The Internet Concentration

Zoé Battello - Alice Gangneux

Three Studies

The Internet : Still Wide Open and Competitive ?

Eli Noam - 2003

Key issues for a research agenda on industrial structure in Internet markets

Donald Hay - 2003

Competition in Internet industries : evidence from e-retailing

Michael Baye, John Morgan - 2003

The Internet : Still Wide Open and Competitive?

Eli Noam - August 2003

Introduction

- Open ? Free ? Competitive?
  -> Becoming concentrated

- Dominated by a few firms

- Early phases : dominated by government, universities and non-profit entities

- Internet the major force for economic, societal and cultural innovation in society

Eli Noam
Professor of Economics and Finance
Columbia Business School

Internet market concentration

- Current study at the Columbia Business School

- Media concentration in the internet sector, trace it over time and compare it

- **Internet sector :**
  - The entire economy?
  - Core industries for basic functioning
  - **Excludes :** applications, content, computer hardware, generic telecom/cable conduits
  - **Includes :** backbone, ISP, Broadband providers, portals, browser software, search engines, media-player software, IP

Herfindahl-Hirschman Index (HHI)

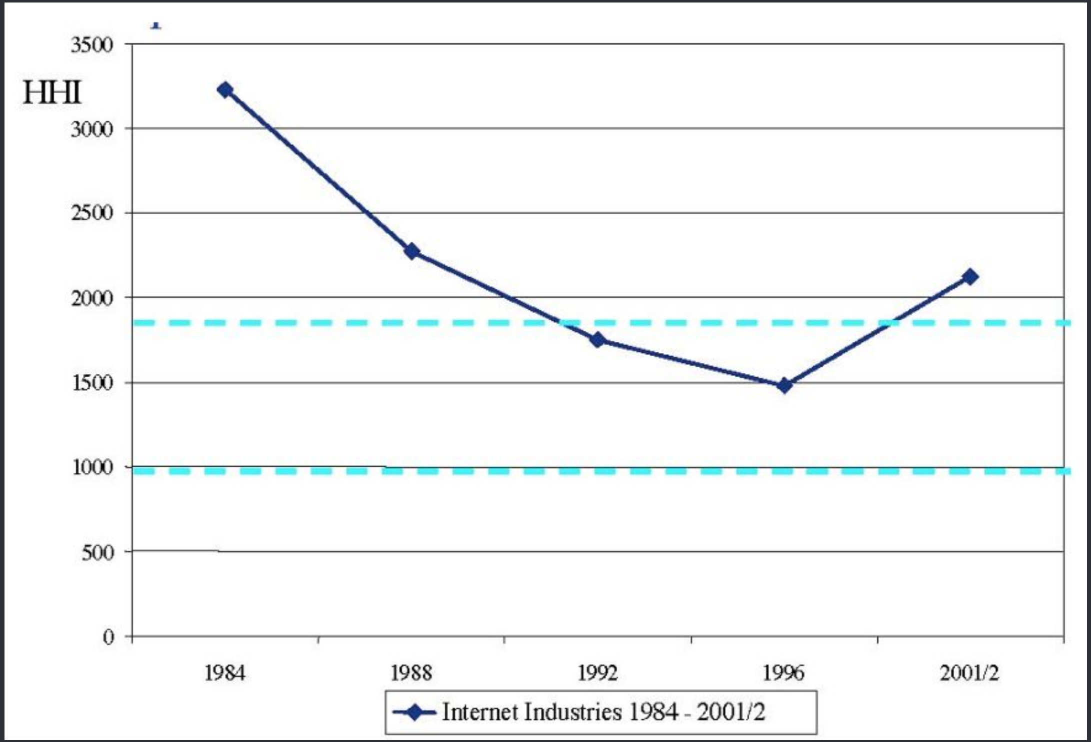
- Tracking revenue, calculated individual firm’s market shares -> **concentration indices**
- Period of twenty years, starting in 1983/1984 if possible
- Huge database

$$HHI = \sum_{i=1}^{f} Si^2$$

- HHI < 1000 -> Unconcentrated
- HHI > 1000 -> Moderately Concentrated
- HHI > 1800 -> Highly Concentrated

