

Networks, communities and the battle for attention

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NYC in the 1890s: a world much like ours

- Technological revolution
- A changing economy
- Surging immigration
- Rising affluence – but a growing gap between rich and poor
- A fragmented society
- Enormous media choice
 - 29 daily newspapers in 8 languages
 - 11 financial & legal dailies
 - hundreds more



The New York World building

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A newspaper war: Pulitzer's "World" vs. Hearst's "Journal"



- Joseph Pulitzer's "World," a journalistic and technological innovator, was the largest paper
 - Sunday circulation (late 1895): 450,000
- 1896: William Randolph Hearst, after success at the San Francisco "Examiner," came to New York and purchased the "Journal."
 - Sunday circulation (late 1895): 30,000
- Hearst's main challenge: earning attention in a crowded information marketplace.

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Attention: The scarcest resource of Hearst's time (and ours?)

- Our definition today – a person's (or group's) "share of mind" over a period of time
- Reflects both exposure (time) and intensity of involvement (engagement or focus)
- Michael Goldhaber: attention as "aligning of minds"
 - The "attention economy" operates under different rules than the capitalist, market-based economy
- Attention is finite
 - Media must compete for it vs. family, work, friends ... even daydreaming and sleep
- The more media choice, the harder it is to capture

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How Hearst won the battle for attention: the traditional story

- Gave readers more for their money
- Hired away the Journal's top staff
- Color and comics ("Yellow Kid")
- A new formula for news:
 - Big headlines, large photos
 - Lurid crime stories
 - Photos of attractive women
- Mixing of journalism and politics
 - Spanish-American War
 - William Jennings Bryan for president



Journal editor
Arthur Brisbane

"Perhaps headlines do take up too much space. ... But in a busy nation the first necessity is to attract attention."

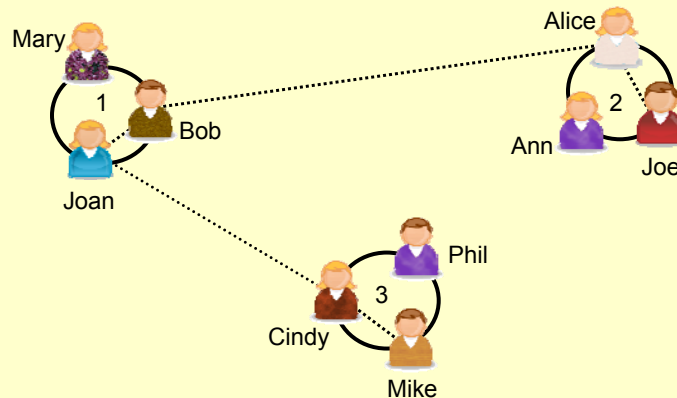
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The science of networks: a powerful framework for looking at media

- Its roots: 18th century mathematics
- Understanding of networks has exploded in the past decade – with applications to many disciplines:
 - psychology, sociology, biology, neurology, ecology, business, marketing, political science and more
 - Northwestern researchers: leaders in this field
- Why now? A: The World Wide Web – the first transparent, persistent network

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The first wave of network science: Interpersonal networks



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What we know about interpersonal networks

1. People cluster together: if I am your friend, and you are Mike's friend, there is a very good chance I am Mike's friend, too
2. Interpersonal networks are "small worlds" – in general you can connect any two individuals through a small number of "hops" or "handshakes"
3. Connectors are the reason that "small worlds" exist. They are likely to have a much larger group of friends and acquaintances than most people.
4. These connectors are network hubs that connect clusters to one another.
 - Without connectors, interpersonal networks would have more than "six degrees of separation"

Source: Albert-Laszlo Barabasi, [Linked](#)

The architecture of interpersonal networks isn't limited to friendship circles

- This model also has helped network researchers understand:
 - Networks of actors: the [Oracle of Bacon](#)
 - Authorship networks: Scientists who publish work together
 - Professional networks
 - Sexual networks (the spread of venereal disease)
- All are “small worlds”
- In each case, connectors (network hubs) are critical to “shrinking the distance” between individuals (network nodes)

