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# Media Policy: An Overview of the Field

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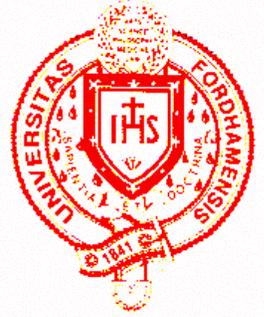
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**WORKING PAPER**

**HYPERLINKING AND THE FORCES OF  
“MASSIFICATION”**

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## Abstract

Research on media technologies frequently has illustrated the tendency for new media to adopt the structural and content characteristics of established mass media. This historical pattern is the outgrowth of a confluence of a wide range of economic and institutional forces. This paper considers the impact of hyperlinking within this process of “massification.” This paper explores the mechanisms by which hyperlinking may both facilitate and impede this process and offers conclusions regarding if and how the dynamics of linking may affect the process of media evolution.

### Hyperlinking and the Forces of “Massification”

An important component of the study of new media involves the investigation of the relationship between old and new media. Exploring how the introduction of new media impact (i.e., disrupt) old media, and how new media become integrated into the existing media system, can provide valuable insights that can guide policymakers, industry decision-makers, and scholars seeking to understand the organizational ecology of media, the evolution of media systems and media technologies, and the dynamics of media usage.

A key element of such analytical approaches involves understanding the economic and institutional pressures that are placed on any new media technology, and which ultimately can affect the evolutionary path of that technology – in terms of both the industries that develop around that technology and in terms of how consumers ultimately use the technology. A focal point of work in this vein has been on the question of the extent to which new media break beyond the confines of established media, in terms of factors including institutional structure, economics, and consumer behavior (see, e.g., Neuman, 1991; Winston, 1998). The Internet, certainly, has generated a substantial amount of attention in these regards over the past 10-15 years (e.g., Benkler, 2006; Lehman-Wilzig & Cohen-Avigdor, 2004; Morris & Ogan, 1996; Noll, 1997), as scholars from a wide range of disciplines have sought to understand the push and pull between the Internet’s undeniable revolutionary potential and the various influences and constraints imposed by the existing media system into which it has entered.

In my own efforts to address this issue in the Internet’s early stages of development (Napoli, 1998a) I focused on the then-unclear question of the extent to

which the Internet ultimately would demonstrate the characteristics of more traditional mass media, and what reasons might there be for the Internet to adopt many of the characteristics of traditional mass media, rather than evolve as the entirely unique and revolutionary medium that many were hoping for and anticipating in those heady early days. I dubbed those pressures compelling the Internet down more traditional media evolutionary paths the forces of “massification” reflecting the then-common argument that the Internet represented the end (or at least the beginning of the end) of traditional “mass” media. Fortuitously, this analytical stance toward the Internet, and its resultant predictive propositions, developed when the medium essentially was in its infancy, managed to hold some water in the ensuing decade, as the Internet has indeed come to serve many of the functions, feature many of the same institutions, exhibit many of the same audience behavior patterns, and provide much of the same content, as many of the “mass” media that have preceded it.

This essay revisits some of these claims in light of the current status of the Internet and enlarges the analytical frame with an eye towards teasing out exactly how the process of “linking” online may or may not factor into the “massification” of the Internet. The question of the role of hyperlinking in the development of the Internet is an interesting one for a number of reasons. First, along with the Internet’s inherently global reach and its virtually unlimited content capacity, hyperlinking is one of the key factors that distinguish the Internet from traditional media. Second, the dynamics of hyperlinking have evolved in a number of interesting and unexpected ways, particularly in terms of the mechanisms by which search engines choose to generate and display links. Finally, the underlying choices and dynamics of hyperlinking are, of course,

central to the distribution of audience attention (and, consequently, dollars) online and can therefore exert considerable influence over how the Internet evolves as a medium.

The first section of this paper provides an overview of the forces of “massification” that traditionally have exerted themselves over all new media (including the Internet). This section also considers recent developments online through this analytical lens. The next section looks specifically at the act of hyperlinking and how it may reinforce and/or undermine these forces of massification. This section draws upon the growing body of literature analyzing the patterns of hyperlinking online as well as recent developments involving the process of hyperlink selection and generation. The concluding section assesses the implications of the dynamics of hyperlinking for the evolution of the Internet, considers policy implications, and offers suggestions for future research.

