Beyond Broadband Access: Developing Data-Based Information Policy Strategies
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In Search of Evidence-based Research for Evidence-based Policy

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Abstract and Keywords

This chapter focuses on the use and abuse of data for information policy development and the search for evidence-based research for evidence-based policy. It considers the debate over media concentration as an important element in the struggle over rules and power in the new economy and suggests that empirical evidence is secondary in this debate, used by academics selectively and in pursuit of advocacy rather than of science. It provides some of the numbers relevant to the debate, along with the dynamics underlying them. It also asks whether Congress and the U.S. Federal Communications Commission (FCC) are interested in serious data analysis. It identifies a specific structural impediment in the rule-making process and recommends a requirement for an "academic impact statement" in rulemakings, which would be an independent literature review of relevant peer-reviewed literature.

Keywords: information policy, data analysis, media concentration, new economy, empirical evidence, rule-making, academic impact statement, evidence-based research, evidence-based policy

Researchers habitually complain about policy makers and bureaucrats not sticking to so-called facts and figures but being guided by ideology. The more recent terminology is the call for "evidence-based policy." These objections come from the political left by media reformers and from the political right by free-market libertarians. In both cases they are directed against those in power who make or implement policies the critics disagree with.

There are several problems with this critique. The first is the premise that policy should be decided by the numbers rather than by ideology. This is the perspective of technocrats who wish for experts to make societal decisions in the way that engineers design a bridge. Put uncharitably, this view is antidemocratic because it questions the legitimacy of majority decisions based on preferences rather than statistics. What is wrong with societal decisions being governed by ideology? That is what elections are ultimately about. More government or less. Higher taxes or lower ones. More support for equality and opportunity or less. More freedom of speech or more consideration for national security.

The second problem with the "evidence-based" perspective is that it implicitly views the policy process as something resembling a civil trial, in which those who marshal the stronger evidence win. Even for the courts this view is questionable. Strong facts will not win a case if the legal principles go in a different direction.

A third problem is the asymmetry one often encounters. Some of the same people who argue in favor of numbers-based public policy on those issues **(p.132)** where they seek change will recoil from the same approach when numbers are applied to their own pet projects. Put a numbers tag on the value of privacy? But privacy is a human right beyond economics. Do a cost-benefit analysis of the Afghan War? But national security and America's credibility are beyond bean counting.

I will use the example of the media concentration debate, and show how empirical evidence is secondary in the debate, and used by academics selectively and in pursuit of advocacy rather than of science. I will then provide some of the numbers relevant to the debate, and the dynamics underlying them.

The New Politics of the New Economy

Wherever we look today around the information society and economy, protests and protesters are emerging, and with them academic analysts, researchers, and advocates. The specter of its discontents is haunting the information society. Why does such ferment exist among the plenty? Isn't everything in this field becoming cheaper, faster, and more widespread?

The actions of dissatisfaction started with individual hackers and phreakers, considered maladjusted vandals. But then it moved to disparate groups with agendas, policy complaints, and goals. These include:

- The Fair Use and "Copyleft" community
- The Privacy Protection movement
- The Unlicensed Spectrum advocates
- The Open Source and Free Software movement
- The Network Neutrality advocates
- Freedom of Speech and Human Rights advocates

The components of this movement are not only public interest reformers. They also include traditionalist cultural opponents to modernism, as well as the economic losers. Many people are familiar with various flash points of contention but they have not connected the dots and recognized that they are facing an incipient social movement on the model of environmentalism. As the Internet permeates society, society in turn permeates the Internet and injects its internal and international conflicts.

The tenets of information activism follow this syllogism:

1. Many aspects of social and political life have deteriorated, creating the negative tendencies of [list here your dissatisfaction, such as political apathy, violence, consumerism, gender and racial **(p.133)** stereotyping, neglect of the world's poor, poor nutritional habits, etc.].
2. Information media play a central role in either creating or exacerbating these problems, or in preventing a remedy.
3. Therefore, reforms of the information sector equal social reform.

