

What Are Media? A Hedonic Model for the Second Digital Convergence

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Key questions for media scholarship hinge on defining its object: What are media today? What are media industries and companies? Traditionally, media activities were viewed as binary—either media or not. However, in a second wave of digital convergence, media-related activities permeate many economic activities, raising delineation questions. To address this, we propose a model and empirical approach to measure the degrees of involvement in various media activities on a continuous scale of mediality. Rather than strictly defining media, we deconstruct activities into attributes and assign weights and values. The model uses two interlinked formulas to calculate the media intensity for industries and companies. By surveying more than 150 media experts and using the model, we generate scores for 48 industries and 50 companies and demonstrate the usefulness of this tool for policymaking, industry strategy, and media scholarship.

Keywords: media attributes, content production, content distribution, media industry, media intensity, media definition, big tech, mediality, digital convergence, hedonic model

The Second Digital Convergence

A key question for media scholarship is defining its object: What are “media” today, exactly? The answer matters for regulatory policy, economic valuations, and academic analyses. This differs from traditional efforts to define boundaries between different types of media industries to determine which media regulations should apply or to identify the degree of competition in a media market. The question here is more fundamental: What counts as media in the first place?

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Media industry definitions in law and research have been largely based on the underlying technologies and channels—paper, airwaves, copper wires, vinyl, celluloid, and so on. Distinctions were premised on the characteristics and affordances of each technology. Until the 1980s, taxonomies and industry boundaries were reasonably simple. In the digital environment, however, the lines have blurred. The digital convergence of media became a familiar concept popularized by Negroponte (1995) and the MIT Media Lab.¹ Stand-alone media devices, networks, services, content types, and companies became connected and multifunctional. Companies increasingly traversed traditional boundaries to build sprawling media conglomerates.

Negroponte focused on what we now consider legacy media activities coming together digitally, but this is not the end of the story. We are now beginning to grapple with a second digital convergence as media-related informational activities expand far beyond traditional media industries and adjoining parts of technology platforms. This is driven by the ubiquity of screens—video at the gas pumps, taxis, and elevators—and the expansion of content providers, genres, and communication linkages.

Among marketers, it has become a buzzword that every company is a media company (Foremski, 2009; Pettijohn, 2019; Pono, 2018). This signals something quite important when looking ahead: Many nonmedia enterprises have developed media components as part of their operations. While this trend began as in-house marketing and brand promotion activities, companies increasingly produce content-rich platforms as part of their customer services to foster long-term relationships, establish authoritative expertise, and exercise thought leadership. They produce podcasts, blogs, and vlogs; cultivate social media presences; and partner with influencers. They establish metaverse content and AI-driven interactivity. Red Bull, the energy drink company, launched a media company for documentaries and extreme sports live streams. Patagonia, the sportswear company, has a division producing nature documentaries about conservation. Starbucks offers curated music and storytelling to foster connections over a cup of coffee. Home Depot generated do-it-yourself courses. Marriott created romantic episodes for its hotels. The shoe company Vans engaged users in product design. Cars are networked, and manufacturers communicate with them, while smart devices are interlinked in an Internet of Things. Mindful of the notion that a firm lacking an Internet presence does not exist, companies engage in content distribution as a loss leader and have created media management positions with titles such as chief content officer (e.g., at PepsiCo and Burberry).

There are many blogs and commentaries by consultants and marketers on this trend, but they are descriptive in nature (Intelligencemarketing.io, 2024). There is also a rich academic literature on “mediatization,”² such as Esser and Strömbäck (2014), Hepp et al. (2015), and Livingstone (2009). These authors focus on media’s broader societal transformation—shaping politics, culture, and religion through globalization and modernization. While this literature also addresses changes in media companies and markets, only rarely does it delve into the creation by nonmedia companies of media-like operations as part of their regular activities, beyond marketing and PR (e.g., Ihlen & Pallas, 2014).

¹ In media scholarship, specializations by media types gave way to broader perspectives focused on stages (Pool, 1983), news (Jarvis, 2015), culture (Jenkins, 2008), and networks (Benkler, 2006).

² With some overlap with a literature on “servitisation” (Vandermerwe & Erixon, 2023).

We characterize this confluence of media and nonmedia activities as the second digital convergence and expect the trend to accelerate with advances in AI that facilitate highly personalized content and interactivity that can be generated automatically and autonomously and integrated into many products and services (Noam, 2026). The second digital convergence raises many issues, one of which we address here: In an environment where nonmedia organizations expand their media and information activities, what, then, is a media company? If everyone produces media, does it become a generic function, like HR or IT? Our literature review found little addressing the definitional issue, with the notable exception of Voci et al. (2019). In 2026, the *Oxford Encyclopedia of Communication* had 79 entry headings incorporating the word "media," such as "state media," "media literacy," "postcolonial media," and "social media," but no entry on the term as such. Why is it important to identify whether an activity is part of media?