f = number of firms in the industry   S = firm’s market share

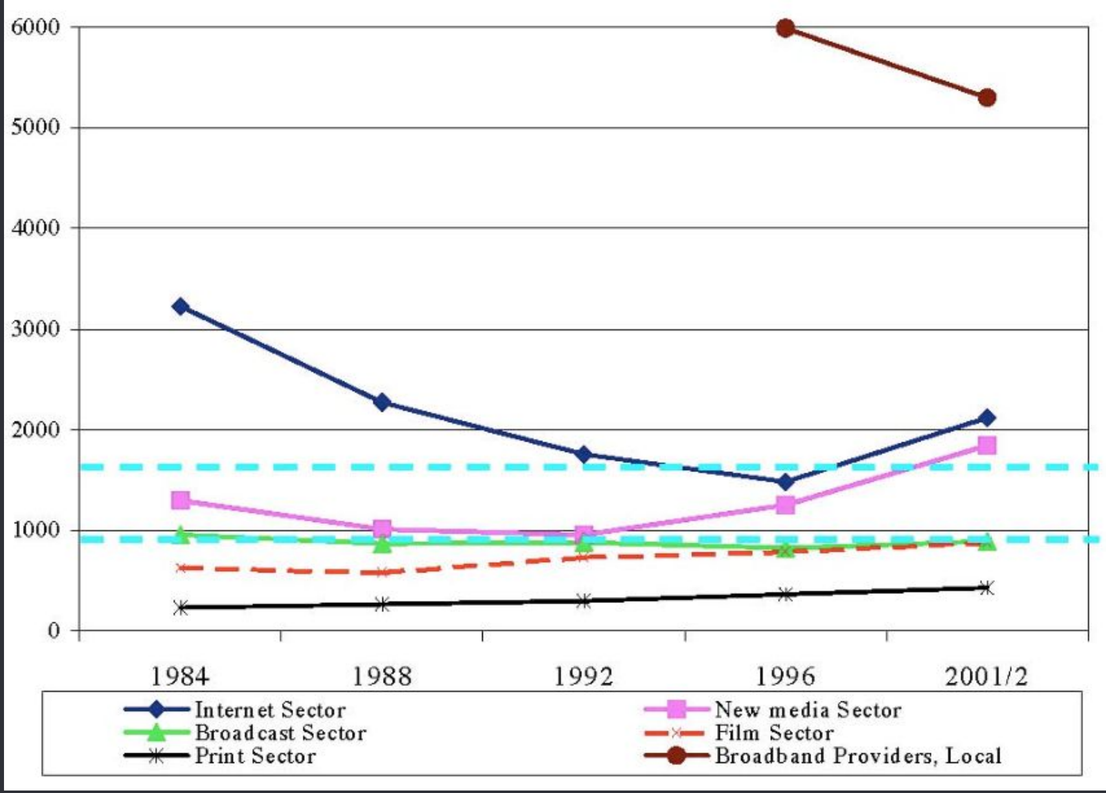
Internet concentration



- ‘U’-shaped curve
- Concentration as never
  Been low
- Declined in the 80’
- Increased in the 90’
- In 2003 not a fragmented/competitive Internet

Concentration Trends of Various Media

- The newer the medium the more concentrated it is
- Print media relatively Unconcentrated
- Broadband : riskiness instability