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The second wave of network science: Content networks

- Researchers were limited in their ability to understand networks
 - few can be fully mapped and analyzed as data
- The World Wide Web, for the first time, created a content network that can be captured (with a Web crawler) and mapped
- In the late 1990s, researchers began analyzing the Web network and comparing it to interpersonal networks

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What researchers learned about the World Wide Web

1. Web sites cluster together: if my site links to yours, and your site links to Mike's, there is a very good chance my site links to Mike's, too
2. The Web is a "small world" – in general you can connect any two sites through a small number of "hops" or "handshakes"
3. Connectors are the reason that the Web is a "small world." These are the Web sites that are most likely to be linked to other sites
 - 80% of Web links go to 15% of Web pages*
4. These connectors are network hubs that connect network clusters to one another.
 - These sites also tend to get a disproportionate share of Web traffic

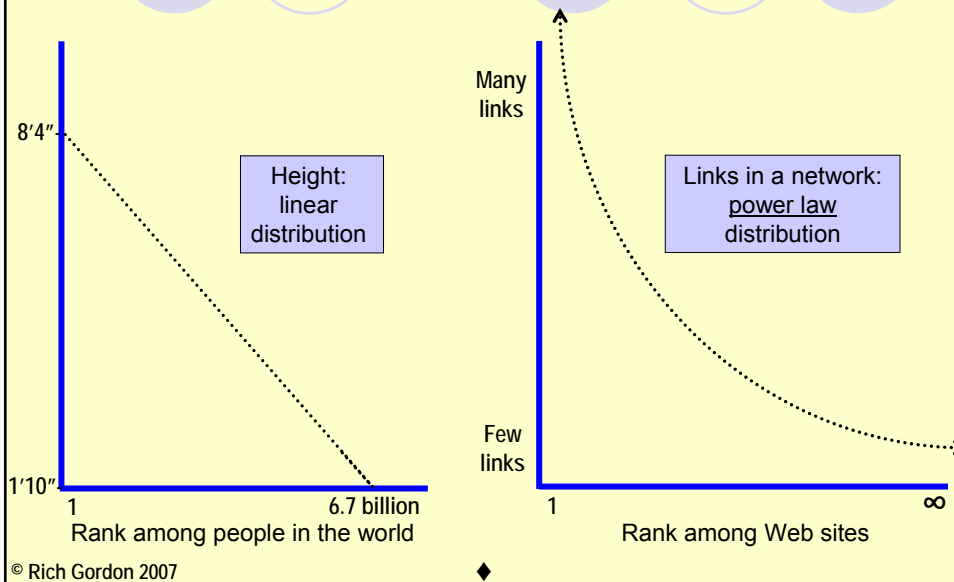
* Albert-Laszlo Barabasi, [Linked](#)

The next question: How are hubs created?

- Research into the WWW network concluded that hubs result from:
 1. Growth: The network must be growing – new nodes must be added regularly
 2. Preferential attachment: The more connections a node has, the more likely it is to attract other connections. ("The rich get richer.")
- These conditions apply both to interpersonal networks and the WWW content network
- Hence, both kinds of networks develop hubs

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The mathematics of hubs: the network difference



Conclusion: On the World Wide Web, attention is aggregated through networks

- Content links between Web pages guide people to relevant content.
- Search engines rely on links to build their algorithms to deliver relevant search results.
- Interpersonal networks (online communities, social networking sites) on the Web:
 - guide or alert people to content
 - strengthen bonds between people, nurturing common interests
 - build “buzz” about content, products, services
- Network science helps explain why “the rich get richer”: why some sites explode in popularity

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Not just the Web, not just today: Hearst used networks to build attention