#### New Media and the Forces of “Massification”

New media technologies do not exist in a vacuum. Rather, they enter into a diverse, complex, and dynamic mix of established and emerging media. Consequently, understanding any new medium requires an understanding of its interaction with the existing media environment, both from the standpoint of consumer adoption and usage (Lehman-Wilzig & Cohen-Avigdor, 2004), and from the standpoint of institutional responses (Napoli, 1998b). Such an approach requires not only a focus on the interactions between old and new media, but also on the key institutional and economic forces that act upon any new medium as it begins to carve out its place within the established media system. Many of these forces (often, the ones neglected by those providing the earliest assessments of new media technologies) in fact compel new media

technologies along evolutionary lines established by traditional media. It is these that I have labeled the forces of “massification” (Napoli, 1998a). These forces fall into three broad categories: a) audience behavior; b) media economics; and c) institutional forces. Each of these will be reviewed briefly here.

Before examining each of these forces, however, it is important to outline the basic criteria that we associate with “traditional or “mass” media. Detailed discussions of this issue can be found elsewhere (Napoli, 1998a; Neuman, 1991; Turow, 1992; Webster & Phalen, 1997); however, to briefly summarize, characteristics common of traditional mass media include: a one-to-many orientation (and an associated lack of interactivity); the prominence of “institutional communicators” (i.e., complex media organizations; see Turow, 1990); a strong commercial orientation; and an associated emphasis on audience maximization and, consequently, mass appeal content (see Napoli, 1998a).

#### *Audience Behavior*

Certain well-established aspects of audience behavior – across many media – can compel new media technologies to function along the lines of traditional media, particularly in terms of the extent to which audiences maintain strong connections with one-to-many and non-interactive communicative forms, as well as connections to content with traditional “mass” appeal (as opposed to highly-targeted and specialized niche content). There is, for instance, the well-documented tendency toward passivity in audience behavior (Webster & Phalen, 1997). There is a limit to the extent to which audiences want their media consumption to involve substantial interactivity or to involve substantial search activities, although certainly this limit can vary across media, as well as across usage categories and demographic groups.

From an audience behavior standpoint, it is also important to recognize that there is a well-documented tendency across media for audiences to prefer content with higher production budgets, with production budgets clearly serving as some sort of (imperfect) manifestation of quality for the typical audience member (Owen & Wildman, 1992). Of course, higher production budgets require the presumption of a satisfactory return; therefore, higher-budget content typically is geared toward having greater “mass appeal.” Thus, the distribution of audience attention in most media contexts tends to cluster around the high-budget, mass appeal content (Owen & Wildman, 1992) which of course also tends to be the content produced by the traditional institutional communicators (with the resources to expend on big budget content).

### *Media Economics*

The above discussion of audience behavior leads naturally into some basics on the economics of media. Perhaps the first key principle involves the powerful economies of scale that exist in the production of media content. Media content is defined in economic terms as a “public good” (Owen & Wildman, 1992). Some key characteristics of public goods are: a) high fixed costs; b) very low variable costs; and c) non-depletability. That is, it is very expensive to produce and sell the “first copy” of a public good (such as a TV show, television program, or web site). But to sell additional copies to additional consumers requires very little additional cost, particularly given the fact that one consumer’s consumption of the media product does not prevent another consumer from consuming the same media product (i.e., only one web page needs to be created whether 1000 or one million people visit the site). There are enormous economies of scale to be achieved with such products, as production costs can be distributed over large audiences

over long periods of time (consider the fact that *I Love Lucy* episodes are still collecting revenues). This has a few implications for the massification of any medium. First, it creates a tremendous incentive for any new medium to, if not primarily, at least significantly, function as an ancillary distribution mechanism for content produced in older media. Second, it creates a powerful incentive for producers of content for the new medium to try to appeal to as large an audience as possible, and thereby distribute production costs across as large an audience as possible.