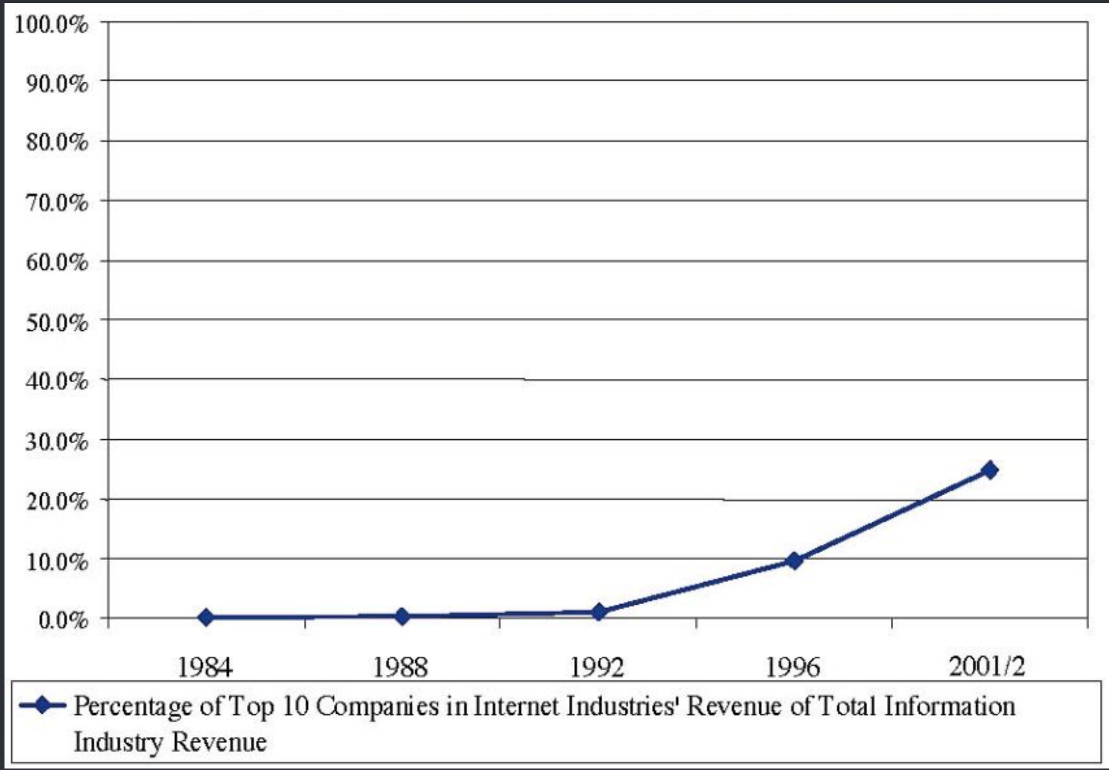


Vertical Concentration

- Firms in several markets

- Merger of major firms

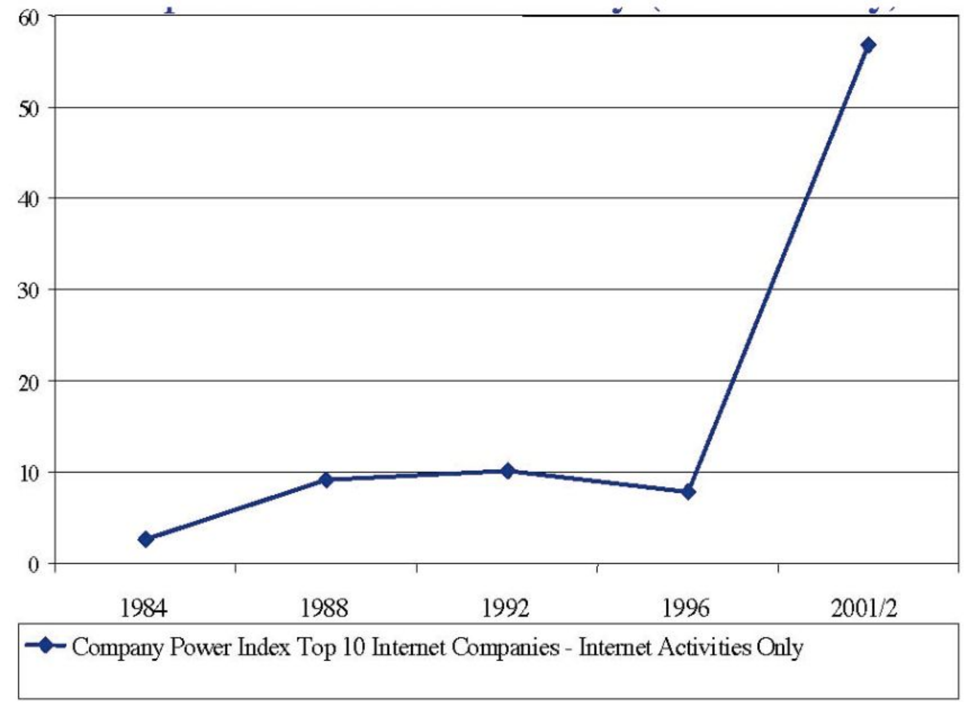
- In 2002, 10 firms made more than 20% of the total information industry revenue



The Power Index

- Top internet firm's HHI scores across **several** Internet industries
- **Increase** in participation in multiple Internet industries
- **Positive externalities :**
    - High fixed costs
    - High economies of scale
    - Low marginal costs

-> rapid expansions, intense competitions



$$CPI_{industry} = \sum_{i} CPI_{firm} = \sum_{i} \sum_{j} \frac{Sj^2\, mj}{M}$$

mj -> total revenue of submarket
M -> revenues of total information sector

Sj -> firm's share in market
j -> sub-industries

i -> firm i of main Internet firms

Implications for the internet industries

- **Similar concentration trend :** e-commerce applications, operating system software, microprocessors, microcomputers and workstations, telecommunications

- **Effects :**
    - Higher user prices
    - A slowing of innovation
    - Stabilisation of the major Internet firms
    - Increase of power for the major Internet firms
    - Emergence of regulation to deal with such power

These findings and conclusions may not fit the Internet's self-image of being wide-open and competitive, but business strategies and public policies will benefit from a realistic rather than wishful assessment.