- Hearst was a master at becoming a hub for attention in New York
- Among his networking strategies:
 - Hired cartoonists, writers (Mark Twain, Stephen Crane) to attract their readers
 - Developed content to attract new audiences
 - expanded sports coverage beyond interests of upper class – baseball and boxing
 - added coverage of “marriage, divorce, Paris fashions, problems in homemaking as well as jobs in the workplace” [Ben Proctor, *William Randolph Hearst: The Early Years*]
 - Actively involved the Journal in the local community



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“While Others Talk, the Journal Acts”

- Hearst built goodwill (and attention):
 - Distributed coffee and sandwiches (and sometimes sweaters) to the hungry and unemployed
 - Raised money for the family of a slain cop, for the homeless, for 40 families whose tenement burned
 - Encouraged contributions for causes by listing the names of individual donors in the Journal
- Hearst sponsored attention-getting events:
 - A parade in honor of the Greater New York charter
 - Bicycle transcontinental relay race (SF to NY)



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Hearst was an early user of what we now call viral marketing



- Reader contests:
 - 10 bicyclists who got people to vote for them got an expenses-paid monthlong bicycle trip in Europe
 - Journal offered prizes to the first 10 readers who could identify youthful pictures of 11 famous people
- In advance of a feature on an unfaithful husband:
 - Women were sent postcards from “A Friend” suggesting they read the Journal to learn more about their husbands.

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Hearst's most important network-building was with immigrant communities



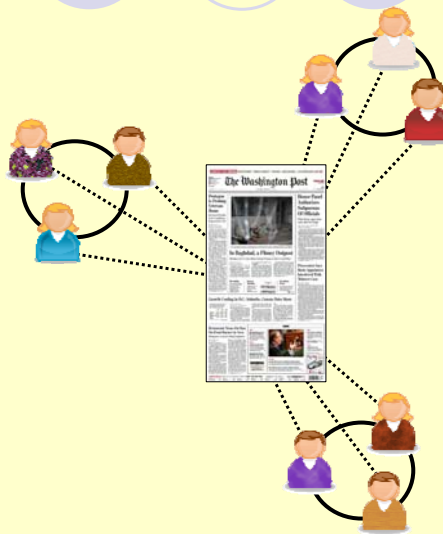
- Recent immigrants outnumbered more established New Yorkers
- Pulitzer was hostile to the new immigrants, Hearst was welcoming
 - Big headlines and photos were easier for people with weaker English skills
 - His crusades and political activities were positioned as serving the disadvantaged
 - Opposed high milk prices, demanded fire protection for tenements, promoted public parks, supported unions

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In the mass media age, networks became less important

- Because of technology constraints ...
 - Cost of presses
 - Limited broadcast spectrum
- ... media choice was limited ...
- ... and it was relatively easy to capture a large amount of attention.
- Results: large audiences, handsome profits



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How today's world is different from Hearst's and from the mass media age

- Endless competition for attention
 - More like Hearst's world than the one we grew up in
- Content is increasingly likely to be digital
- Content networks (links) are now:
 - Transparent (they are easily visible to all)
 - Persistent (they remain live for an extended period – perhaps forever)
- Interpersonal networks now can also be transparent and persistent
 - Bloggers who frequently cite and comment on one another
 - Social networking sites like MySpace, Facebook, etc.