And finally, the tremendous risk naturally associated with any product with very high fixed costs (particularly media products, which have proven to be a very risky business across a wide range of technologies; see Napoli, 2003) creates powerful incentives to employ traditional media industry strategies of risk reduction, such as derivations or recyclings of content already proven to be successful in other media, or reliance upon proven strategic approaches most likely to attract a large audience.

### *Institutional Forces*

Finally, we come to what are termed “institutional forces”; those institutional characteristics of the media system that compel new technologies to adopt the characteristics of traditional media. First, and perhaps most obvious, there is the well-documented historical pattern for existing media organizations to (somewhat belatedly, as it usually turns out) migrate into new media, and in so doing, transplant existing content (see above), strategic approaches, and business models (Napoli, 1998a, 1998b). A second significant institutional force involves the process of audience measurement. Audience attention data is a vital commodity across all ad-supported media, and has proven to be particularly important to the establishment of any new technology as a viable advertising

medium (see Napoli, 2003). Unfortunately, one unavoidable byproduct of most established audience measurement methodologies is that, given the nature of sampling, the larger the size of the audience, the more accurate and reliable are the audience data (Napoli, 2003). This creates an inherent bias in the audience marketplace favoring content providers that attract large audiences

### *The Massification of the Internet*

When we consider these forces within the context of the Internet it is important to acknowledge that the Internet certainly has confounded traditional notions of a mass medium. Its interactive capacity is tremendous, and it facilitates not only one-to-many forms of communication, about also one-to-one and many-to-many. Institutional communicators remain tremendously prominent, but opportunities for other types of actors to achieve prominence (and they often do) are available to an extent that can not be found in other media. And while substantial portions of the Internet are highly commercialized and certainly devoted to pursuing large audiences, other components of the online realm are not. In these ways, the Internet has both adopted – and expanded well beyond – the characteristics of traditional media. But certainly, the traditional characteristics of “mass” media have become integral to the institutional structure and orientation of the Internet, and to how consumers use it as an information and entertainment resource (Introna & Nissenbaum, 2000; Webster & Lin, 2002).

From an audience behavior standpoint, it is somewhat telling that the typical television viewer, in an environment of channel abundance, regularly consumes only about 13 of the available channels – and that this is roughly the same number of Web sites that the typical person visits on a regular basis (Ferguson & Perse, 2000). Nor is it

surprising that the typical web search seldom involves looking beyond the first page of links returned by the search engine and less than 10 percent of the time does a user look beyond the first three pages of links (iProspect, 2006). The search and retrieve dynamic – perhaps the most basic attribute of an interactive medium, is one that extracts costs from the audience member. Consequently, we see audience behavior patterns such as these that illustrate important limitations in the extent to which the Internet’s full potential to dramatically reconfigure the nature of audiences’ interaction with their media can be realized.

Consider also the rise to prominence of content aggregation sites such as YouTube and MySpace. While these sites have received tremendous attention for the extent to which they empower individuals to serve as content producers, facilitate a many-to-many communication dynamic, and thereby “de-institutionalize” the media (all things, it should be noted, that the Internet already was facilitating without such sites), what has been largely ignored in the discussions to date is the extent to which these sites function largely to confine the vastness and complexity of the Web into a simpler and more manageable framework. The days of scouring the Web for individual home pages or video clips now are being replaced by individual repositories/destinations subject to centralized editorial control. It is as if the large-scale gatekeeper bottlenecks characteristic of old media are being recreated in an environment in which they never were necessary from a technological standpoint (or, presumably, desirable). Suddenly, much of the chaotically- and independently-placed elements of the Web are being voluntarily placed under the control of a single institutional communicator (i.e., News Corp. in the case of MySpace and Google in the case of YouTube). This is a kind of

down-sizing or consolidation of the Web itself. Such patterns are a reaction to what has been inarguably described as “an enormous oversupply of web offerings that no human being can navigate without aides that give some structure to this ever-growing universe” (Koopmans & Zimmerman, 2005). To the extent that this kind of aggregation of web content is proving highly desirable, or even necessary, to users (in the same way that Amazon and eBay have consolidated on-line shopping), a potentially successful business strategy going forward would simply be to identify other broad content categories currently scattered about the Web in need of aggregation and then develop the appropriate aggregation and display mechanisms.