Media Versus Nonmedia: Legal and Policy Effects

The distinction between media and nonmedia firms has significant legal and regulatory consequences. Media mergers typically face heightened scrutiny, leading many jurisdictions to impose special ownership, cross-ownership, and foreign-control rules that rarely apply to other industries (Armijo, 2009; Noam, 2016).

Media organizations generally receive stronger speech protections because they serve a public informational role rather than primarily engaging in commercial speech. This difference is reflected in defamation law.³ Similarly, journalists may obtain special access to information and events and may receive privileges in keeping sources and unpublished materials confidential, just like lawyers (Strossen, 2023). Furthermore, governments may provide subsidies or tax benefits to support domestic media or, conversely, impose special taxes on them. For example, in Hungary and Austria, advertising revenues of media companies are specially taxed (Voci et al., 2019).

Media Versus Nonmedia: Business Effects

Most online platforms prefer to define themselves as tech companies rather than media firms, largely to avoid the higher degrees of regulatory obligation and oversight imposed on media firms (Napoli & Caplan, 2017a, 2017b). Investors value tech firms higher because of their growth potential, scalability, and fewer regulations. In contrast, media companies are seen as operating in saturated markets, slow-moving, and subject to more government interference. For example, in 2019, investors valued Netflix, which identified itself as a tech company, 10 times higher by market capitalization relative to its net income than they valued Disney, a flagship media company.⁴

Media Versus Nonmedia: Effects on Scholarship

³ The U.S. Supreme Court, in *Dun & Bradstreet* (1985), held that news organizations get stronger legal protection than nonmedia speakers because reporting on issues of public interest is more protected under the U.S. Constitution than private or business-related statements made outside the press.

⁴ Valuations and incomes from Yahoo Finance.

For media scholars, determining whether an activity is part of media defines the very scope of their field. Most topics in media studies, such as ownership, content, audiences, literacy, ethics, and ecology, require a way to clearly identify the subject of investigation. How can one discuss media effects on juveniles or political attitudes without defining media or insightfully discuss concentration of media without delineating its boundaries? Similarly, how can one describe a firm as the “largest media company” without clearly establishing the scope for the determination?

Historically, media taxonomies were largely binary—media activity: yes or no? In the environment of the second digital convergence, such dualities are no longer sufficient. There is a significant and growing gray zone. At the same time, we should avoid excessive breadth because if everything is media, the term becomes meaningless. Instead, this article seeks an approach to usefully answer the basic question on a conceptual and empirical basis: What is a media company today? For example, is Amazon a retail company because three-quarters of its revenues derive from general retail sales or a tech company because of its infrastructure services? Its AWS subsidiary is the world’s largest cloud provider, supporting content distribution, while its Kuiper Systems offers global broadband with an approved constellation of 3,236 satellites. Or is Amazon a media company because of its media operations—Prime Video, Amazon Publishing, Amazon MGM Studios, Audible, Twitch, IMDb, and Kindle (the device, the store, and the direct publishing)? Moreover, Amazon’s controlling shareholder, Jeffrey Bezos, owns a major newspaper, *The Washington Post*.

If the provision of content is the crucial criterion, as is often assumed in media studies (though not in the legal, management, or engineering literature), should one consider museums or universities as media organizations because they produce and exhibit cultural and other content? If, on the other hand, the main criterion is providing a conduit that facilitates content reaching audiences, should we include data centers and submarine fiber cables? After all, the origin of the word “medium” is the Latin “medius,” meaning “in the middle” (i.e., an *intermediate*). If so, would General Motors be a media company because of its OnStar communications network that monitors and directs automobiles and drivers? Lastly, if the ownership of media operations counts for being considered a media company, then how should we classify pure investment firms like Vanguard, which in 2025 had more than \$1.7 trillion invested in companies with media activities in content, infrastructure, or media-related technology?

Literature Review

In our review of the literature, we found that what counts as media is generally treated as a given, with little in the way of conceptual or empirical approaches. This absence goes back to the early founders of the field, such as Lasswell (1948), Lazarsfeld and Merton (1948), and Schramm (1954). On the whole, they did not devote much attention to defining media. For them, it was a self-evident assortment of activities in print, film, and broadcasting.

