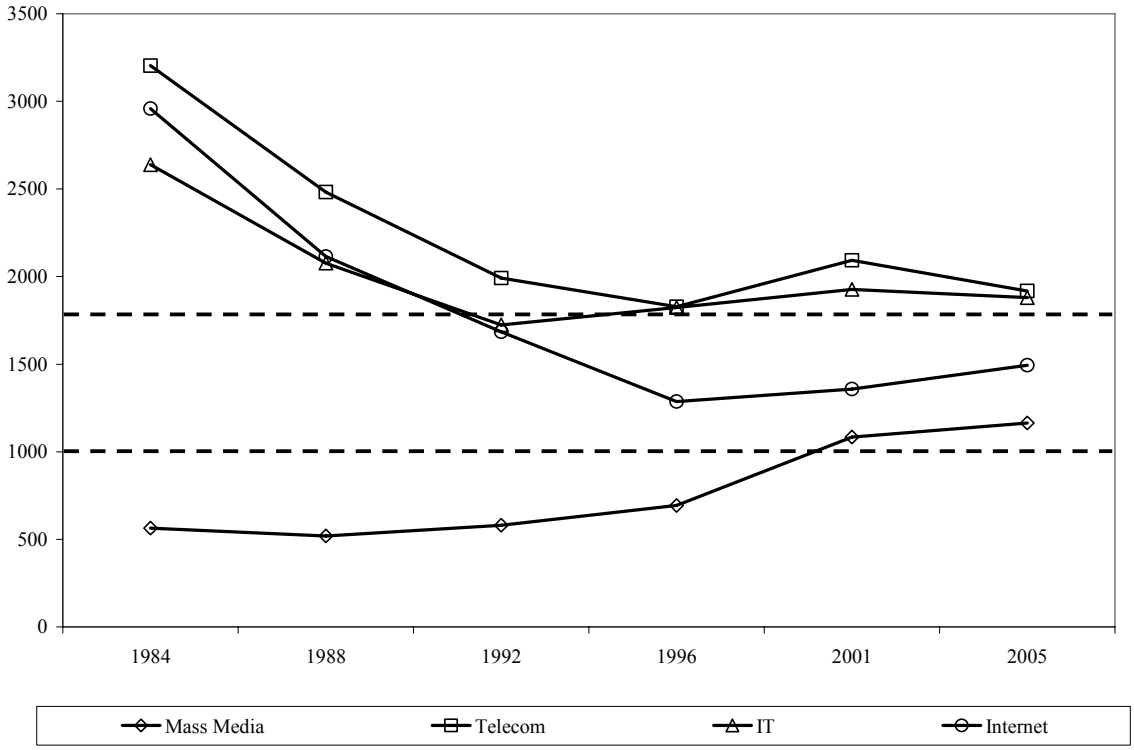


TABLE 2: SUB-SECTORS (WEIGHTED AVERAGE HHI)

	1984	1988	1992	1996	2001	2005
Mass Media	564	520	580	693	1084	1165
Telecom	3204	2482	1992	1828	2093	1917
IT	2638	2077	1724	1823	1926	1879
Internet	2959	2114	1685	1287	1357	1494

1. The Internet, Telecommunications, and IT sectors show a U-shaped trend line. For Telecom and IT, it is at a quite high level, around 1,900. For the Internet sector, it is in the intermediate range, around 1,500. In distinct

contrast, the Mass Media sector followed an S-shaped pattern, increasing in concentration steadily after 1988 and especially from 1996-2001. However, it remained lower in concentration than the other three sectors, and moderately concentrated by the standards of the US Government's Antitrust Merger Guidelines, at an HHI of 1,165.

2. The concentration in Telecommunications is higher once we consider the overall telecom services sector. In such a pooled sector, HHI concentration plummets with the AT&T divesture in 1984 from 8,248 to 2,100. It keeps dropping steadily until 1996 when it almost reaches the unconcentrated level at 1,058. (This is nationally; locally it is a different story, see the local findings below.) Thereafter, concentration rises again to almost 2,100 in 2005.

3. Concentration in Mass Media has steadily come closer to the concentration levels prevailing in the rest of the information sector. Whereas in 1984 Mass Media HHI concentration was only one quarter (27%) of that of the overall information sector, it was 71% in 2005.

TABLE 3: TOTAL REVENUES OF U.S. INFORMATION SECTOR (IN $ BIL)

(bil $)	1984	1988	1992	1996	2001	2005
Mass Media	113	153	184	246	340	385
Telecom	121	148	196	269	343	361
IT	76	105	130	180	232	258

Internet	0	2	3	7	43	56
Total	310	408	513	702	958	1,060
In 2005 dollars	574	662	695	852	1,039	1,060

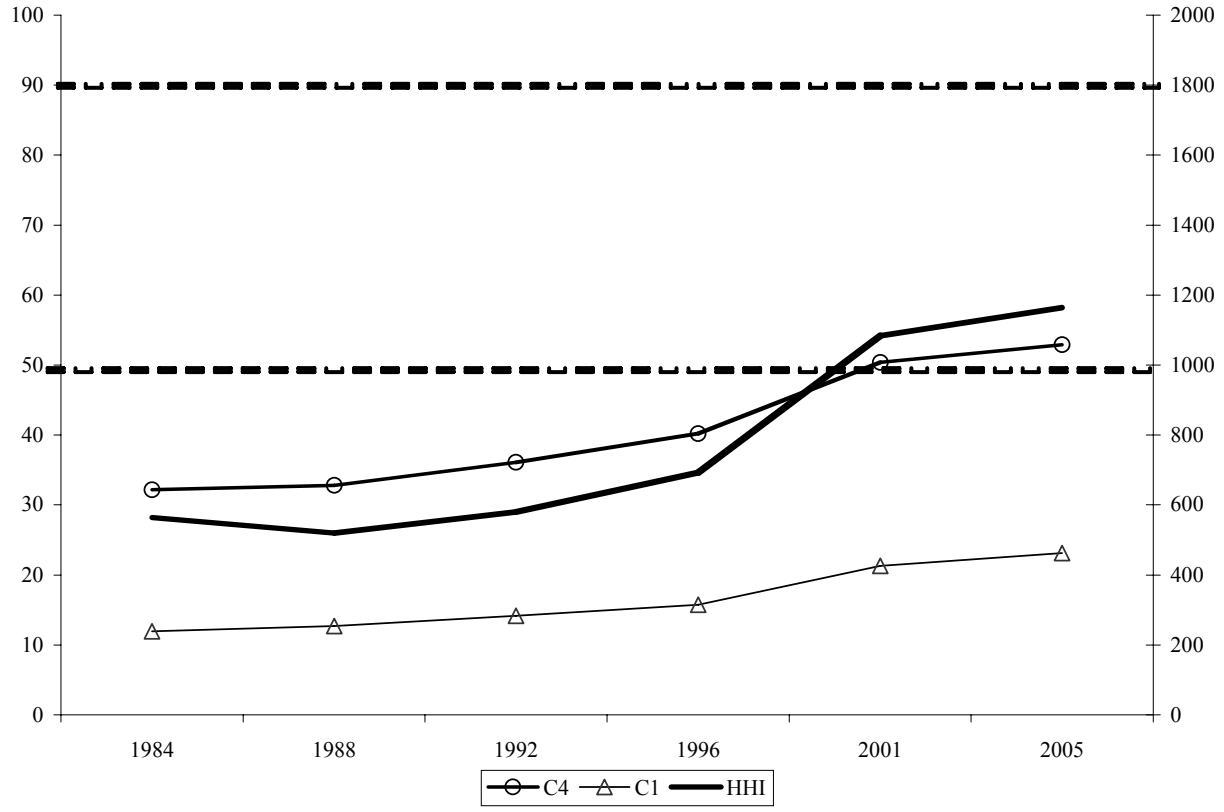
TABLE 4: MASS MEDIA SECTOR CONCENTRATION 1984 – 2005

	1984	1988	1992	1996	2001	2005
HHI	564	520	580	683	1081	1160
C4	32.2	32.8	36.1	40.2	50.4	52.9
C1	11.9	12.7	14.2	15.8	21.3	23.1

3. MASS MEDIA

Graph 3 shows the overall concentration trends for the Mass Media sector, which includes print, music, film, TV, radio, cable, DBS, etc.

GRAPH 3: MASS MEDIA INDUSTRY TOTAL 1984– 2005



1. For Mass Media, the concentration trend is not U-shaped but S-shaped. The average (weighted) HHI concentration of Mass Media as a whole was fairly flat in the 1980s, having first even declined a bit. It rose after 1993, and slowed after 2001. The C4 index shows a similar trend than the HHI. Whereas the top 4 firms accounted in 1984 for one third of an average mass media industry, it was about one half in 2005.