This syllogism is shared by the antiauthoritarian left with the political right, with traditionalists suspicious of information media role in modernism and hedonism, and with most governments wishing to control information media.

Of course, it would be surprising if a technological revolution that leads to an economic transformation would not lead to societal unrest. When, in the nineteenth century, technology proceeded at a rapid pace while social institutions did not, the results were upheavals and revolutions. In the industrial age the control over the means of production led to revolutionary movements and the overthrow of governments and social systems. In Britain the "commanding heights" of the economy—then the coal and steel sector—were nationalized in the 1940s, with dubious results. Today, a similar battle is emerging over control of the "means of information."

The Media Concentration Debate

The debate over media concentration is an important element in this struggle over rules and power in the new economy. That debate has been bitter and noisy. In the United States it led over one million people to write to the FCC and Congress. It is an issue of contention around the world. On the one side are media reformers who view with deep misgivings the rise of major media companies. On the other side are the media libertarians who believe that the increased openness of the Internet has been resolving all issues of market power. Who is right, the media optimists or the media pessimists? This would suggest a major empirical effort to clarify the question. But unfortunately that is not so, on both sides of the ideological spectrum. Few are truly interested in an empirical answer because they already know the truth deeply.

On the scholar activist side, several influential books summarize the perspectives.

In 2004 Ben Bagdikian, Pulitzer Prize winner and former dean of Journalism at Berkeley, wrote that "five global-dimension firms … own most of the newspapers, magazines, book publishers, motion picture studios, and radio and television stations in the United States."[1] Bagdikian is required reading in numerous media classes around the country and the world. He has been warning against the "Media Monopoly" for many years.

(p.134) Is he correct? If one looks at the 2004 numbers for each media sector and company, taking Bagdikian's top five media firms for that year, their combined market shares by revenues (it is lower by outlet count) was actually:

- Newspapers: 1 percent
- Magazines: 18 percent
- Trade and paperback books: 34.5 percent
- All books: 19.1 percent
- Radio stations: 12 percent
- TV stations: 13.6 percent
- Cable TV operators: 12.2 percent

These numbers are not small, for sure. But it is hard to describe such aggregate ownership of the top five companies as a "media monopoly." Partly based on Bagdikian's clarion call, however, Lawrence Lessig, the noted law scholar of the Internet, wrote that "within a few years, we will live in a world where just three companies control more than 85 percent of the media."[2] Lessig continues: "Today, in most markets, the two largest broadcasters control 74 percent of that market's revenues." Actually, it is 47.9 percent, still high but less dramatically so, and that figure is the share just in local broadcast TV revenues, not of all TV including cable and DBS, where it would be less than half of that figure. Furthermore, the two leading companies Lessig counts are different in different markets. Robert McChesney, a leader of media reform, has much better numbers, but then he goes on to say forthrightly that market numbers are irrelevant anyway. He writes that "the problem with market regulation is not merely a matter of economic concentration—even competitive markets are problematic."[3]

If the Cassandra perspective of media monopoly is influential with Obama's policy makers in Washington, in the Bush administration the opposite perspective governed, that of the Pollyannas. Adam Thierer, then with the Cato Institute, wrote in his book: "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 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 continues: "If there is no empirical foundation for the claims made by critics of media decontrol, what, then, explains the unusual passion they have exhibited during the debate? … It is the field of psychology, not law or economics, where the best explanation of such 'media madness' can be found."[4]

Ben Compaine (Harvard University) and Doug Gomery (University of Maryland) provide a detailed set of numbers, and conclude: "The largest **(p.135)** of the media companies are mere pixels in the economic tapestry. The issue could be stopped with a single word, *Internet*."[5] They find a concentration measure, known as the Herfindahl-Hirschman Index (HHI) of 268, which is very low, though slightly up from 205 in 1986. But their methodology is to lump all media together as different voices in one large market. This gave critics an easy target. The late Edwin Baker of the University of Pennsylvania responded: "even from a narrow, efficiency-oriented antitrust perspective, [they are] wrong to identify the media as a whole as the relevant market … whether or not supplied by the same firm, content and its delivery are very different, non-substitutable products."[6]

So the question is, are the academic Cassandras or the academic Pollyannas correct? This is an empirical question. It is a question that should be supported by governments and foundations. But instead, the FCC in the Bush years was mostly engaged in data studies to prove that competition was alive and well. Correspondingly, ideology-based foundations on the left and the right were funding activities to confront the question rather than to answer it first. This followed the adage of activist scholarships, on both sides of the spectrum: "Avoid measurement, add commitment."