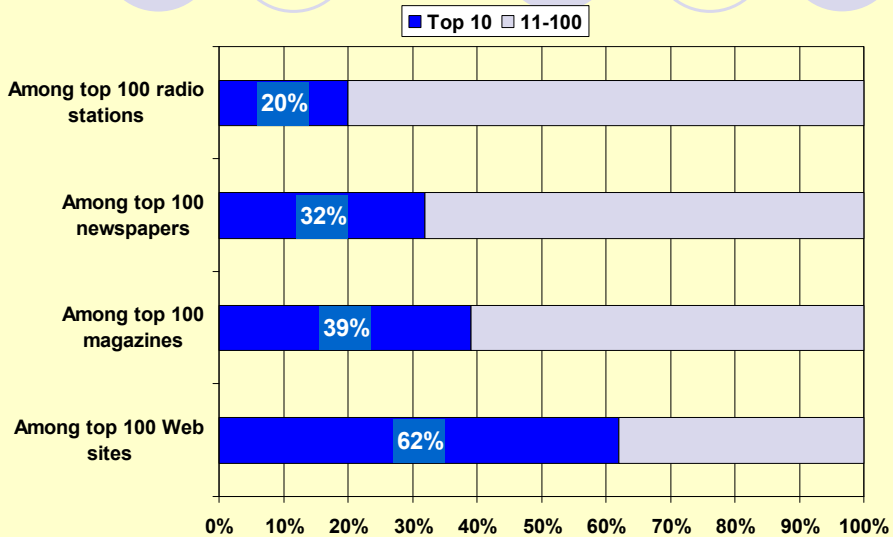
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The digital consequences: Greater concentration of attention

- One might think that the amazing content choices offered by the Internet would distribute attention more widely than in traditional media
- But surprisingly, online attention is even more concentrated than traditional media usage
 - Links (and consequently, traffic) are distributed according to a power law
 - The most linked-to sites get a disproportionate share of links and traffic

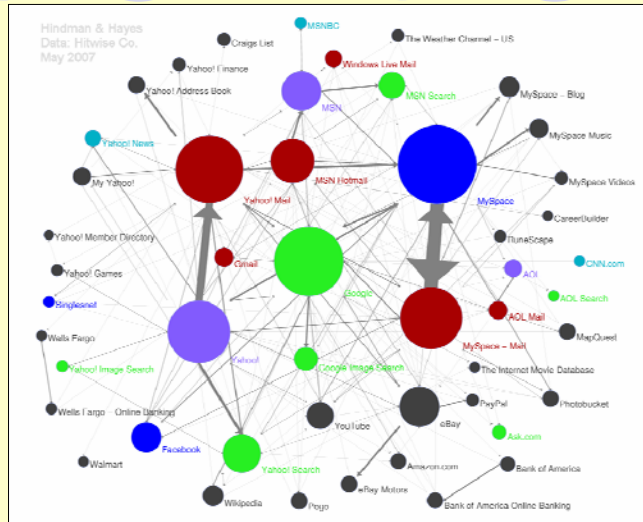
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Audience share: first 10 of top 100 outlets in four media categories



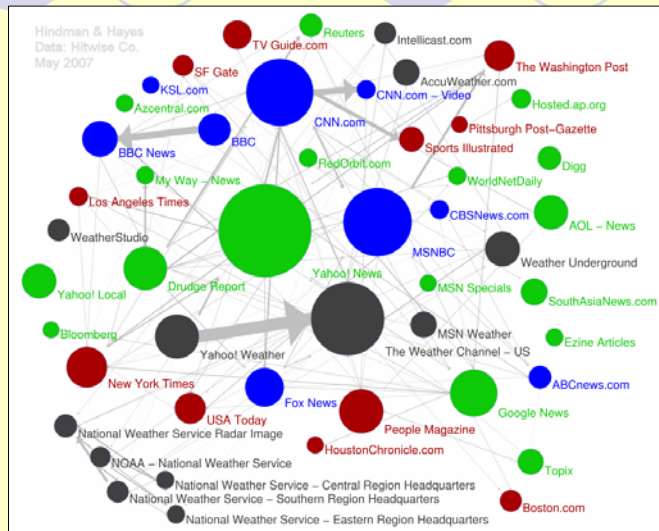
Source: Matthew Hindman, "A Mile Wide and an Inch Deep: Measuring Media Diversity Online and Offline"