A more critical approach identified media as activities mass producing influences (Horkheimer & Adorno 1947). This perspective left little room for individualized media or pure distribution systems. Taking a different tack, the Canadian media sage Marshall McLuhan (1964) posited that to be considered a medium, it must extend human capability. Media extend human senses and are central to the way people experience

the world. It is hard to operationalize or contain this perspective. Generative AI, by extending human capability, would therefore be a media activity (Noam, 2026).

More recent literature has also been primarily focused on differentiating among types of media for regulatory purposes. Kleinsteuber and Thomaß (2004) described media definitions tautologically: Media companies are “business agglomerations that define themselves as such or are perceived as such by others” (p. 127). In short, they are what they say they are or are thought to be. Voci et al. (2019) reviewed the literature and observed nine approaches, which they summarized as two broader categories: (1) a narrow approach that describes media companies as makers of content (such as Wirtz, 2011) and (2) a broader perspective that includes firms involved in the media trade more generally (such as Gläser, 2014; Hess, 2014). They concluded, “A media company nowadays refers to any company that produces, allocates and/or offers content” (Voci et al., 2019, p. 45). This perspective would therefore include as media companies everything connected with content (e.g., app makers, amusement parks, PR agencies, laptop makers, search engines, libraries, sports leagues, etc.). To moderate this conclusion and to escape an otherwise binary definition—media: yes or no—the authors then differentiate. Placed at the center are “firms focused on journalistic and economic objectives” (Voci et al., 2019, p. 45). Surrounding that is a ring of content-oriented firms, from production through aggregation and distribution.

A further ring is for “media companies in a broadest sense” (Voci et al., 2019, p. 45) and includes service providers in logistics, printing, storage, and infrastructure. While sensible, there is no clear conceptual or empirical methodology for assigning an industry to these rings or a scale for their two-dimensional map. It also is not clear why journalistic objectives, let alone economic objectives, are at the center, but not, say, filmmaking, music production, or social networking. Clearly, the field needs a conceptual method with an empirical basis (Picard & Lowe, 2016).

Media scholarship and its related disciplines are not the only fields interested in the definition of media. For engineers, the term is used in the original sense of an intermediary. It is the physical means through which electrical signals or data are transmitted, such as wires, fiber optic lines, or wireless channels (Santoso & Beaty, 2018; Whitaker, 2018).

Lawyers, legislators, and regulators have long grappled with distinctions between media. It would be beyond the scope of this article to track laws and court decisions worldwide. In broad strokes, we can briefly consider the European Union and the United States. Although lacking a formal definition, the European Commission examined two key factors: whether the company provides content to the public and whether it exercises editorial control over the content. That test would include museums and piano bars, but exclude telecom and Internet network providers. It stems from a 2005 court decision that aimed to reduce regulatory uncertainty caused by the emergence of on-demand online video services. The European Court of Justice (2004) clarified which services should meet stricter public-interest obligations based on their operations rather than distribution technology.

In the United States, there is no formal statutory or regulatory designation. The Supreme Court has repeatedly declined to define what the “press” is, let alone the wider concept of media. The closest to

an official definition is through the administration of the press exception,⁵ the method by which the Federal Election Commission determines whether an entity's media activities are part of an election campaign's expenditure, or whether a "press exemption" (now known as a "media exemption") applies. To simplify, expenditures by media companies (or other entities not owned by a party or candidate) for news stories, editorials, or commentaries about politics and candidates are not counted as campaign contributions or expenditures, but what are media companies in the first place? The Federal Election Campaign (FEC) Act of 1972 defines media purely descriptively: "SECTION. 102. For purposes of this title: (1) The term 'communications media' means broadcasting stations, newspapers, magazines, outdoor advertising facilities, and telephones" (Federal Election Campaign Act of 1972, 2 U.S.C. § 431(9)(B)(i), 1972). The FEC examines the frequency with which the organization produces news or opinion content, the organization's ownership, and whether it is engaged in recognized "press functions" (Napoli & Royal, 2025). Over time, the FEC's scope has widened to include Internet-based paid commercial communications.

To conclude the literature review, the industries and firms that comprise the "media" are either reduced to a limited number of companies that produce content as classically understood or are inflated to include anything that involves information creation and distribution. In the digital age, almost everything generates information, from smart vacuum cleaners and tractors to universities and online dating apps. If everything is "media," it becomes nothing in particular.

The Model

Thus, a significant gap exists in the literature. Our search did not find a systematic, let alone quantifiable, empirically based approach for determining what counts as media, what is a media company, and, by extension, what comprises a particular media industry and the even wider media sector of a national economy. To resolve the problem, we propose a measure of "media-ness" or "media intensity," which we characterize as the mediality of an activity, industry, or company. We do so by deconstructing media activities into their attributes and then measuring and aggregating the extent of these attributes. Our model enables researchers to empirically establish a "mediality score" for each media-related activity and each company and industry along a continuous scale rather than a binary taxonomy. The higher the mediality score, the more media-intensive the company or industry.