The Historical and Global Context

Even without a data orientation the debate has been characterized by an absence of historical context. The notion is one of a Lost Golden Age where media were open, diverse, plentiful, and affordable. But nothing is further from reality.

- In the eighteenth century, Benjamin Franklin was America's first media mogul, with ownership of newspapers, magazines, book publishing, and a major postmastership.
- In 1895, *Munsey's Magazine* accounted for 40 percent of magazine circulation.
- Western Union held a near monopoly in the first electronic medium, the telegraph.
- The Associated Press was dominant in the news agency business for long stretches of the nineteenth and twentieth centuries.
- Until 1984, AT&T was a near monopoly in telecommunications and its associated hardware.
- In the early twentieth century, the Marconi Company held a monopoly in wireless telegraphy.
- In the 1890s, tours of successful plays that criss-crossed the country in this premovie era were dominated by two firms.
- **(p.136)** In film, the 1910 Edison Trust tried to combine all stakeholders in an effort to dominate the film business.
- RCA dominated radio in the 1920s into the 1950s.
- Broadcast TV was controlled by three networks.
- In computers, IBM was dominant well into the 1980s.

Just because a problem keeps re-emerging does not mean it should be ignored. To the contrary, it seems to indicate a fundamental problem that every generation needs to resolve. However, the critics of media concentration often imply a new and urgent problem, and the need to return to the "good old days" of media diversity, and that is clearly incorrect.

Just as the US debate rarely has a historical dimension, it does not provide an international context. Yet media concentration is an issue around the world. Examples:

- Germany: Bertelsmann
- Italy: Berlusconi
- France: Vivendi
- Sweden: Bonnier
- United Kingdom and Australia: Murdoch
- Mexico: Televisa/Azcarraga
- Brazil: Globo media/Marinho
- Iceland: Dagsbrún

Each country has its own story, of course. But the ubiquity of concentration suggests that one must go beyond a critique of particular government policies or individual empire builders and look at the drivers of these trends in a more detached way.

The Empirical Evidence

My own study[7] looked at one hundred US information-sector industries, such as cable, TV, newspapers, books, film, and so on as well as Internet backbones, ISPs, telecom, microcomputers, mobile, and so on. It covered the past twenty-five years. For these one hundred industries, I found revenues, calculated markets shares, and constructed both a four-firm concentration ratio (C4) and a Herfindahl-Hirschman Index (HHI) of market concentration.[8]

Weighted average concentration measures for subsectors like Print or Electronic Mass Media, among others, were then calculated and further aggregated into the weighted average for the large sectors of Mass Media, **(p.137)** Telecom, IT, Internet, and into a weighted average for the entire information sector.

Figure 8-1 shows some of the findings.

Are the information industries more concentrated or less concentrated? This depends on the comparison year. The information sector industries, on average, follow a U-shaped trend. In 2004 the information industries were more concentrated than in 1996 but less concentrated than in 1984 or 2001.

But this is not equally true across the information sector. If we disaggregate it into four subsectors—Mass Media, Telecom, Internet, and IT—we can see in Figure 8-2 that the latter three segments are U-shaped and similar

(p.138) in trend, while Mass Media are trending upwards, though from a much lower starting point.

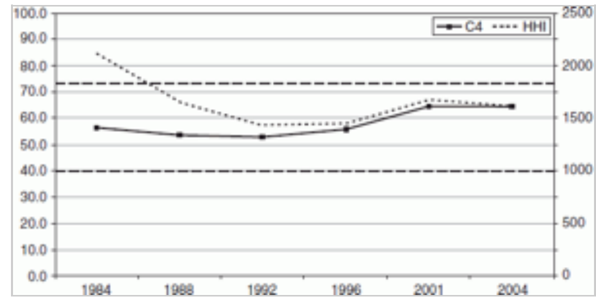

Figure 8-1. Information industry total 1984–2004.