2. The average share of the leading company in a media industry rose from about 12% to 23%.

3. The average industry concentration, even after the steady rise subsequent to 1988, is well in the lower end of the range defined by the US Justice Department as "moderately concentrated." The weighted average HHI in 2004 stood at 1160. But in 1988, it had been at 520, well inside the "unconcentrated" range.

4. Together with the requirement that all shares must add to 100%, the C1, C4, and HHI describe a typical market structure within a fairly well-defined band. It would be, approximately,

Top firm: 23%

3 firms, each 10%

9 firms, each 5%

Small firms, totaling 2%

If firm 2 is larger than 10%, then mathematically firms 3 and 4 would have to be correspondingly smaller, and the third tier would consist of smaller but more numerous firms. (Example: 1 x 23%, 1 x 16%, 2 x 7%, 10 x 4.5%). These firms need not be the same for different media industries, though some of them extend their activities widely (see below).

In most non-media industries, these would not be considered high levels of concentration. But one can also put it differently, that in the average media industry, 10 firms control most of what we read, watch, or

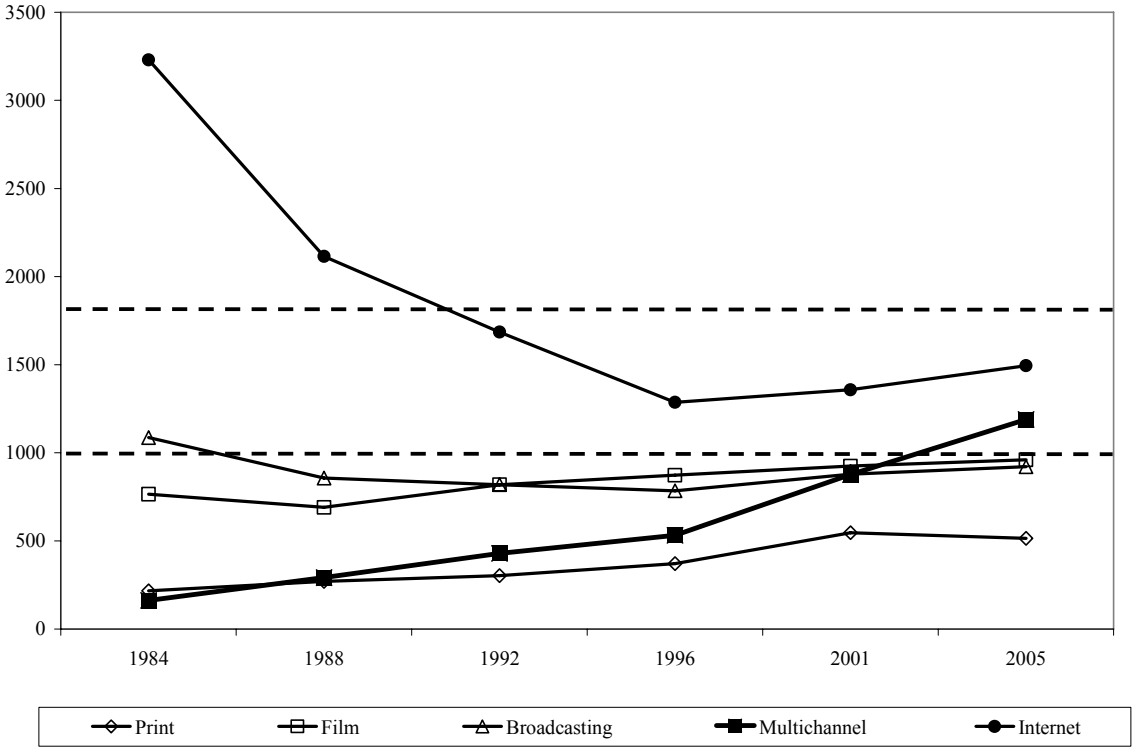
buy. One must understand, though, that these are not always the same ten firms. The share of the top ten firms in the overall media sector is 36%, much lower than for an average industry where this share would be accounted for by the top two firms alone.

5. Thus, mass media have indeed been concentrating, but their average level of concentration is not in the range that would normally raise antitrust action if encountered in other industries. Hence, if one seeks a systematic deconcentration of media below the one prevailing in 2005, the general antitrust process is not likely to work.

Within **the** Mass Media sector we can look at the several media sub-sectors: Graph 3 shows the national concentration trends for several categories of media: Print[22]; Film[23]; Broadcasting[24]; Multichannel TV[25]; and the Internet.[26]

[22] "Print" includes: Daily Newspapers, Educational Books, Trade and Paperback Books, Other Books, Book Retailing, Magazines, and Academic Journals.
[23] "Film" includes: Movie Production/Distribution, TV Prime Time, and Movie Theaters.
[24] "Broadcasting" includes: TV Prime Time Production, Radio Stations, TV Stations, Radio Networks, TV Networks, and TV Syndication.
[25] "Multichannel TV" includes: Home Video, Video Rental, DBS Providers, Cable TV Operators, Cable TV Channels, and Cable TV Set Top Converters.
[26] "Internet" includes: Backbones, ISPs, Browser Software, Internet Search Engines, Portals, IP Telephony, Media Player Software, and Broadband Providers.

GRAPH 4: CONCENTRATION TRENDS OF VARIOUS MASS MEDIA INDUSTRIES



6. The findings show that, roughly, the more electronic and "digital" a media sub-sector is, the more highly it seems to be concentrated. Thus, print media are relatively unconcentrated, with its HHI rising only slowly. Film and Broadcasting, the next entrants, are more concentrated in the order of their age. Multichannel TV national concentration is high. The Internet media initially decline, stabilize during the Internet boom years, and re-concentrate towards 2004. Within the Internet, Broadband, the newest of media, shows high concentration and increases after 1996.

The inference (though not proof) is that as media becomes more electronic and then more "digital" they become subject to the more general

economic dynamics of the information sector. These dynamics, are driven by increasing scale economies and lowering entry barriers, leading to more concentrated industries and to periodic instability that leads to still further concentration. Print media have lower fixed costs than film or internet. They have higher marginal costs than these media. Hence, the scale economies are lower, and industry concentration higher. Film is somewhere in between. Broadcasting has very low marginal costs. DBS has high fixed and low marginal costs. Cable also has high fixed/low marginal costs on a per channel/per user basis, and thus high scale economies. The ordering of industries by their fixed cost/marginal cost corresponds roughly to the industries' concentration levels. [27]

In the debate over media concentration, the openness of the Internet has been a major argument for relaxing controls over traditional media. However, strong economies of scale, network effects, distance-insensitivity, and the complexity of providing advanced service have led to a consolidation for the core of the internet as well as for many major applications.

7. The aggregate concentration trend for the Internet industries, too, has been U-shaped, as they were for almost all of its major sub-industries.

[27] **This will be the subject of future econometric work.**

Furthermore, most internet industries were fairly concentrated in absolute terms, with the aggregate HHI at almost 1500 in 2005, well above the level of mass media. After 1996, concentration increased considerably.[28]

This pours some cold water over the hope that the internet will solve the media concentration problem. This sector exhibits the same dynamics leading to concentration. If anything, its greater dynamism drives it there faster. And the more advanced platforms for the internet – broadband and fiber-based ultrabroadband– will strengthen that trend. This sector, however, experiences periodic bursts of innovation and entrepreneurship, and it has the potential to erupt again.

4. COMPOSITION OF TOP COMPANIES

1. We rarely found market shares **to be** in the monopoly range. The table below shows the entire set of firms with 2005 market share of over 60%, in 100 industries.