The top 100 Web sites: a graphical look



Source: Matthew Hindman, matthewhindman.com

The top 100 news and media Web sites: a graphical look



Source: Matthew Hindman, matthewhindman.com

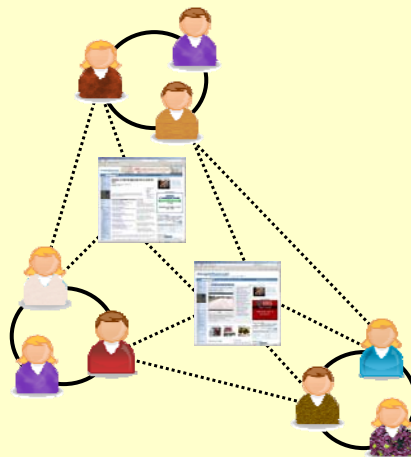
Digital media strategy: build networks, not products or destinations

- In the mass media age, where disproportionate benefit accrued to mass-market products, competitive advantage was achieved by building **products or destinations**
 - Content & advertising in a package
- In the digital age, where disproportionate benefit accrues to the people and sites who connect people and content, competitive advantage is achieved by serving as ... **network nodes**

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Applying the science of networks to digital publishing

- Think of content and consumers as network nodes
- Links are established:
 - When consumers pay attention to content
 - When content is linked to content (and attention is thereby redirected)
 - When people make interpersonal connections
- Content providers win by facilitating links – and becoming hubs



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Digital content networks: Blogs are today's best examples

- Links: the key characteristic of a blog
- One link from a “super-blogger” (Instapundit, Talking Points Memo, The Daily Kos, BoingBoing) can drive huge traffic
- Entrepreneurs can build substantial media businesses via a network (linking) strategy:
 - Techcrunch.com (staff of 1): \$700,000/year in ads
 - Boingboing.com (staff of 4): \$1 million/year
 - Paidcontent.org (1 person at launch): >\$1 million/year

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Source: Business 2.0, March 2007

Content networks: Strategies for building connections

- Don't have only a “destination mindset”
- Two principles:
 - Attract links from other sites that bring people to yours
 - Once you have their attention, guide people to other relevant content
- Linking fundamentals:
 - Link out – a lot. Especially to blogs.
 - Link IN – to related content of your own
- Implications: Open up your archives, cross-index archival content

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A network-building approach can work within niches – e.g., local

- D.F. “Dave” Oliveria writes the “Huckleberries Online” blog [www.spokesmanreview.com/blogs/hbo/]
- Results: 150,000+ pageviews/month
- How he drives traffic
 - A lengthy “blogroll” linking to other regional bloggers;
 - A roundup of [reactions](#) to major news stories;
 - Photo caption [contests](#);
 - A regular feature on “[best of the local blogs](#)”
 - Nature [photos](#);
 - Breaking [news](#);
 - [Questions](#) for his readers to respond to;
 - Lots of reader [comments](#)
 - A 4-inch excerpt runs 5 days a week in print



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Traditional media sites have resisted content networks

- In the early days of the Web, a number of sites (PBS, Dallas Morning News, etc.) tried to prohibit other sites from “deep-linking” to inside pages
- Even now, outbound links are rare
- And inbound links would be more plentiful if news sites linked out more often
 - Especially to blogs, because bloggers monitor who is sending them traffic

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The YouTube story: Network-building beyond links

- In less than 2 years, YouTube became worth \$1.65 billion
- What was the single innovation that drove attention to YouTube most effectively?



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And there are other ways to connect content

- Email newsletters
- RSS feeds can be republished on other sites (and/or delivered via feed-readers)
- Searchable databases can be syndicated (via “widgets”)
 - Example: Allentown Morning Call “puppy mill” [project](#)

Large Version (300 x 265)

Search breeders and kennels.
Use the options below to search reports for breeders and kennels in Pennsylvania.