Other findings:

- The Average HHI in the several mass media industries has increased after 1988, especially after 1996. But concentration is not especially high by traditional antitrust measures.
- For average mass media, the average HHI increased from 524 in 1984 to 929 in 2001, and to 1121 in 2004.
- The share of the top five media firms in overall mass media more than doubled between 1988 and 2001 (from 10 percent to 23 percent), then reached a plateau.
- With Internet media included, the share of the top five firms doubled from 10 percent to 20 percent.

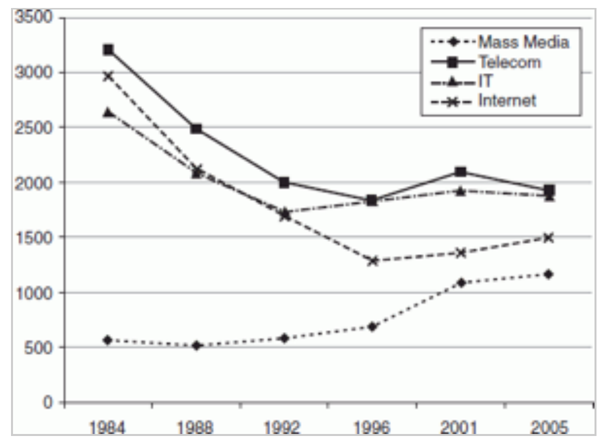

Figure 8-2. Concentration of the four major segments of the information sector.

The top five mass media firms clearly were major gainers, as can be seen in Figure 8-3. But their aggregate share (22.8 percent) of the overall mass media sector is much lower than in the Telecom and IT sectors, where the top five companies hold an aggregate share of 55.7 percent and 36.9 percent, respectively. Media free-marketeers cannot deny this trend, but media reformers need to deal with the fact that overall concentration, while rising, is much lower than some of the alarmist rhetoric suggests.

(p.139) The Dynamics of Concentration

The next question is why these changes are taking place, and do so around the world. Are unconstrained media moguls taking over? Or are fundamental forces at work? Three basic trends affect the market structure of media: the growth in economies of scale, the lowering of entry barriers, and digital convergence. Together, these forces shape concentration trends.

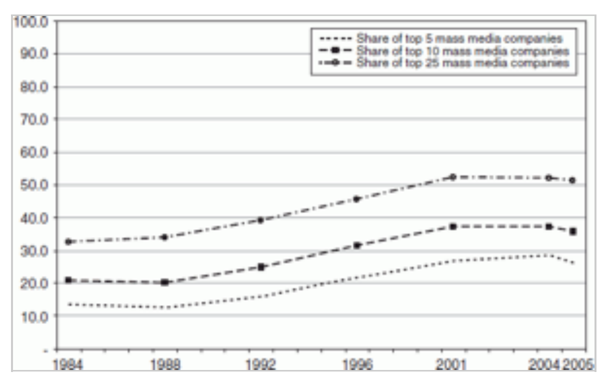

Figure 8-3. Share of top mass media companies in overall mass media sector.

Economies of scale have risen, based on the increase in fixed costs and the reduction in incremental cost that shapes many media and information industries. This is depicted in Figure 8-4 by the slope, and its steepening relatively to each other, of the two lines labeled State 2 and State 3. In State 3 economies of scale lead to a sharper decline in average cost.

Barriers to entry are a related but different concept. The main barrier is the fixed cost required as investment in order to be able to engage in production. This is depicted in Figure 8-4 by the vertical axis. One of the characteristics of recent developments in media and information has been the increase of these initial costs. Fiber networks or Hollywood movies are good examples. In Figure 8-4, State 1 has similar economics of scale than State 3, but higher barriers to entry.