Key issues for a research agenda on industrial structure in Internet markets

Donald Hay - November 2003

A rich agenda for further research

- **Donald Hay**
  Head of the Division of Social Sciences
  Department of Economics
  University of Oxford

- The determinants of the long-term equilibrium market

- The processes of entry, competition and exit that have shaped the evolution of the industry to this point.

The long-term equilibrium market

Technology

-Process

-Product characteristics

Interaction

Nature of competition

-Price

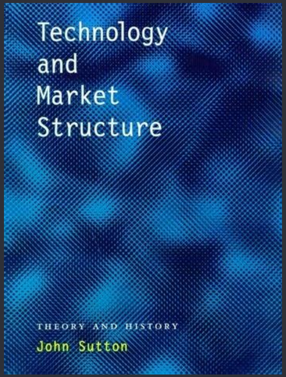
-Quantity

-Product quality

John Sutton

-*Sunk costs and market structure*, 1991

-*Technology and market structure*, 1998



A possible scenario

Exogenous sunk costs	**Endogenous sunk costs**
Minimum economic scale of plants	Expenditures on the product Increase the quality
Concentration is lower	Concentration is higher

€ € €

Process shaping Internet markets

1. A range of market opportunities for potential entrants.
2. The market game begins.
3. Low-quality offerings will lose market share and exit the market.
4. Remaining firms will continue to invest in product quality and capacity
5. Long-term equilibrium

The emerging need for regulation

What form regulation might take ?

Antitrust (competition) policy

Who should regulate ?

National antitrust jurisdiction

Competition in Internet industries : evidence from e-retailing

Michael Baye, John Morgan - November 2003

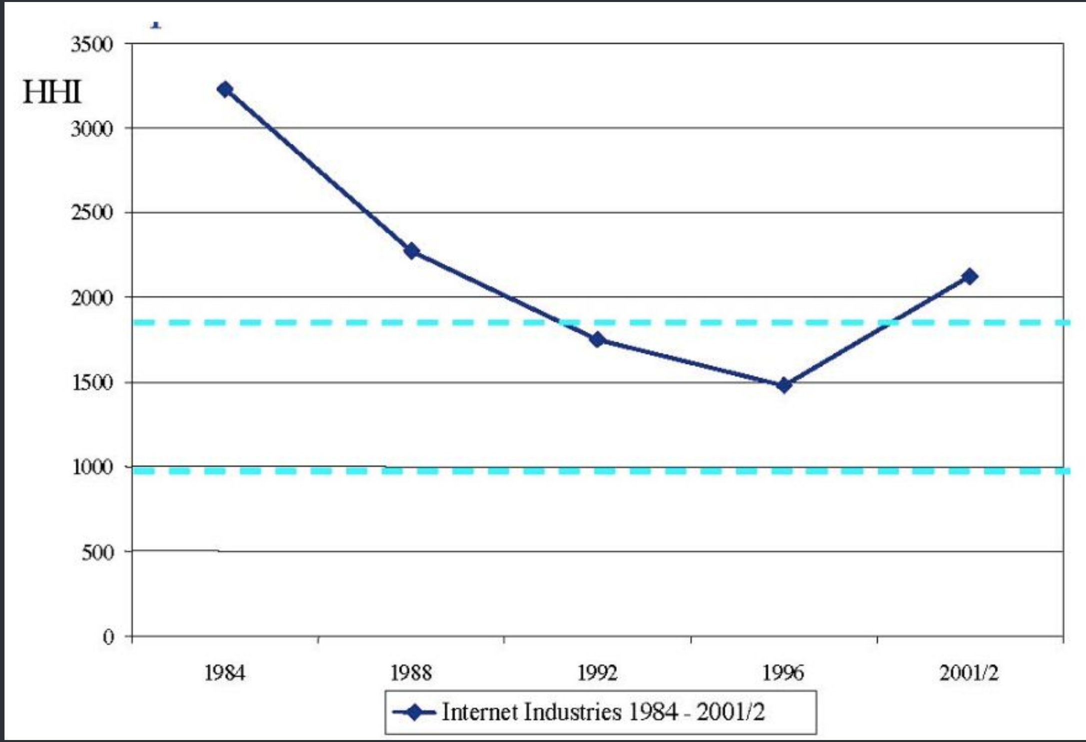
Context and e-retailing

Michael R. Baye
Bert Elwert Professor of Business Economics and Public Policy
Kelley School of Business
Indiana University