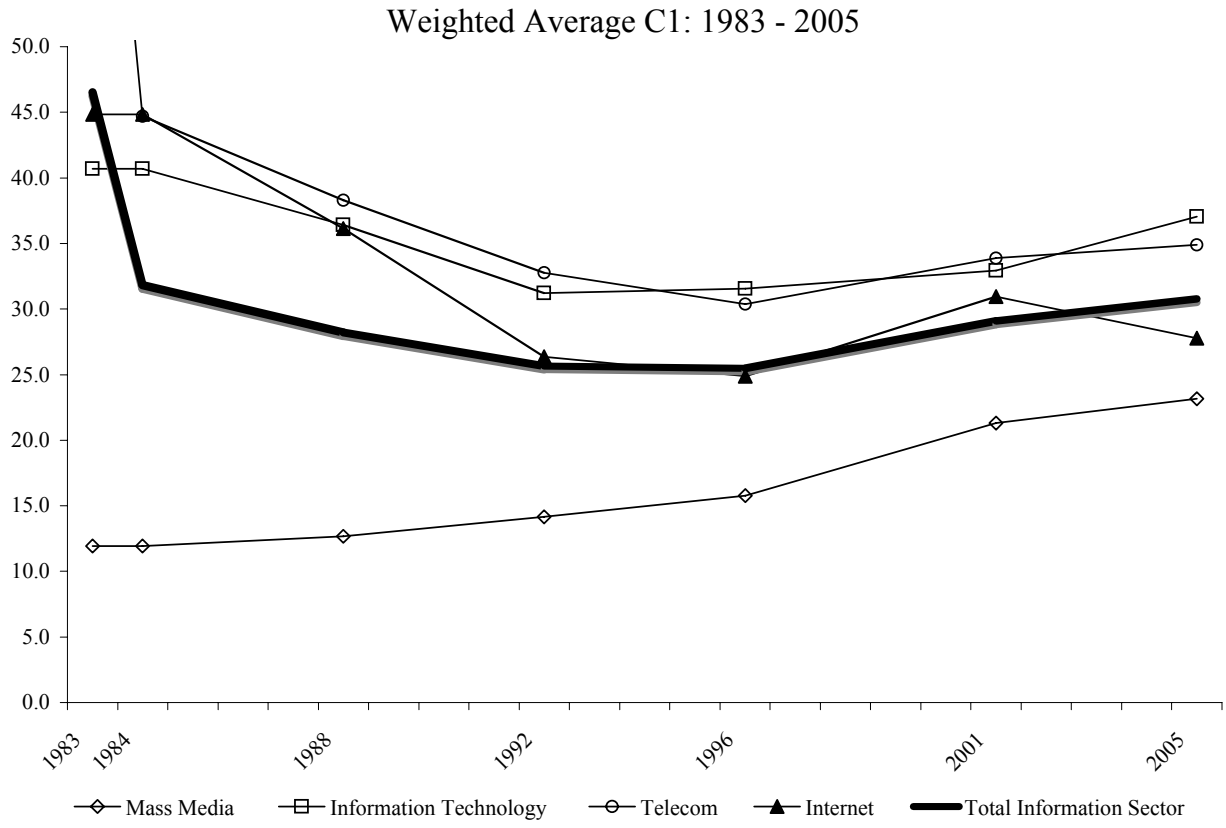
[28] Clearly the embryonic years of the internet are of only limited informational value. But they still show the pattern: from a limited medium of high concentration and few providers, to a wide open structure, and then to a re-concentration.

TABLE 5: TOP COMPANY SHARES (OVER 60%)

Industry	Dominant Firm	Share	Rival
Microcomputer Operating Software	Microsoft	95%	Linux (growing)
Mainframe Hardware and Software	IBM	92%	Networked small computers (growing)
Cable Music Channels	Viacom	84%	No direct rival, but MP3 downloads are growing
CISC Microprocessors	Intel	80%	AMD (growing)
MP3 Players	Apple	74%	CE industry

2. The role of the top single firm declined in Telecom, IT, and Internet. Graph 5 shows the trends of average industry C1, the share of the market leader.

GRAPH 5: INFORMATION INDUSTRIES WEIGHTED AVERAGE TOTAL 1983– 2005

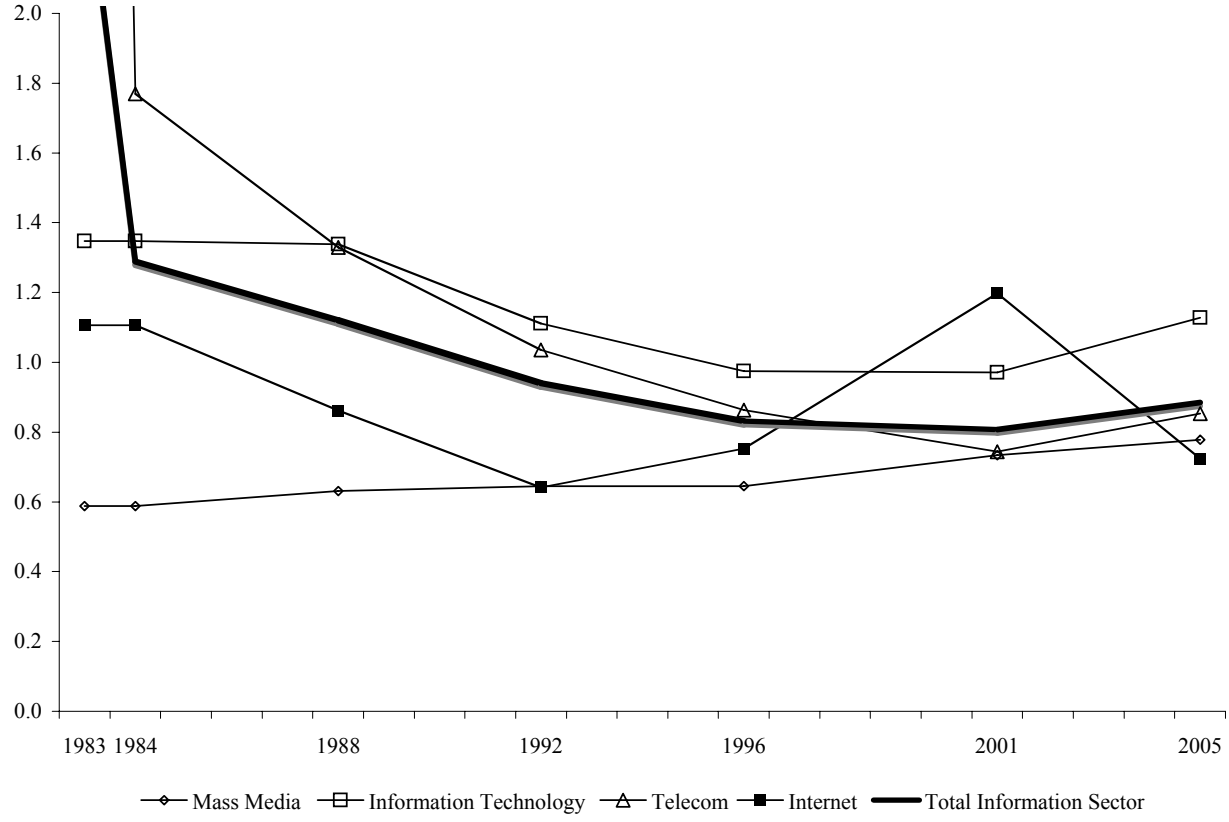


We can see a U-shaped decline for three sectors. On the other hand, it has increased for Mass Media, almost doubling to about 23%. (This does not mean that one firm holds 23% of the total mass media sector; different media industries are led by different firms. The top firm in the Mass Media sector overall, Time Warner, accounts for 10.3% of that sector. After the Viacom split, no other firm has more than 5%.

3. As the share of the top company rose (for Mass Media) or declined (for the other three sectors), how has the share of the next few firms moved?

Graph 4 shows the "Dominance Ratio" of the top firm's share relative to that of the next 3 firms combined. D = (C1/C(2-4)). When this ratio is high, the top single firm dominates the rest in a monopolistic situation. Where it is low, the top group of 4 firms are more similar in size – more likely an oligopoly or a competitive market.

GRAPH 6: DOMINANCE RATIO OF TOP COMPANY 1983-2005



We can see that the three sectors Internet[29], Telecom, and IT declined in their Dominance Ratio considerably from single-firm dominance in the

[29] The 2001 spike in the Internet's Dominance Ratio was caused by a special situation in the backbone industry.

direction of oligopoly levels.

But for Mass Media, the Dominance Ratio stayed fairly level over twenty years, rising gently from 0.6 to 0.7, which means that the top firm did not lose out relative to the firms #2-4. They grew together, in contrast to the rest of the Information sector.

Here, too, are these trends leading to a convergence of market structure across the four segments of the Information sector.

So far, much of this discussion centered on national concentration measures. But many of the problems in mass media concentration are (a) vertical; and (b) local.

5. VERTICAL CONCENTRATION AND CONGLOMERATES

A purely horizontal concentration measure cannot take account of the growth of firms that are active across a host of industries, which is the hallmark of media conglomerates.

1. Diversification. We find that the 50 largest firms of the overall information sector participated, on average, in 7.4 information industries, 2.1 more than in 1984. The largest 25 mass media firms participated, on average, in 4.5 industries, more than 20 years earlier. And the top 5 mass media firms participated

in 8.4 industries in 2005, whereas it was 4.6 in 1984. It peaked at 9.4 in 2001.