When economies of scale and barriers to entry move in the same direction, their combined impact is unambiguous (see Figure 8-5). If both rise, so does market concentration. If both decline, so does market concentration. The problem lies in the mixed cases. Where economies of scale rise while entry barriers decline, concentration trends are U-shaped. Lower entry barriers lead to competitive entry. Eventually, rising economies of scale counteract, create instability, and then lead to higher concentration, ultimately

(p.140) greater than before due to the impact of the economies of scale within mature markets.

The opposite trend is when economies of scale decline while entry barriers rise. Then, concentration trends are in the shape of an inverted U. This can be seen in Figure 8-6, which shows one cycle followed by another.

Together, these cycles show an oscillation over time, with periods of rising concentration followed by periods of declining concentration. This is depicted in Figure 8-7. The overall axis for these oscillations is not horizontal when we consider that the economies of scale have a larger and long-term impact on the market. In that case the axis of oscillation rises.

In our analysis of one hundred industries, most exhibited the shape of a U in their concentration trends, and a rise beyond the initial level of concentration.

(p.141) Of the four major sectors of the information environment, mass media rose fastest, but from the lowest level. It was converging with the other three information sectors. This is not surprising, because the fundamental economic characteristics of mass media are becoming like those of the information sector as a whole: high technology driven; high fixed cost of capital equipment; rapid innovation cycles. As this happens, mass media converge to the rest of the information sector not only technologically, but also in terms of market characteristics, including concentration. This trend is depicted in Figure 8-8.

(p.142) Conclusion

How will these dynamics play themselves out? The likely shape of the future media Industry is a hierarchy:

- A few "integrator" firms, based on high economies of scale and high entry barriers.
- Many small satellite content providers, based on low economies of scale and low entry barriers.
- Together, they form a "hub-and-spoke" model of media: a few central integrator firms centered around distribution, and numerous "long tail" firms in their orbits providing specialized content or products.

For the key integrator segment, the economic equilibrium is a high concentration level; governmental rules are needed if this structure is to be changed. Simply having antitrust regulations is not enough, and regulatory approaches to slow, prevent, or ameliorate concentration might emerge. But for the other segment, the opening provided by new technology and entrepreneurialism is a strong mechanism for competition.

Thus, both media Cassandras and Pollyannas have some parts of their assertions validated, for parts of the media sector and for certain time

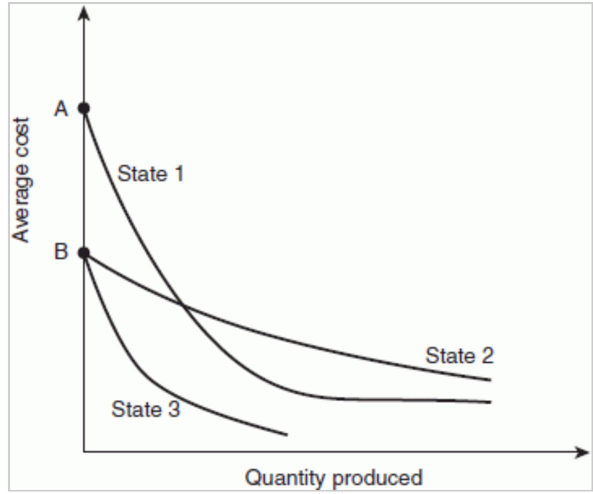

Figure 8-4. Economies of scale and entry barriers.

		Scale economics	
		Rising	Declining
Entry barriers	Rising	Higher concentration	*Inverted-U concentration trend*
	Declining	*U-shaped concentration trend*	*Lower concentration*

Figure 8-5. Concentration trend: Impact of scale economies and entry barriers.