Related to this phenomenon, we also see a strong tendency for online audiences to cluster around relatively few content options, in a behavioral pattern that has been well-established among the traditional mass media. Audience behavior research frequently has documented a “power law” distribution (see Barabasi & Albert, 1999) of audience attention and/or dollars, with 20 percent of the available content attracting 80 percent of the audience (Hindman, 2007; Webster & Lin, 2002). Recent research examining the distribution of audience attention across different media has found that the concentration of audience attention around relatively few sources in the traditional media realm (see Webster & Phalen, 1997) has been largely reproduced in the on-line realm (Webster & Lin, 2002; Yim, 2003). Some comparative studies have found an even greater concentration of audience attention on-line than is found in traditional media such as newspapers, radio, and television (Hindman, 2007). Equally important is the fact that this audience attention is clustering around many of the traditional institutional communicators that characterize the traditional media realm (see above; see also

Dahlberg, 2005; Koopmans & Zimmerman, 2005), as traditional media entities ranging from News Corp. (particularly with its purchase of MySpace), to Time Warner (which, contrary to expectations, absorbed AOL rather than vice versa), to Disney, all have established prominent positions online. Among the top 10 “parent companies” online for the month of November, 2006, were Time Warner, News Corp., the New York Times Company, and Disney (Nielsen//NetRatings, 2007).

And, of course, given this institutional migration, and the public good characteristics of media content, it is not surprising that the Web has developed as a key mechanism for accessing and distributing “old media” products such as recorded music, television programs, motion pictures and magazines. The Internet has been well-described as “swallow[ing] up most, if not all, of the other media in an orgy of digital convergence” (Lehman-Wilzig & Nava Cohen-Avigdor, 2004, p. 707). To the extent that this is the case, then there inevitably is a limit to the extent that we can expect the Internet to exhibit fundamentally different characteristics from the media that preceded it.

This clustering of audiences also continues to be associated with patterns in advertiser behavior that are consistent with the massification effects of audience measurement. Established audience measurement systems naturally favor sites that attract large audiences in the perceptions of advertisers over sites that attract smaller audiences, even if those niche sites might be attracting more desirable (from the advertisers’ standpoint) audiences. Advertisers have shown themselves to be willing to pay a premium for accuracy in audience measurement (Napoli, 2003; Webster & Phalen, 1997), which can help explain why, even today, the most popular web sites attract a share of online advertising dollars that exceeds their share of the on-line audience (Klaassen,

2006). This creates important economic disincentives for serving narrower, more specialized audiences on-line.

### Hyperlinking and the Forces of Massification

And so, as the previous section illustrated, the technological forces compelling a new medium such as the Internet to defy the confines of traditional media are counteracted to some degree by a number of countervailing social and institutional forces that clearly are influencing both the structure of the online realm and how consumers navigate the online space. The question that this section seeks to answer is if, and how, the process of hyperlinking – a characteristic that is, to a large degree, distinctive to the realm of on-line media (see Cover, 2006) – factors into the push and pull between old and new media that is at the core of the Internet’s evolutionary process.

Hyperlinks have been described as “the heart of the World Wide Web” (Giuffo, 2002, p. 9). In thinking broadly about the process of linking online, it is important to think not only in terms of the links to text and video that can be embedded in discrete Web pages (thereby creating the distinctive “inter-textuality” of the Web and Web navigation), but also of the processes of link generation and display associated with the functioning of search engines (given the centrality of search engines to on-line navigation), as well as the processes of link generation that accompany – and are meant to assist/manipulate – consumer choices on-line (i.e., the recommendations for other potential content of interest that now frequently accompany web users’ content selections). These represent perhaps the most fundamental contexts for exploring the potential significance of linking to the process of massification on-line.