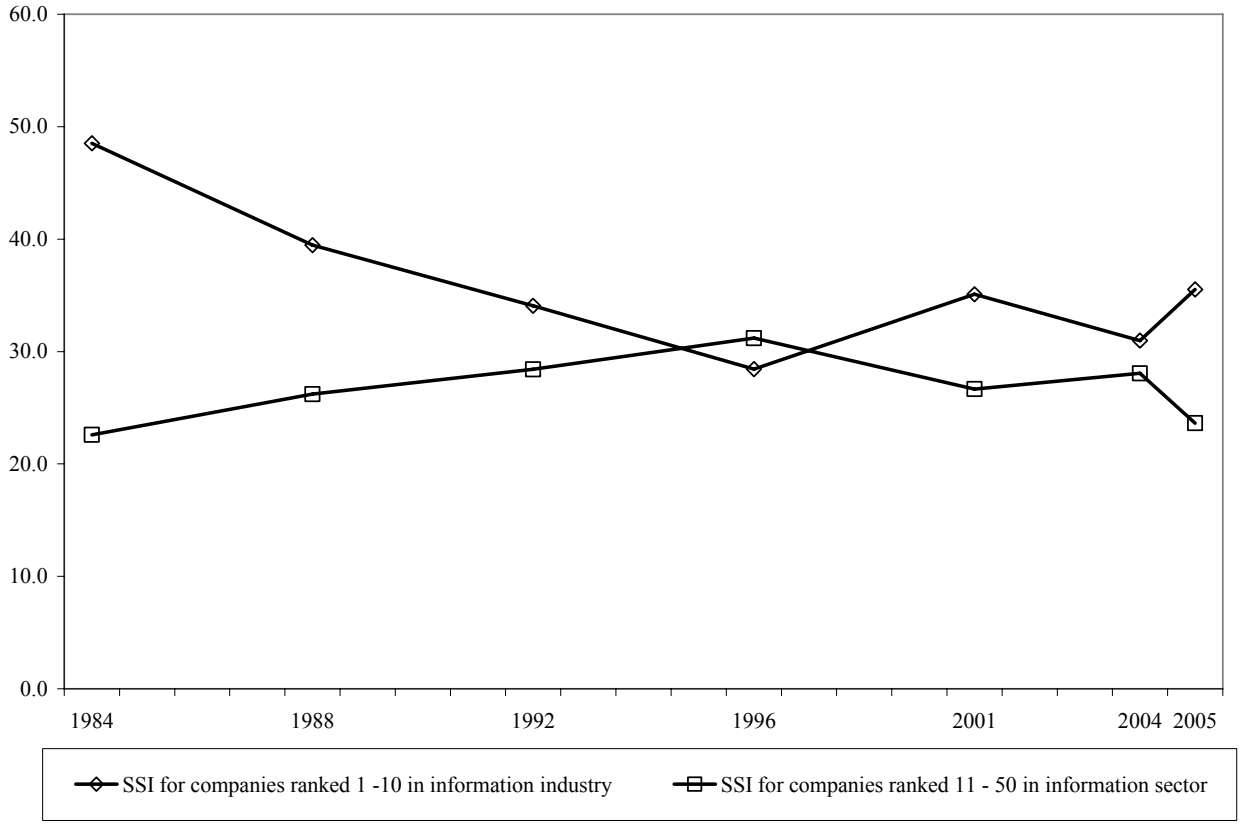
2. Cross-sectoral Convergence. We do not find much direct expansion by firms active in one traditional sector of the information sector (Mass Media, Telecom, IT) into the other 2 main traditional sectors. Of the 50 largest firms in the information sector, none had a presence in all 4 sectors. Microsoft, Sony, AT&T, and Time Warner had a presence in three sectors. However, Sony largely left telecom, except for mobile handsets as the junior partner in a joint alliance with Ericsson. The old AT&T first entered, then left computers and cable TV; the new AT&T and Verizon are trying for a role in TV distribution. Time Warner's role in IT was minor, but its broadband and voice over telephony are growing (and subject to shareholder pressure to spin off). The exception to the absence of cross-sectoral convergence has been the internet, which drew many of the largest information firms from all sectors. It seems the ground on which other firms from the more traditional sectors meet, test, and contest.

3. The combined share of the top 50 firms in the overall Information sector did not increase, but declined from 68% to 58%. The average top-50 information sector firm in 1984 had 1.4% of the overall information market. Almost twenty years and countless mergers later, the average top 50 firm had a *lower* share at 1.1% in 2005.

4. More telling is the trend line of the top 10 companies (See Graph

7). It shows a substantial *decrease*, from 48% to 27%, in the aggregate share of the biggest ten companies until 1996, when it started to fluctuate around 30%. But companies ranked 11 – 50 show the opposite trend. Thus, the relative market share of the larg firms became progressively more symmetric during this period. The smaller of the large firms increased in share, while the largest of firms saw it reduced.

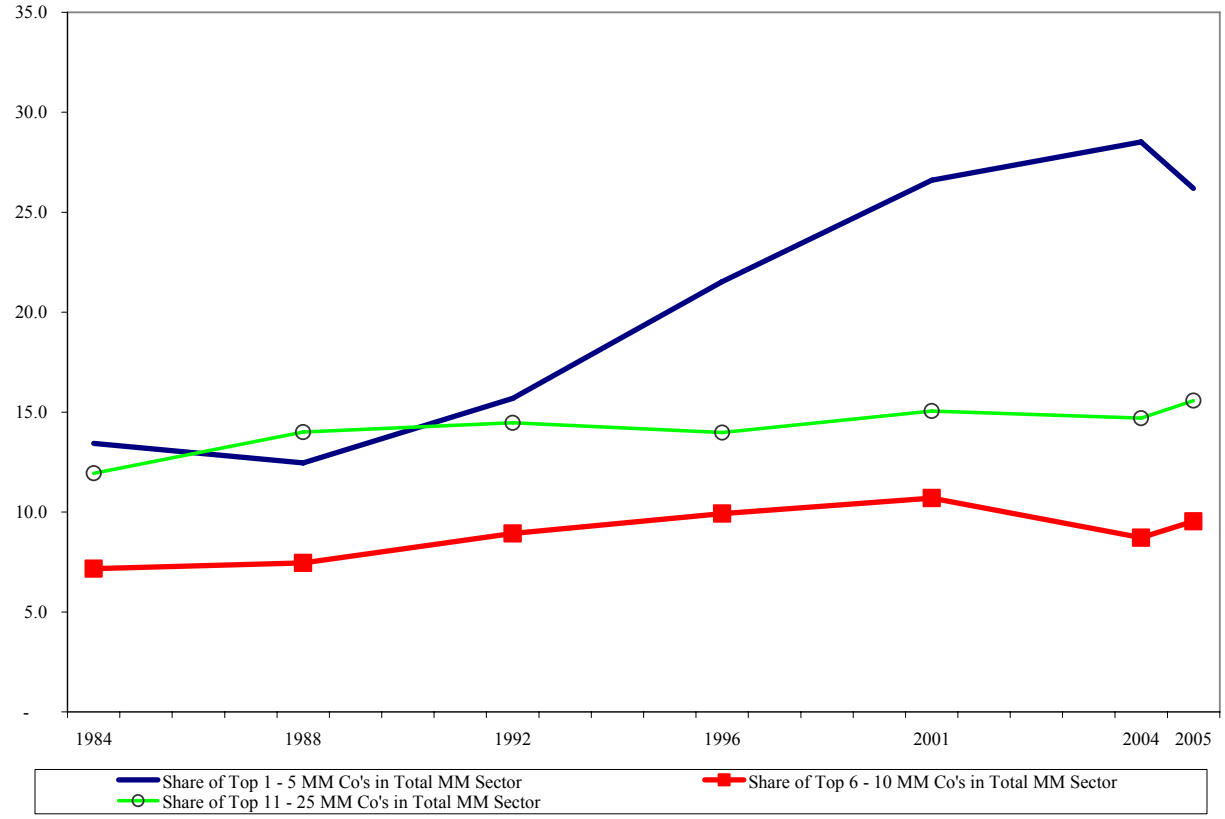
GRAPH 7: TOTAL SECTOR SHARE INDEX FOR COMPANIES RANKED 1 – 10 AND 11 – 50 IN TOTAL INFORMATION INDUSTRY (1984 – 2005)



5. For the top mass media firms, however, trends were**,** again, quite different. The numbers show a steady upward trend in overall sectoral share by the top firms. The top 5 mass media firms accounted together for about 13.4% of the mass media sector in 1984. By 2005, their share had doubled to 26.2%.[30] The increase was largest for the top 5 firms, which each gained, on average, a 2.5% share for a total of 5.2% since 1984.

GRAPH 8: SHARE OF TOP MASS MEDIA COMPANIES IN OVERALL MASS MEDIA SECTOR[31]

[30] The top 5 Mass Media companies for 2001/2 are the following (percentage of total Mass Media sector revenue): Time Warner (10.3), Viacom I (3.0), Viacom II (2.3), Comcast (5.0), Disney (4.2), and News Corp (3.7).
[31] Top 5, 10, and 25 Mass Media companies based on mass media-related industry revenue only.