Choose a county:

Then choose a kennel:

* [Click here to use this search widget on your site.](#)

mcall.com
THE MORNING CALL online

Copy and paste the code below onto your web site.

```
<iframe frameborder="0" id="breeder_search_widget" name="breeder_search_widget" marginheight="0" marginwidth="0" scrolling="no" src="http://www.mcallcommunity.com/newsroom/searches/?i=" width="300" height="265"></iframe>
```

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Other means of building content links

- Lists of most popular, emailed stories
- Recommendation engines
 - “Others also read ...”
- “Web 2.0” sites where users can rate content
 - Digg, NewsVine, Del.icio.us
- Washington Post:
 - “Read what bloggers are saying about this article” (via Technorati data)

WHO'S BLOGGING?

Read what bloggers are saying about this article.

- [the Daily Irrelevant](#)
- [Boing Boing: A Directory of Wonderful Things](#)
- [the Daily Irrelevant](#)

[Full List of Blogs \(13 links\) »](#)

Most Blogged About Articles

[On washingtonpost.com](#) | [On the web](#)

POWERED BY
Technorati

SAVE & SHARE ARTICLE [What's This?](#)

[Digg](#) [Google](#)
 [del.icio.us](#) [Yahoo!](#)
 [Reddit](#) [Facebook](#)

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Other means of building links

- License outbound links from companies such as Inform and Topix
- Do what C|Net does with search-generated [traffic](#)

Welcome Google User!

More headlines related to: "privacy chip recall":

- [Week in review: Lights! Camera! Download?](#)
- [Privacy in the age of transparency](#)
- [Homeland Security and you](#)
- [More matching headlines »](#)

[Hillary Clinton on Topix.net](#)

[New York Senate Endorses Feb. 5 Primary](#)

[Clinton a hit on YouTube](#)

[Mystery creator of anti-Clinton ad ID'd](#)

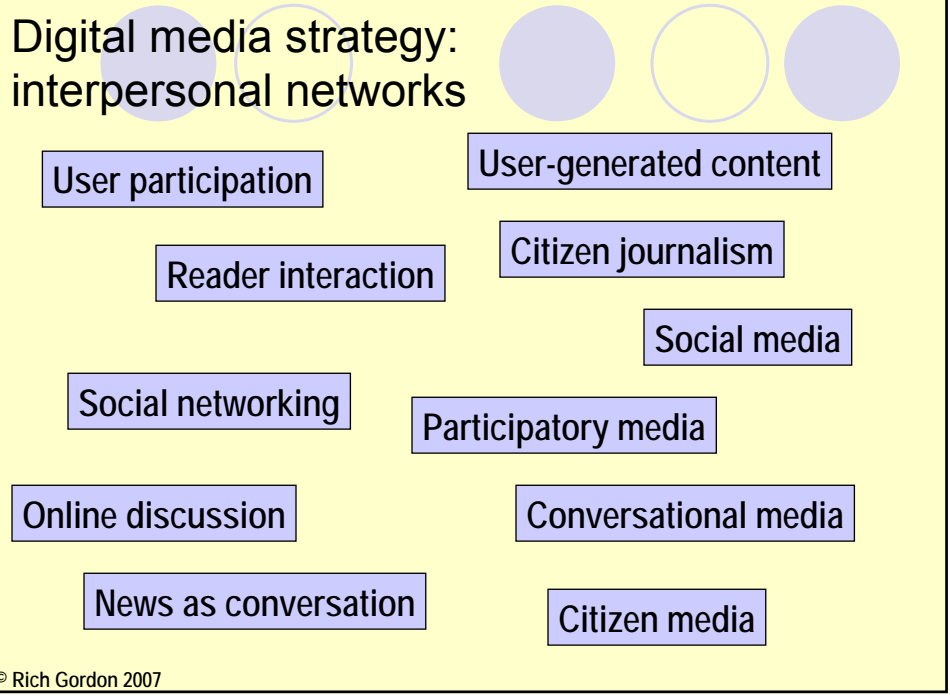
[Mystery creator of anti-Clinton ad ID'd](#)