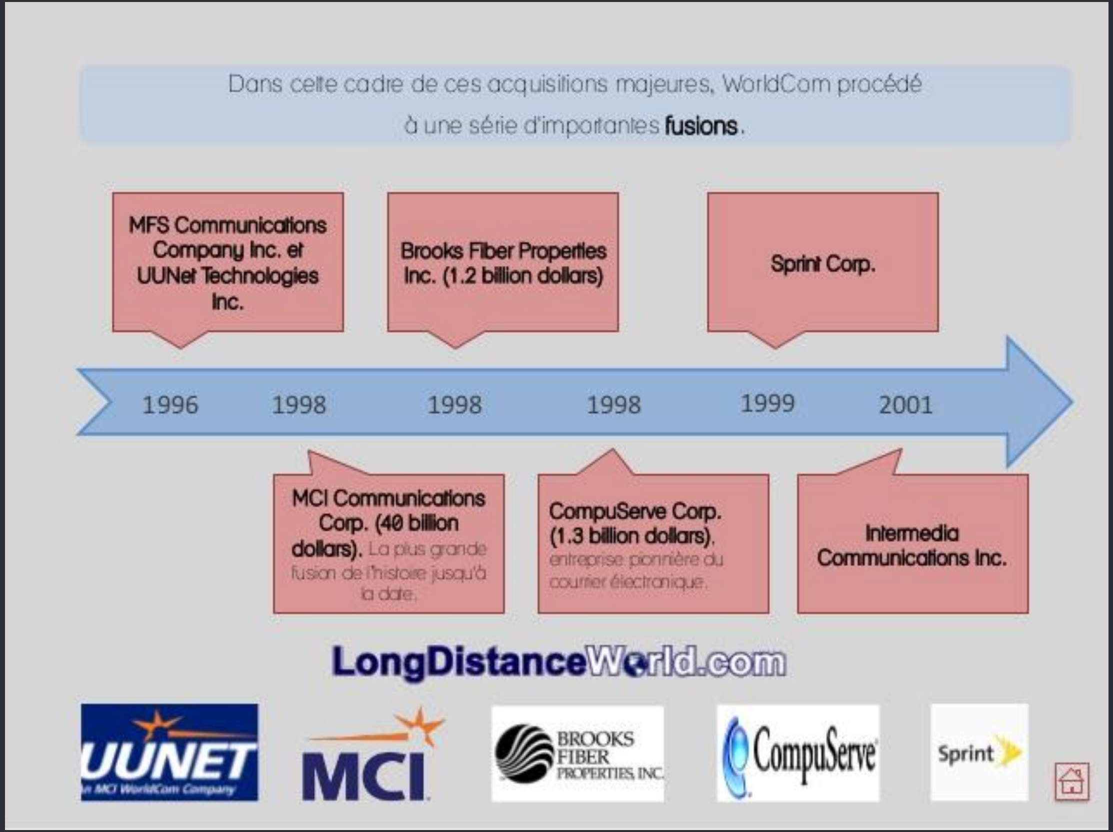
John Morgan
Professor of Business and Economics
Haas School of Business and the Department of Economics
University of California, Berkeley

Retailing
The activity of selling goods to the public in stores or on the internet

Reasons for increased concentration since 1996



Reasons for increased concentration since 1996



E-retail markets

Michael R. Baye
John Morgan
Patrick Scholten

Indices Graph

These data are from a real-time project with John Morgan and Patrick Schoten that ended when Baye went to the Federal Trade Commission.

measure 1:	measure 2:	time span:
Internet Competitiveness	None	Year

automatic graph

Internet Indices as of June 30, 2007

Index	This Week	Last Week	Change	% Change
Internet Competitiveness	101.32	99.82	1.50	1.50
Price Gap	1.84	1.92	-0.08	-4.17
Market Thickness Index	122.81	125.71	-2.90	-2.31
Relative Dispersion	10.04	10.02	0.02	0.20
Price Range	40.83	40.34	0.49	1.21
Value of Information	16.40	16.22	0.18	1.11

Internet Competitiveness This Week:
The **Internet Competitiveness Index** increased to 101.32 this past week. This increase in competition means that sellers are likely to adjust their pricing strategies.