Graph 8 shows a continuous and pronounced upward trend of the top-5 firms after 1988 til 2004. Even so, their aggregate share, at 26.2% of the overall mass media sector, was much lower than that prevailing in the Telecom and IT sectors, where the top 5 companies held in 2005 an aggregate share of 61.2% and 43.0%, respectively.

6. If we look solely at the electronic mass media, the top 5 firms' share was 42%, again, double that of 1984 (21.6%).[32]

7. For the combined electronic video mass media market (TV and cable

[32] This includes only the following industries: Radio Stations, TV Stations, DBS Providers, Cable TV Operators, Radio Networks, TV Networks, TV Syndication, Cable TV Channels, and Pay TV Channels. Other mass media industries, such as print, film, and music are not included in this calculation.

networks, TV stations, DBS, cable MSOs:—the part of mass media most likely under the regulatory supervision of the FCC)—the market share of the top 5 firms slightly declined to 18.1% in 1992, then rose pronouncedly to 40.3 in 2001 and 42% in 2005.

8. For the combined telecom services market, the share of the top 4 firms dropped from 66% in 1984 to 52% in 1992 and 1996, then rose to 88% by 2005.

To conclude, therefore: In the overall information sector, vertical integration has increased in terms of participation, but declined in terms of overall share or leverage power. It has increased by all three measures for the mass media sector.

6. OWNERSHIP

1. Of the largest 30 American individual fortunes in 2005, half originate in the information sector. Of the largest 400 fortunes, 94 (almost a quarter) originated in the information sector. This sector shows some of the gold-rush aspects of railroads and in the 19th century. A substantial part of the world's top wealth holders earned their wealth in the media, information, and communications fields.

2. But this wealth does not mean that ownership is in the hands of those billionaires. If anything, the opposite has been the case. The ownership by "insiders," i.e., by managers, board members, or shareholders

with more than 5% declined significantly for most of the largest information sector firms. Even for mass media firms, where it is higher than in the rest of the information sector, it fell from 34.6% to 19.6% between 1988 and 2005. Technology and new media companies became stock market favorites, and inside ownership decreased as founders cashed out. For the IT/Telecom sector as a whole, it rose from 4.8% to 6.4%, much lower than for Mass Media.

3. Similarly, within the individual top-50 firms, the ownership concentration of the major 5 shareholders declined. The same holds mostly for top mass media firms. Ownership became more fragmented among more shareholders, often without a dominant shareholder.

4. One major change has been the greatly increased ownership by large institutional investors in the information sector. Decades ago, media ownership was primarily in the hands of a small group of individuals and families. But by the late 20th century, new technology and new media had created a massive need for capital, and this required many sources and hence a wide-spread ownership. This trend has been most evident in the computer and high-technology industries, where relatively young companies need to rely upon equity capital -- initially by way of venture capital investment -- to finance their future growth. A high degree of institutional ownership is an

inevitable consequence of burgeoning technology and new media. Institutional investors are attracted to high-technology stocks due to their significant growth potential.

Information sector companies became an attractive investment vehicle for the ever-growing mutual and pension funds. Mutual funds' ownership of top information sector firms almost quintupled from 1984 to 2004, from 5.5% to 24.5%. Institutional ownership rose from 39.6% in 1984 to 57.2% in 2005 for the mass media sector and from 49.0% to 61.5% for the IT and Telecom sector. Most of the increase was after 1990. The largest firms in mass media had the highest share of institutional investment during the same period: from 52.6% in 1984 to 65.3 in 2004.

5. On the other hand, some major mass media companies were reluctant to relinquish owner/family control. The print media industries, given the prevalence of family control, has generally received less institutional investment than technology companies.

6. Who then owns the media? The funds with the most significant equity positions in the major media companies in 2005 were State Street Global Advisors ($68 billion), Barclays ($57 billion), Capital Research & Management ($47 billion), Fidelity Management & Research ($41 billion), Vanguard Group ($30 billion), and Wellington Management ($29 billion). The educators' pension fund

like TIAA/CREF had $19 billion invested in the media and information sector. Many of these institutional investors invest significant amounts in several of the largest information sector firms. Moreover, they are holding onto their shares for longer periods of time than in the past, thus having more of a stake in a company management.[33] They often also hold sizable chunks of media companies' debt in the form of long term corporate bonds and short term commercial paper.

7. However, even though the institutional owners hold only a few percentages (at most) of any single company, they often have stakes in many firms. Just 14 large institutional investors hold 21.2% of the average top 25 mass media firms, and 26.0% of IT and telecom companies. This is a remarkable share. In addition, they set the tone for the many smaller funds, and can trigger market changes for the major funds. If they acted in concert they could exercise industry-wide power. But there is, so far, little evidence for such coordinated activity, especially for one aimed directly at content.

[33] The average turnover time of the large capital funds, i.e., funds that specialize in Fortune 500 firms such as IBM, AT&T and Time-Warner, as tracked by *Morningstar Mutual Funds*, has shown a decrease in its three year moving average from 82.7% in 1988 to 66% in 1997. See the "Ownership" chapter. *Morning star Mutual Funds*. Dec 21, 1998, p. 179.

TABLE 7: MEDIA OWNERSHIP BY MAJOR INSTITUTIONS (2005)[34] ($MIL)

Mass Media Companies	**% Owned By 14 Major Institutions**
Time Warner	28.0
Comcast	26.8
Disney	21.9
News Corp	23.2
Viacom	20.4
General Electric	22.8
Gannett	20.1
Tribune	0.5
Charter	13.8
Hearst	4.7
Barnes & Noble	26.2
McGraw Hill	22.3
Knight Ridder	18.2
Clear Channel	38.7
Blockbuster	18.7
Borders Group	1.0
Washington Post	26.0
New York Times	6.5
IT/Telecom Companies	**% Owned By 14 Major Institutions**
Verizon	32.8
AT&T	33.7
Sprint	31.6
IBM	25.0
Hewlett Packard	24.0
Microsoft	26.9
Bellsouth	26.4
Dell	29.8
Motorola	42.3
Qwest	29.5
Intel	18.2
Lucent	4.0
Xerox	24.0

[34] Data in : Thomson Financial Services
% = % of Company Stock
% Industry = % of 50 Companies

Oracle	39.2
Cisco	20.8
Apple	25.6
Gateway	23.5
Sun	18.1
Avaya	27.2
EDS	24.8
Unisys	24.2
NCR	21.1

TABLE 8: INSTITUTIONAL OWNERSHIP OF THE LARGEST INFORMATION SECTOR FIRMS FOR 1984, 1998, 2000, 2004, AND 2005[35]

2005			
Media		**IT/Telecom**	
Company	%Institutions	Company	%Institutions
Time Warner	74.7	Verizon	55.4
Comcast	47.3	SBC/AT&T	76.2
Disney	66.3	Sprint	83.3
News Corp	48.1	IBM	46.9
Viacom I	68.4	HP	72.7
CBS	74.3	Microsoft	55.9
General Electric	55.2	Bell South	59.8
Gannett	84.3	Dell	64.6
Cox*	20.0	Motorola	71.1
Sony*	47.9	Sony*	47.9
Tribune	54.6	Qwest	72.4
Charter	54.0	Intel	55.8
Bertelsmann**	25.0	Lucent	36.7
Vivendi*	13.5	Xerox	86.0
Hearst	25.0	Oracle	48.3
Barnes & Noble	73.6	Toshiba*	37.7
McGraw-Hill	77.4	Cisco	58.7

[35] **% Insiders includes individuals with 5% ownership**
Source for 1988-2001: "Compact D - SEC," Compact Disclosure Inc., 1988-2001
Source For 2005: MSN Money
***Estimate**
****Most of company is owned by family-controlled Bertelsmann Foundation**
*****Extrapolated from other years**
'Estimate based on industry
^2 Classes of Stock Consolidated
^^Advance is private, owned by the Newhouse family
http://www.publicintegrity.org/telecom/analysis/CompanyProfile.aspx?HOID=8030
European companies - Assume 1/3 US investors [We multiplied Euro co's institutions by 3 – AB]

Advance^^	25.0	Apple	71.8
Knight Ridder	92.1	Samsung"	40.0
Clear Channel	87.5	Gateway	56.1
Blockbuster	96.5	Matsushita*	36.3
Reed Elsevier*	17.4	Sun	54.2
Border/Walden	98.0	Avaya	71.3
Washington Post^	64.2	EDS	92.0
New York Times*^	40.0	Unisys	71.7
Weighted Average	**59.4**	**NCR**	**75.5**
Average	**57.2**	**Weighted Average**	**63.2**
		Average	**61.5**
Weighted Average of US-Owned Firms	**62.3**	**Weighted Average of US-Owned Firms**	**64.8**

Thus, the claim that convergence in the information industries has resulted in a small group of media moguls is not an accurate one. A better description is one of many institutions owning narrow slices of a big pie. Among them, a dozen or so set the tone and have the highest stakes across virtually all media firms. Collectively, they let media managers run their businesses in a micro-sense but in a macro-sense putting performance pressure on them through their buy and sell decisions. But such pressure arises from the existence of private media firms in a profit-oriented market economy rather than from concentrated ownership. Indeed, strong owners with substantial ownership control who run a media company that have been most

problematic to many critics – Rupert Murdoch[36], Lowry Mays[37], the Smith brothers[38], or Silvio Berlusconi[39].