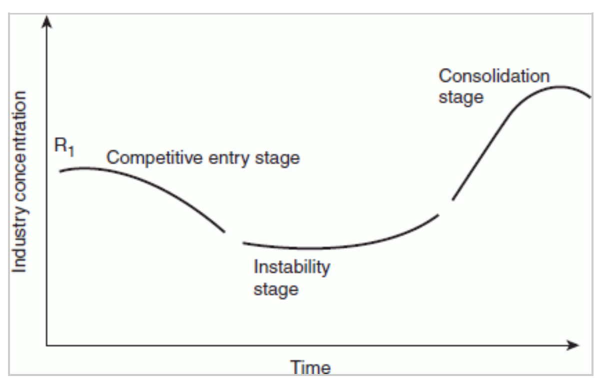

Figure 8-6. Cycles of concentration.

periods. The problem is that they extend their interpretation to the entire information sector. They are so assured of their respective premises that they are reluctant to engage in the work of data collection and interpretation. Those tasks are less glamorous and more labor intensive than certitude and strong pronouncements in defense of democracy on one side, and of free markets on the other side. But certitude is no substitute for research. When scholarship and activism blur, both suffer in quality and use up the credibility of the university, which has been built up over generations. Thus, before those of us in the academic world glibly denounce the policy world as uninterested in data and evidence, we must earnestly look at ourselves for the same symptoms.

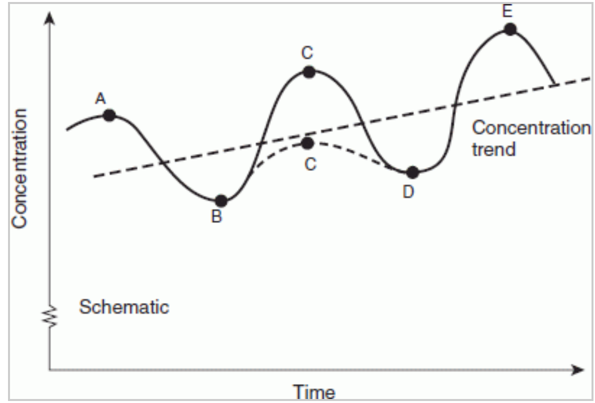

Figure 8-7. Concentration trends, with continuously rising scale economies and declining entry barriers.

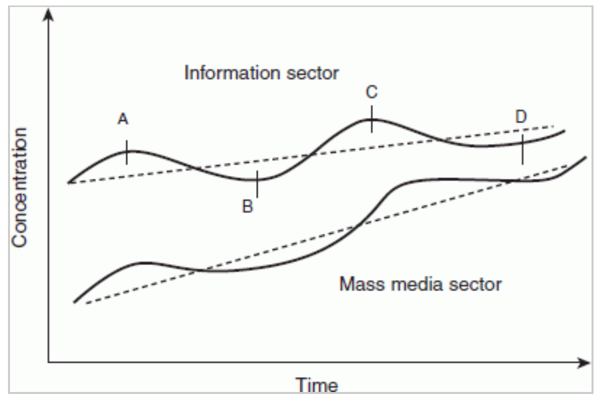

Figure 8-8. Convergence of concentration of overall information sector and mass-media sector.

Notes:

(1.) Ben Bagdikian, *The New Media Monopoly* (Boston, MA: Beacon Press, 2004). e-link

(2.) Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (New York: Penguin, 2004). e-link

(3.) Robert W. McChesney, *The Problem of the Media: U.S. Communication Politics in the 21st Century* (New York: Monthly Review Press, 2004). e-link

(4.) Adam D. Thierer, *Media Myths: Making Sense of the Debate over Media Ownership* (Washington DC: Progress & Freedom Foundation, 2005). e-link

(5.) Benjamin M. Compaine and Douglas Gomery, *Who Owns the Media? Competition and Concentration in the Mass Media Industry*, 3rd ed. (New Jersey: Erlbaum, 2000). e-link

(6.) Edwin C. Baker, *Media Concentration and Democracy: Why Ownership Matters* (New York: Cambridge University Press, 2007). e-link

(7.) Eli M. Noam, *Media Ownership and Concentration in America* (New York: Oxford University Press, 2009). e-link

(8.) Antitrust enforcement guidelines classify markets:

HHI < 1,000 Unconcentrated Market

1,000 < HHI, Moderately Concentrated Market

1,800 < HHI, Highly Concentrated Market