A potentially useful conceptual lens for examining these various contexts involves the concept of gatekeeping. Despite early proclamations to the contrary, it has become very clear by this point that the Internet has not, by any stretch of the imagination, eliminated gatekeeping or made it obsolete. Rather, the dynamics of the gatekeeping process have changed significantly (see Zittrain, 2006), perhaps becoming a bit more covert. Much gatekeeping can now be handled via technological means, though the human factor remains prominent (Introna & Nissenbaum, 2000). Hyperlinking is, itself, in fact perhaps the most significant mechanism via which online gatekeeping takes place (Introna & Nissenbaum, 2000; Menczer, Fortunato, Flammini, & Vespignani, 2006). Via decisions regarding when and where to hyperlink and, most important, what to link to, content providers exert substantial editorial control (Gerhart, 2004). As Park (2003) has noted, Web sites can very usefully be perceived as “actors,” and “through a hyperlink, an individual website plays the role of an actor who could influence other website’s trust, prestige, authority, or credibility” (p. 53). Hyperlinking then serves as a primary mechanism via which an online content provider exerts control over its audience (see McAdams & Berger, 2001), and, to use terminology drawn from traditional media (specifically, television), manages “audience flow” (see Webster & Phalen, 1997).

The concept of the “walled garden” (Aufderheide, 2002), which arose primarily to describe AOL’s early efforts to keep its subscribers within AOL-generated content and away from the true World Wide Web, still has relevance in the context of contemporary linking activities. Research shows that online news sites overwhelmingly hyperlink only to internal Web pages, and seldom link to outside sources (Dimitrova, Connolly-Ahern, Kaid, & Reid, 2003). Other research suggests that search engines produce results that

suppress links to controversial information or news stories (Gerhart, 2004). Recent efforts at mapping the distribution of links online (in terms of who links to who, how often, etc.) document a clear and coherent “information politics” (Rogers, 2004) that suggest that very deliberate editorial decisions are being made with an effort toward guiding audience attention down certain preferred paths as opposed to others.

When these types of traditional editorial dimensions of hyperlinking are coupled with the technical dimensions of link generation by search engines (in which the quantity of inbound links is a key driver of a link’s placement in the search results), the question frequently has arisen whether the dynamics of linking are such that whatever imbalances in content accessibility and prominence that characterize the traditional mass media world are being replicated in the online world (Introna & Nissenbaum, 2000; Koopmans & Zimmerman, 2005). Research suggests that this may very well be the case (see Hindman, 2007; Yim, 2003). Koopmans and Zimmerman (2005), for instance, find that, in terms of political news coverage, the same institutional actors and information sources achieve virtually identical levels of prominence (as measured, in part, by link quantity) in both the on-line and print media realms.

The persistence of such patterns is in some ways surprising given the dramatic technological differences in how content is stored, exhibited, and accessed in on-line versus off-line contexts. These important differences, and their potentially dramatic implications, are explored perhaps most extensively in Anderson’s (2006) “long tail” analysis. The essence of the long tail argument is that the combination of the greatly expanded content storage capacity of a digitized space such as the Internet (versus, say a traditional book or record store), along with the enhanced, highly interactive search tools

that such a space can provide (such as peer recommendations, site-generated recommendations, and robust, multi-dimensional search features) contribute to a media environment in which the traditional power law distribution of audience attention can be altered, or least become more lucrative than was possible in the offline world (Anderson, 2006). That is, a consumption dynamic in which 20 percent of the content generates 80 percent of the revenue (and in which nobody knows what that 20 percent is going to be – see Napoli, 2003) can be more profitable in an environment in which “shelf space” is much less scarce (and less expensive), and in which the consumer’s ability to effectively and satisfactorily navigate this expansive shelf-space is enhanced via a wide range of search tools and linking systems.

In such an environment, the content provider can make all of the relevant content available, and not have to make editorial judgments about which content to carry and which content not to carry based upon (often wrong) predictions regarding consumer tastes, and can be reasonably sure that all of it will generate at least some revenue, even if the bulk of the revenues continue to be generated by only 20 percent of the content. Under this model, success is increased via the fact that: a) the content provider never has to worry about not having any of the 20 percent of content options that prove to be enormously successful; and b) the remaining content (the long tail) can be stored and exhibited cheaply enough – and can be located and accessed easily enough by the consumer – that it, too, becomes a meaningful contributor to profits.