ANALYSIS OF FINDINGS

One major conclusion is that the information sector as a whole – a 1-trillion dollar part of the economy (about 10% of GDP) – has become less concentrated in 2005 than it had been in 1984. However, it has become more concentrated after 1996. After 2001, this increase has flattened out and slightly declined.

We observe a U-shaped concentration trend pervading across the share of the information sector over the two decades. Of the industries analyzed, we find it for 41%. It is a strong trend that cuts across numerous industries, and it characterizes three of the four sub-sectors of the information sector -- IT, Telecom, and the Internet, and at quite high levels.

But the important exception is the Mass Media sector. Because of the significance of media, much of the public debate has focused on it. For the

[36] **See www.freepress.net/hallofshame**
[37] **See www.corporatewatch.org**
[38] See *Sinclair and the Public Airwaves,* Report by Sinclairwatch.org, accessed at www.sinclairwatch.org/sinclair_report.pdf.
[39] **See www.democracynow.org/article**

mass media sector as a whole, concentration has increased steadily after 1988, **in the late 1990s**. However, the sector also remained lower in concentration than the other three sectors, and unconcentrated by the standards of the US Government's Antitrust Merger Guidelines.

This comparison should not be interpreted to imply that mass media concentration is low, since a strong case can be made for lower concentration thresholds for mass media than for other industries. (See the section, in the chapter on Vertical Concentration, for an alternative measure.)

Those media free-marketeers who deny this concentration trend will need to deal with these facts. One can argue that mass media are still fairly unconcentrated by DoJ measures, or that counter-trends of competitive entry will emerge, but one cannot argue that no substantial rise has occurred.

Media reformers, on their part, need to deal with the fact that overall concentration, while clearly rising, is much lower than the alarmist rhetoric suggested. Criticism has been shrill even when media concentration was quite low. Ben Bagdikian wrote about "The Media Monopoly" and about the "private Ministry of Information and Culture" not as a prediction but as a description, and in a period when overall media concentration was actually declining.

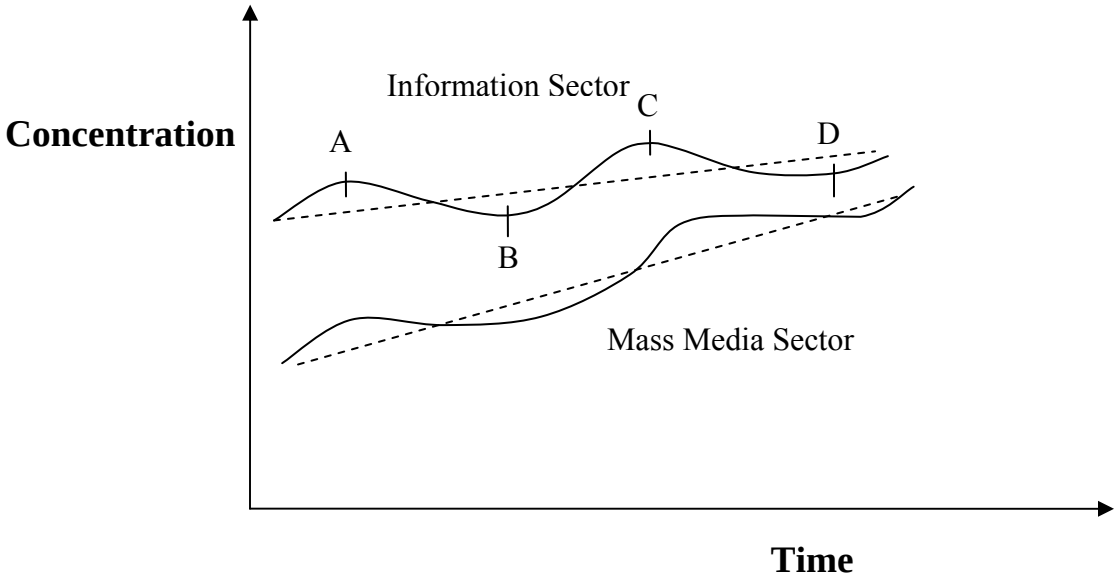
Once we observe these numbers, it raises the questions: why? What next? Is the slight decline in concentration after 2005 a harbinger of a downturn? Is the rise in mass media concentration merely part of a cycle of concentration and deconcentration? Will the problem, by and large, take care of itself? Or, to the contrary, are there more fundamental forces at work that lead information and media industries towards further concentration?

THE MODEL REVISITED

Earlier, we presented a model for the dynamics of the information sector. It **is** based on two variables, lower entry barriers which induce **a new** entry, and growing scale economies, which lead to a more concentrated market structure.

A third factor is digital convergence. It means that as industries become more digital in their technical characteristics, they also become more "digital" in their economic characteristics, and hence in their concentration. **This is presented in Graph 10**

GRAPH 10: CONVERGENCE OF CONCENTRATION OF OVERALL INFORMATION SECTOR AND MASS MEDIA SECTOR



We find this model to describe well the two decades we investigated, and shown in Graph []. At first, monopolies and tight oligopolies ruled the roost (Point A). Major players were AT&T, IBM, the three TV networks, the six major film studios. Then, concentration of the information sector dropped as entry barriers fell. New entrants emerged almost everywhere. In computers, Apple, Dell, Compaq, and a host of IBM clones. In telecommunications, MCI, Sprint, and many small networks and resellers. In cable TV, numerous small firms. In TV and cable networks, Fox and Turner. In mobile communications,

McCaw and other new cellphone providers. And then there were the new industries. Of information industries in 2006, [*] were either non-existent in 1984 or embryonic.[40] This was the period of openness and competition. It was soon followed by the takeoff of the internet and a boom period unparalleled in recent decades of American economic history. Concentration dropped (Point B). But this did not last.

The reason was that the growing competition destabilized the industry, and led to problems which in turn led to a re-concentration. After 2000, there has been a panoply of calamities—an internet crash; a bursting dotcom bubble; a telecom industry crisis; a semiconductor downturn; a music industry meltdown; a wireless 3G disappointment; a PC saturation; a newspaper advertising recession; a CE glut. Each industry has its own story. But there are also commonalities.

The problem for the industry has not been weak demand—more minutes and bits of almost everything are being consumed. The problem is the *price deflation* in the information sector. Information has become cheaper for many a decade, and it became increasingly difficult to charge for it.

What has happened that the entire information sector— from film to

[40] Defined as less than $[100] mil.

music to newspapers to telecom to internet to microchips and anything in between— has been subject to a gigantic price deflation in slow motion. It is one of the fundamental trends of the digital environment.

The basic structural reasons are simple. **Information** products are characterized by high fixed costs and low marginal costs. They are expensive to produce but cheap to reproduce and distribute. The cost characteristics mean substantial economies of scale, and incentives for each competitor to expand in order to gain them. Entrants are attracted by the growth characteristics and the lower entry barriers relative to the past. Collectively, this leads to an over-expansion.

The implication is a secular trend of price deflation in information products and services. This is a good deal for consumers. But it also creates problems for the suppliers. Under competitive pressures, the price for their information is marginal cost, which is close to zero.[41] It is most likely below average cost, which means that it does not cover total cost. One can do this only for so long before going out of business. And the more efficient the information market due to technology, the faster this process. Napster and Kazaa are the symptom, not the cause, of the pressure towards zero prices.

The main strategy is *consolidation* in order to actively maintain power

[41] For hardware, too, the main cost is in the development, not the **actual** production.

and control over price. Cable TV and local newspapers, for example, are among the profitable segments of the information sector because they hold local market power. Microsoft is profitable because of its hold over PC operating software. Consolidation is much easier than product innovation. Firms therefore try to consolidate to create or restore pricing power. Industry concentration moves to Point C. If scale economies have risen, C will be higher than A, i.e., the industry will trend to a higher concentration than before. But it is also possible that it will trend toward C^{I}, at a lower level, if the impact of rising scale economies is lower than that of lowering entry barriers, and new entrants emerge more quickly with the rising profitability associated with concentration.