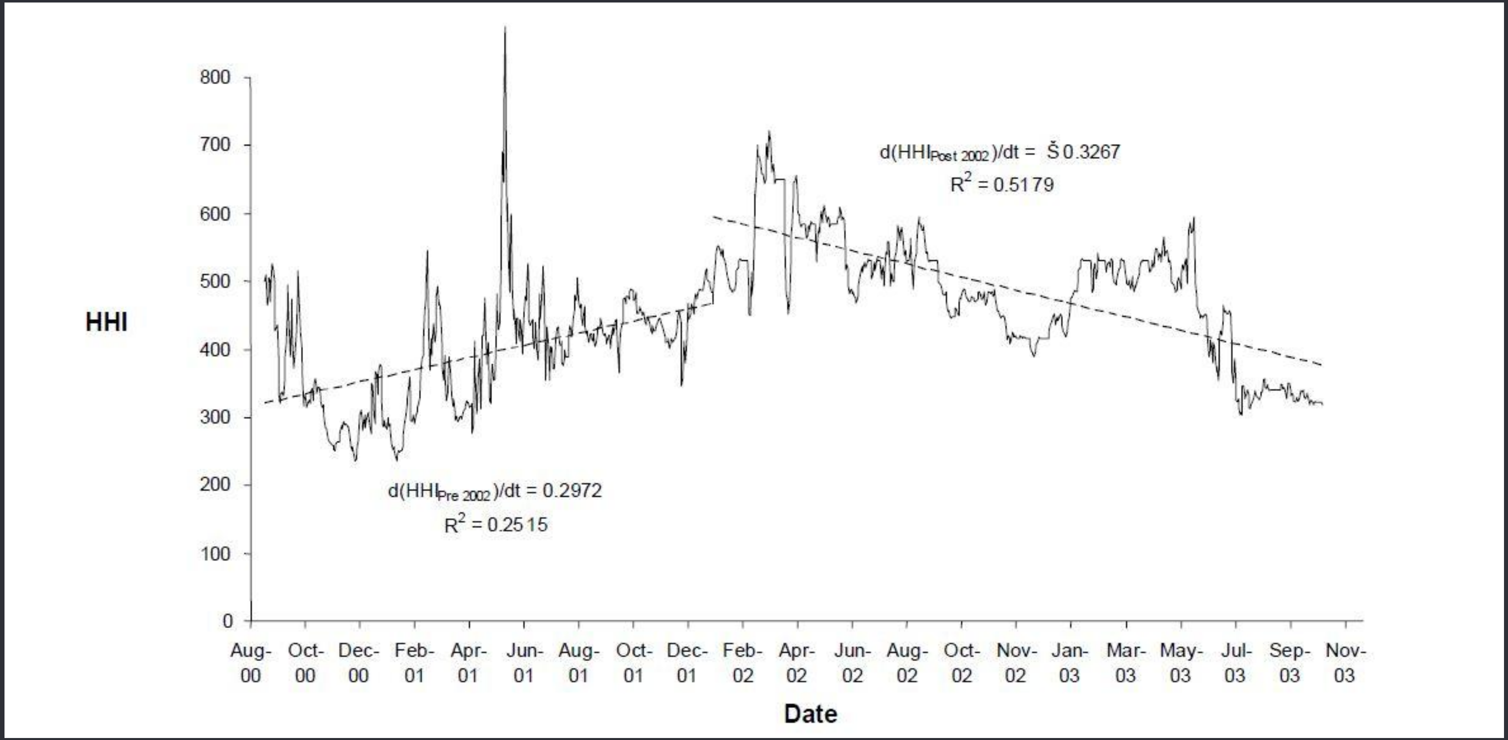
What is Internet Competitiveness?
The Internet Competitiveness Index is a comprehensive measure of the level of competition. Increases indicate more competitive pricing, while decreases indicate a lessening of competition.

Did you know?
This research is featured in the Wall Street Journal, New York Times, and Forbes. Information about these articles is contained under selected media coverage.

Tip for users:
You may click a measure in the above table to graph its historical values, or click a column header to sort values.

www.nash-equilibrium.com.

Concentration (HHI) of E-Retail Sector, 2000-2003



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Conclusion

-Data from the e-retail sector suggests that the trend toward increasing concentration in the Internet sector may be slowing or even reversing

-One must be careful not to lump different sectors of the new economy into the same pot.

Thanks!

ANY QUESTIONS?