This description of the long tail model has tried to emphasize a question that has received surprisingly little attention – the extent to which these radical changes in content distribution, access, and exhibition do anything to alter the well-established dynamics of

how audiences distribute their attention across various content options. The long tail phenomenon (i.e., the 80/20 rule) that characterized traditional media remains a defining characteristic of the new media space, as the research above suggests, though other recent research suggests that some very modest shifts toward a broader allocation of audience attention can result from the migration to on-line distribution and exhibition (Elberse & Oberholzer-Gee, 2007; Pennock, et al., 2002). Thus, it seems safe to say that the online environment simply provides a potentially more profitable context in which to navigate the traditional constraints in which content providers have operated. The fact that this dramatically changed technological environment can apparently do relatively little to alter the fundamental distribution patterns of audience attention is, in many ways, as remarkable, if not more remarkable, than the ways in which this changed technological environment can alter the economics of content distribution and exhibition.

The persistence of such patterns in the distribution of audience attention may be a reflection of the fact that the exact same power law patterns can be found in the distribution of inbound and outbound links on the Web (Adamic & Huberman, 2001). Thus, the ecology of hyperlinks may itself represent a set of paths that is compelling a distribution of audience attention that bears a striking resemblance to the distribution of audience attention in the traditional mass media.

### Conclusion

As this paper has illustrated, even the process of hyperlinking, which is in many ways representative of the distinctive, boundary-defying, and interactive character of the Internet in many ways fits into a set of forces that help compel the medium to function (both from a content producer and a content consumer's standpoint) along lines

established by traditional media. This is not to say that the innovative potential of the Internet has gone potentially unrealized; only that any new medium – even one as dramatically different from previous media as the Internet – to a certain degree has its evolutionary trajectory constrained by a set of stable and influential social and institutional forces (see Neuman, 1991; Winston, 1998).

There are also some important policy implications to be drawn from the patterns reviewed in this paper. Perhaps the most important of these is the fact that the greater the extent to which the Web exhibits the characteristics of traditional media, the less relevant is the argument that increasingly is being put forth in policymaking circles that the regulation of traditional media (particularly in terms of ownership and market structure) is no longer necessary since the Internet provides a robust and viable alternative to whatever concentration and commercialization is to be found in the traditional mass media (see Gerhart, 2004).

From a research standpoint, however, we still have much to learn about the processes of linking and how they impact the dynamics of content production, distribution, and access. As Wellman (2004) has illustrated, early Internet research focused primarily on prognostications. The second stage involved the basic mapping of user behavior. And only now have we entered the stage where the dynamics of Internet usage are being subject to robust empirical analysis. However, not all aspects of Internet research are at the same evolutionary stage. That is, while we are developing a sophisticated understanding of the dynamics of Internet usage, our understanding of the production side is not as far along. Today, we are still very much embedded in Wellman's (2004) second stage of analysis as it relates to the production and presentation

of Web content. This “mapping” of the online space is well-developed. We are developing a strong sense of the distribution of links – of who links to whom and how often (Park, 2003; Rogers, 2004). However, we do not yet understand very well the dynamics of the linking decision-making process. What factors determine whether or not a site is linked to another site? Why do certain sites become important nodes in web space while others languish in relative obscurity? Inquiries in this vein have been infrequent up to this point (e.g., Tremayne, 2004). Moving forward, it would seem important that researchers make further efforts to move beyond the consumption side of the Internet (i.e., how users navigate the on-line space and distribute their attention) and delve deeper into the processes surrounding the generation of content and how these content sources interact with one another (via linking, etc.). For instance, in light of the tremendous amount of attention that blogging is receiving as an alternative to traditional news media, to what extent are the links provided by bloggers pointing readers to traditional news media sources? Similarly, exactly to what extent is the content populating sites such as YouTube truly of the “user-generated” variety versus content “ripped” from traditional media (i.e., TV and movie clips, etc.)? And, equally important, how is audience attention distributed across these different content types? Is traditional media content being consumed in proportion to its availability on such platforms? Or, is it being consumed in greater or lesser proportion to its availability?

In some ways, this pattern in our understanding of the Web as a medium mirrors the evolution of the field of communications research, where the initial empirical focus was directed at the receivers of the information (their usage patterns, effects, etc.); and only after this line of inquiry matured did we see researchers turn their attention to the

organizations involved in the production and distribution of content. However, focusing greater attention on questions such as these is essential for developing a clearer portrait of the interaction between old and new media and the true extent to which a new medium is performing new functions, instituting new communications dynamics, and providing new content.

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