These are the factors underlying much of the consolidation in the information sector. Our empirical findings match the model well. If we look at Graph [] earlier in this chapter, which depicts the overall concentration trend, we find a strong correspondence to the model of Graph []. In terms of the HHI, it reaches Point C^{I}. In terms of the C4, it reaches point $C^{I.}$ And if we look at Graph [], of the 4 information sub-sectors, we see a converging trend similar to that postulated in Graph []. The information sector has taken a U-turn returning to a concentration level of an HHI of over 1,900 if the Mass Media sector is not included. The telecom and IT sectors are returning

to a level of concentration out of which they were briefly pushed when a burst of regulatory liberalization and technological innovation lowered entry barriers and destabilized their previous industry structure.

But the mass media sector has taken a different path, as Graph [] shows. It has gone through only minor de-concentration in the multichannel stage of the ‘80s, and proceeded to rise over a longer period. It is not returning to a prior equilibrium but to a higher level. This matches our model’s Graph []. The reasons are several. First, in the electronic media field the old un-concentration was partly based on regulatory ceilings. Relaxation of these rules hence raised media structures to levels that are more market-based. Second, the retailing of media products has become more concentrated, along with the rest of US retailing. (This has been much more of a factor in mass media than in telecom, IT, or the internet.)

But more important is the greater transition of mass media towards dynamics and structure of the other sector of the information sector. And while the media are not yet converged with each other or with the rest of the information sector, they are more so than in the past and they affect each other, and they are affected by similar dynamics. This process is most advanced for the highest-tech of mass media, online media. Other electronic and distribution media, as well as film and music, are following in that

direction. Even newspapers and magazines are gradually following. Recall our earlier finding that the newer the medium—i.e, the more electronic and digital it is, the more concentrated it soon becomes.

If this indeed is the underlying and driving force, it will lead to still further consolidation and concentration. In 2005, the concentration of the other 3 sectors is about 1,919 [*] while that of the mass media sector was 1,165. There are, of course, differences in content-producing media from those of network distribution or the manufacturing or the software. But the commonalities and interactions are substantial, too, and with it commonalities in industry dynamics, including in concentration trends. These tendencies will be checked, from time to time, by bursts of new entry and innovation. But in most cases the newcomers eventually become part of the same consolidation process. Google and Yahoo are examples. The economic logic of the information environment seems to lead to oligopolistic consolidation. Where pricing power is lost, the industry's profitability declines quickly, as in the case of the music distribution or TV networking. Their strategy then is either to consolidate horizontally still further, or to merge in a vertical integration that hopes to gain market power.

As companies consolidate, industry concentration rises to Point C in Graph []. Around that time, counter-forces have gathered that slow down the

trend and reverse it. On the policy level, there is government and political opposition which might resist. On the business side, the rising profitability creates opportunities for investment and entry, which again lowers concentration. Depending on entry barriers, this entry can lead to a moderate or vigorous competition. The decline in concentration after 2001 (see in Graph 1 above) is only shallow, at least until the end of our time series data, suggesting that entry barriers—financial and legal—have not been lowered by much or have stabilized[42]. In time, this decline in concentration will reverse direction again as the newcomers become themselves part of consolidation (Point D). A new cycle begins.

These are the dynamics of the media industry. Media barons mostly implement and take advantage of fundamental forces. The question then is whether regulatory barriers will block these forces if aggregate concentration exceeds a limit, and what those limits might be.

Ownership ceilings on TV stations have worked reasonably well originally when they were fairly simple. Then they were changed, into national ceilings on "reach", which was more complicated already. They required also rules on "attribution" when ownership relations among

[42] **Indeed, telecom regulations became less favorable to new entrants, and financing was still hard to obtain, and cable.**

companies (or family members) became murky[43]. But this is nothing in comparison to the complexities that would involve media that are outside the ordered broadcast licensing scheme. Here, the government's powers, practically speaking, are limited. If Google has significant market power, how should the search engine market be restructured? Or suppose that a firm located in Korea is dominant in interactive games, what then is the US government's solution? Or, if the broadband telephony provider Skype becomes the vastly preferred choice, how would one deal with that? Or if Apple's e-Tunes video store maintains its vast market share of broadband users due to its network effects? Or if the Chinese government affirmatively supports a media organization's drive to achieve a global penetration?

And these are merely conceptual questions, to which are added those of politics, litigation resources, trade, intellectual property rights, and international enforcement. The example of Microsoft which has eluded antitrust action for a very long time, and where the issues are much simpler, should be recalled. Wishing for diversity and getting it through regulation are very different matters. If creating diversity was so easy there would be no local newspaper monopolies.

Nor is it clear whether media diversification will be a top priority,

[43]E**xamples are the** inter-family **business ties at** Sinclair, or **the** inter-company **relations between** G**E and** Paxon.

given conflicting public objectives. Economic stability and growth is another important goal. Information-based societies, the social cost of information sector instability is not acceptable politically.

It is always difficult for laws or regulations to modify fundamental transitions of industries. It is particularly difficult to do so where, as in the case of media, any policy in a free society needs to be one of light touch.

Thus, it will be quite difficult, and sometimes impossible, to reduce the concentration trends in many media industries as they become digital and global. This means that the technological and market forces will play a much larger role than in an environment of traditional media, where broadcasting structure could be controlled through spectrum licensing, where the newspaper technology and economics prevented the local monopolies to become national oligopolies; and where telecom networks were price and profit regulated.

Thus, to summarize, we find that the media sector has grown in concentration over the 1990s. We conclude that the economic and technological dynamics at work for media are increasingly the same as for the information sector generally, and that this leads to an upwards concentration trend for media that converges with that of the information

sector more generally. The information sector's concentration level is fluctuating, but at a higher level. Thus, the dynamics of digital convergence lead the mass media industries to assume the market structure characteristics of the rest of the information sector. This would mean that concentration trends will continue as they oscillate on the way up, and once up.

It leads to concentration levels that might be economically efficient but not necessarily favored from a societal perspective. But it will be quite difficult for any set of policies to contain fundamental economic and technological focus that are at play here, even if one ignores the political dimensions. It is also clear that any policy to enhance a diversity that is not provided for in an open media market need to be supported by real resources -- money, and spectrum-- beyond structural and access policies. Diversity is valuable, and it cannot be achieved on the cheap.

This conclusion is part media pessimist—concentration is increasing and will continue to do so. It is part media optimist—concentration is lower than often feared, and lowered entry barriers lead to periodic deconcentration. But it is mostly media realistic—the structure of media are being transformed by broad forces, and concentration its symptom, not cause.

APPENDIX A: A NEW CONCENTRATION INDEX FOR MEDIA

The data will show that US mass media have, in the aggregate, indeed steadily increased in concentration since 1988. But they also show that the concentration on a national basis is usually fairly low by the standards of US antitrust.

By that antitrust standard, many media industries are unconcentrated. The numbers show that even radio, the poster child for growing media concentration, had in 2005 a national HHI of only 545. For TV station ownership it was 253; for newspapers, 191; for film distribution, 1,248; and for cable TV, 1,568. (Concentration is much higher locally, given the smaller markets. For radio, it is 2,400, and for newspapers and cable it has long been above 7,000. Rarely is there more than one local newspaper in a city. But that type of concentration is a separate question we will reach later).

Compare these numbers with those of other industries. Just for example, video game consoles have an HHI of 3,911; microcomputers, 1,561; cellular handsets, 1,712 - all much higher for products used daily, yet without unleashing the same passion about concentration.

The obvious reason for this discrepancy is that most people desire a

greater diversity in their information sources than in their computer hardware. They wish more choices for themselves and for the political process. Therefore, the question arises of whether the traditional antitrust measure of the HHI that is used for other goods and services is also appropriate for media.

The issue is partly whether the concentration threshold for media should be lower, and partly whether the HHI methodology itself accounts sufficiently for media pluralism. For example, in the radio example above, if the two smaller stations were replaced by 20 stations, each with 1 per cent of the market, the HHI would decline only slightly, from 3400 to 3220. Yet the diversity of the local radio market would clearly be significantly increased by the presence of 18 additional radio station providers.

Yet the assurance of a diversity of perspectives and sources—"pluralism" – opens practical problems. How do we define a "viewpoint"? How do we measure it? Which viewpoints need to be assured a media outlet in order to find diversity? The White Supremacists? The Flat Earthers?

This then leads to protect opportunities rather than outcomes, and try to assure non-discriminatory *access* to all voices and perspectives. Elements of such a policy are common carriage, access rights, interconnection rights, net-neutrality, etc. All these are regulatory approaches, and they require a

variety of interventions that may include controls over the price for such access,[44] its quality, and who must offer it[45]. These issues are not simple, and they get more complex over time as the participants learn to game the system.