[Anti-Clinton Web Ad Draws Attention](#)

[More...](#)

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Digital media strategy: interpersonal networks



What it all adds up to



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For newspapers, this is not new

- 1690: First U.S. newspaper had a blank page for readers to pass along their own news
- 1890s-1920s: Sociologists (Gabriel Tarde and Robert Park) documented newspapers' essential role in forming community
 - Park wrote about Hearst's success with immigrants



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Even for digital services, it's not new

In Miami in **1983**, Knight Ridder's Viewtron videotext service found:

- "The services that consistently had the most loyal followers were the electronic mail and CB sections, which like citizen band radio made it possible for users to interact anonymously with each other in real time."
- "[J]udging from the content of the public messages and the assumed identities, most of the participants were probably teenagers."



-- Roger Fidler,
"Mediamorphosis:
Understanding New Media"

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Digital media history: Online communities drive success

- 1980s-90s: AOL builds its business on online chat and discussion (with per-minute billing)
- 1997: Internet communities hit the mainstream
- More recently:
 - Social networking
 - Virtual worlds (Second Life)
 - Multiplayer games – more profitable, research shows
- Where have news organizations been?



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Case study: User comments in Racine

- 5/05: Racine (WI)
Journal Times begins publishing news on a Weblog platform allowing user comments on every story
- Results in two years:
 - 200+ comments per day
 - Pageviews tripled
 - Frequent visitors doubled



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Case study: Spotted [Morris Communications]

- “We Spotted” – event photos taken by newspaper staff
- “You Spotted” – user-generated
- Very inexpensive – most newspaper photographers are interns or volunteers
- Spotted generates up to a quarter of page views on Morris’ newspaper sites
- Each Spotted visitor averages 27 page views per month, compared to 5.5 for news site visitors
- One lesson: value of linking virtual and real worlds



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Why cultivate user participation?

- It builds loyalty and engagement
 - Northwestern research for Online Publishers Assn. found that the “Looks out for people like me” experience is the no. 2 driver of Web usage
- “Looks out for people like me” includes:
 - The people who run this site really seem to care about their visitors.
 - This site has a strong sense of community to it.
 - This is a very interactive site.
 - This site offers a variety of different perspectives.

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Other experiences that drive usage

- “Connects me with others” – includes:
 - A big reason I like this site is what I get from other users.
 - I’d like to meet other people who regularly visit this site.
 - This site does a good job of getting its visitors to contribute or provide feedback.
- “Guides me to other media” – includes:
 - This site often leads me to other good sites.
 - I enjoy other media more because of this site.

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Keys to success in online community building

- Different thinking: You’re not a publisher, but a host or facilitator of community conversations
- Devote real staff time to this
 - The technology is the easy part
 - A garden needs tending: Successful communities need leaders, planners and facilitators
- Bottom line: It’s easy to fail

Wastelands

No one participates ...
because no one participates

Healthy
community

Free-for-all

Name-calling,
profanity, etc.

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What we're working on at the Media Management Center

- The center is launching a new multiyear research initiative entitled "New Communities: Redefining community in an age of social networks"
- We hope to:
 - increase understanding of online communities and networked journalism
 - understand what's new (and not) about social networking sites
 - share best practices
 - explore the ways journalism can benefit from, and contribute to, online communities

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Some questions we've been thinking about

- How can we better measure attention?
 - Size & demographics are no longer enough
- How important are print products to developing and maintaining attention?
- What's different about social networking sites and virtual worlds?
 - To what extent do the rules for success for older forms of digital community no longer apply?
- What motivates and inhibits participation in online communities?
 - What's the optimal mix of commenters and "lurkers"?
 - How should language be policed?
- How can local media connect with digital communities to build "social capital"?
- Can we monetize attention gained through online interpersonal networks?

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What more
should we be asking?

What are we not considering?
What more do you want to know?
How can we help you?