Another option to promote access is more indirect, not by direct assurance but by reduction of gatekeeping powers. These are *structural* policies, aiming to create a competitive media system which is believed to result in a non-discriminatory access. This includes limits on size, ceilings, or on the number of outlets, restrictions on cross-media ownership, etc. The underlying theory is that with a diverse media industry structure, if enough people like to speak out in favor of a point of view or to listen to that message, there would be media who would serve them.

The question is whether traditional antitrust measures of concentration are appropriate for media. Adopting the HHI or any other measure does not by itself imply adopting a particular threshold definitions as to what constitutes concentrated market for a medium. That is a separate question. The measures are, in any event, not a binding rule but a guideline, to be supplemented by additional factors and be used with discretion. But should

[44] Noam, Eli. *Interconnecting the Network of Networks.* Cambridge: The MIT Press, 2001.
[45] "Beyond Liberalization II: The Impending Doom of Common Carriage," Telecommunications Policy, Vol. 18, No. 6, (1994), pp. 435-452.

there be no numeric test at all? It is a real problem to let important decisions about the media system become largely the judgment calls of government officials, providing them with a tool to reward friends, punish enemies, and pacify critics. People who advocate subjective judgment calls—discretion—when the numbers come out against them in one case do so at their own peril when it comes, inevitably to the next case. The relationship between media and government is inherently adversarial. It should not include discretionary powers by government over media. Or, conversely, the ability of influential media firms to sway those officials. The problem with the HHI (and the C4) is that while it considers market power – which is essential—it does not make allowance for pluralism—which is also essential. That is, it looks only at actual choices rather than at options.

But even with options, market power is still a factor. The FCC, in creating a "Diversity Index" (DI), ignored this. It aimed to measure local diversity by counting "voices," and then weighing it by the medium's generic importance as an information source. A voice was a radio station, a newspaper, a TV station, or a cable operator. Yet it equated gnats with elephants. This ignored the resources of the large media outlets, the talents they can put into content production, their marketing strength in obtaining an audience and advertisers, and their brand value. Yet in fairness, the

"voice count" measure is not without some merit. Diversity of media does not require that all available voices have equal weight. It is in the nature of markets to coalesce around major choices and marginalize small ones. It is in the nature of popular media to be popular. Media audiences will always be unevenly distributed. As long as the small voices have an opportunity to speak up, they make a difference. Equality of opportunity does not mean an equality of outcomes. But merely counting the number of participants in a market is not the test applied in other industries.

The question then is how to bridge the two concepts, market power and voices. The starting point should be to acknowledge that *both* market power and diversity are legitimate factors to consider, and that to omit one or the other leaves out a major factor and invites reasoned opposition.

A shorthand approach is needed for the diversity option. Such an approach would include the number of voices as well as the market concentration, and it must do so in a simple fashion.

The "voice value" of a medium is v. V is defined as $v = Kn^{-\frac{1}{2}} * \frac{K}{\sqrt{n}}$. It is declining with the number of options, since, say, the third new radio station adds more value than the 33rd station. K is a constant and n the number of voices. For example, if the option value of the first station is 100, the incremental value of the

second station is 70.7, of the 10th station is 31.6, of the 20th station 22.3, etc. [46] Total option value of all stations is, using a continuous function, the integral over n,

$$V = K \int_{1}^{n} n^{-0.5} dn = 2Kn^{\frac{1}{2}}.$$

This means that total value v of media options is proportional to the square root of the number of these options. The larger the number n, the larger the aggregate value of the options, the "voice value". And the larger the market concentration, the larger the HHI. Hence, if one divides concentration by voice value, the ratio rises with more concentration and with less diversity, and declines with less concentration and more diversity.

The proposed Media Ownership Concentration and Diversity Index (MOCDI) is therefore defined as the following:

$$MOCDI = \frac{HHI}{V} = \frac{\sum_{i}^{n} s_i^2}{\sqrt{n}}$$

The numerator is the regular HHI for market power – the sum of squared market shares. The denominator is the square root of the number of voices in a media market[47].

[46] **If one ignores diminishing incremental value added, the index loses persuasiveness. The exponential factor -0.5 is meant to be symmetrical to the HHI's square and computationally easy. If a more rapid or slower decline of options seems more reasonable, a different exponent can be used in the formula.**

[47] **Since it is a dimensionless index we can ignore the constant 2K.**

For example, suppose there are 8 independent radio stations, of which 4 have a share of 24 % each, and the remaining 4 stations had a share of 1% each. The regular HHI would then be 2308. The existence of the 4 smaller stations would hardly affect it. If they did not exist at all, the HHI would be 2500, not very different. But clearly, the small stations should be considered a factor. On the other hand, if we simply counted 8 voices as if their respective size did not matter, we would overstate actual diversity. Instead, with the media concentration and diversity index above, we would find a value of $\frac{2308}{\sqrt{8}} = 816$, while in the case of non-existence of the 4 small stations we would get an MOCDI score of 1250, i.e., a higher concentration measure that reflects the lower number of voices.

If all 8 stations had the same market share, the MOCDI would be 442. On the other extreme, if one station had 90% and the other 7 split the rest, the index would be 2867. Thus, the index reflects an ordinal ranking that makes sense as we weigh both factors, market share and market participation.

The MCDI is numerically not comparable to the HHI. Thus, a media sector whose MCDI is lower than its HHI is not "less concentrated". The two measures are on different scales, with the $MOCDI = HHI * n^{-\frac{1}{2}}$, i.e., smaller, and more so with the number of voices. For that reason, the HHI threshold are not applicable to the

MCDI.

The MOCDI formula, slightly modified, could also be used for the concentration of all media in the aggregate, since a company might have no special market power in any particular medium but be involved in several media so that overall it would hold significant power, especially if it were to have multiple holdings in one city.

Whatever the weight—dollars, news content counts, or surveys—we could define an overall index of local media diversity which would provide a weight for each of radio, TV, newspapers, magazines, and local special cable channels.

All-Media $MOCDI = \frac{\sum wj * S_{ij}^{2}}{\sqrt{n}}$

where w_j is the informational weight of medium j, and S_{ij}^2 is the market share of firm i in medium j. The special wrinkle of S is that it includes a firm's market share in other media, too, to account for cross-ownership. Thus, if a newspaper company with a 50% share in a local market also owns a TV station in the same market, with 14% of the market, these shares would be added, i.e., $sij = sij_1 + sij_2$, S would become 64. The weight would be that of the higher-weight medium. With this approach, as new media emerge and smaller media grow, or some of the larger firms stay stable

in size, the others can own more, since its not their size or holdings that is constrained but only the overall market concentration.

This leaves as the next question what the concentration thresholds ought to be for antitrust or regulatory purposes.

This leaves the question of what the concentration thresholds ought to be. This is a matter of policy, taste and market size.

The desired media concentration threshold would depend on the size of the market. For a local market, or for a smaller country, it would be different than for the giant American national market. As an illustration of the concept, such a function could be:

Diversity Threshold $D = 10{,}000 \times Pop.^{-\cdot 2}$.

Such a formula would set the threshold, in a small local market of 100,000 population, at a MOCDI index of 1,000, which translates to about 4.6 independent voices. In a local market of a million people, the formula would result in 6.3 equal-sized local voices. And for the US as a whole, the overall threshold would be an index of 200, the equivalent of 13.5 voices if they are equal-sized, or for example 4 companies of 15 per cent each, 4 companies of 5 per cent each, and 17 companies of 1.2 per cent each. If larger numbers are deemed more appropriate, ours would simply modify the expansion so the lower threshold number would be obtained by the formula.

Some people will oppose this approach. They might suspect darkly that it means a loosening - or tightening - of the existing rules. But that is a question of where the thresholds would be set, not of the methodology itself. Others might argue that no intervention at all is warranted, since markets will generate competitive entry and diversity. In that case, fine, there would be no need to ever use any media diversity test. But suppose that market power does emerge? What then? After all, the economics of media and information, with their high fixed costs and low reproduction costs, create strong economies of scale that often favour concentration. In any event, such a laisser-faire approach is highly unlikely in the real world, considering the FCC's debacle in Congress and the courts in trying to loosen the rules.

To still others, any numerical test is suspect as mechanistic. They would prefer a case-by-case consideration of many factors relevant to a media market. But this would leave a judgment call over media ownership to government officials able to reward friends and punish enemies, or enable powerful media companies to thwart unfavourable decisions - both undesirable options given the inherently adversarial relationship of government and media. This argues for a relatively clear-cut test, with a relatively clear-cut methodology. It would not be a strict rule but be what lawyers call a rebuttable presumption, a benchmark. Given the contentiousness of the issue, it would be best to create such a system in advance rather than to do so

ad hoc, ad hominem and ad infinitum.

End of Appendix