To obtain mediality scores, we deploy the methodology of hedonic pricing. This approach traces to labor economist Sherwin Rosen (1974), who showed how the overall value of a product or service can be obtained by decomposing it into a set of characteristics that contribute to its overall assessment. The hedonic pricing method is used to estimate the value of a house based on a range of characteristics (bedrooms, size, plot, neighborhood, etc.). Each measure is multiplied by a weight determined by regression estimates. As an illustration, assume the hedonic coefficient for one bedroom is a linear \$40,000. A three-bedroom house would add \$120,000 to the overall value. This is how Zillow estimates house values. While Rosen (1974) focuses on prices, hedonic evaluation—disaggregating characteristics, valuing, weighting, and summing

⁵ On the state level, various statutes may provide descriptive definitions for media when special rights are extended.

them—has been extended to broader product contexts. The approach of this article is similar. However, instead of aggregating monetary value as the metric, we determine a mediality score.

A media activity can be deconstructed into specific attributes. Each can be assigned a weight and magnitude. Together, they produce the score of media intensity we call mediality. The higher the mediality score, the more central the activity is to being a media firm or industry. To accomplish this, we must engage in two types of calculations. First, we measure the weights of various attributes. Second, we assess the extent to which each attribute is present in a particular media industry. For example, suppose one attribute is a “network effect,” described as “the benefits to an individual user increasing as the total number of users increase.” If the weight of that characteristic is observed as 7 on a scale of 0–10, and it is present in the XYZ industry, which has a magnitude of 8, then the contribution of this characteristic to XYZ’s overall mediality score is $7 \times 8 = 56$, scaled down to 5.6 on a 0–10 scale.

An Industry’s Mediality Score

Media industries share several characteristics that may apply in varying degrees to nonmedia industries, but not typically in the same combinations or with as much intensity (Lowe & Brown, 2016). To determine these characteristics, we built on the work of Noam (2018), which outlined a slate of characteristics of media companies. We identified 17 characteristics (Table 4) as criteria for establishing the mediality score of an industry. These characteristics j are not of equal importance, and each j has a different weight. The more of the media characteristics a particular industry fulfills, and the higher the weights of these characteristics, the higher the industry’s mediality score (MI). An industry n ’s MI is defined as

$$\text{Mediality of Industry } n = MI_n = \sum \frac{\text{Criterion Score}_{nj} * \text{Criterion Weight}_j}{10}. \quad (1)$$

A Company’s Mediality Score

The mediality score for a company reflects its media activities. Many companies operate in multiple industries and are engaged in diverse activities. Each of these industries has different mediality intensities, MI_n . The company-specific mediality score is an aggregate of the industry medialities across the industries in which the company is active, taking into account the different activity levels of the company in each of those industries.

A company mediality score (MC) for Company i is defined in Equation 2:

$$\text{Mediality of Company } i = MC_i = \sum \frac{\text{Firm } i \text{ Revenues in Industry } n * MI_n}{\text{Firm } i \text{ Total Revenues}}. \quad (2)$$

The more of a firm’s revenues are derived from industries with high mediality, the higher its overall company mediality score. Further below, we take an additional step in evaluating a company’s centrality in the overall media environment by weighing the company’s media revenues by its mediality score.

The Empirical Study

The company's overall mediality score is based on two factors: (1) its relative number of activities in media-related industries and (2) the mediality score of the industries in which it operates. The latter, in turn, is also based on two factors: (A) how it scores on a set of criteria of mediality and (B) the weight of each criterion.

The factors A and B cannot be observed or measured directly. One approach is the surveying of professional specialists. We sampled 155 experts across 14 countries, seven disciplines, and five professional affiliations. The sample pool was derived from 283 experts identified from their participation in conferences and published research in media economics and management.⁶

When analyzing the responses,⁷ we also assessed whether their judgments varied according to demographic characteristics. Younger experts might consider mobile phones of higher mediality than older respondents do. Similarly, there might be variations across regions of the world, for different academic specializations, and so on. We tracked correlations with the weights given to the different attributes of mediality (Table 1) and to the scores of different industries (Table 2). We ran several regression analyses, but could not observe statistically meaningful correlations. We take this to mean that the results did not show a skewing by age, geographic location, academic background, or organizational location. This helps to confirm the robustness of the panel.

Weighting the Proposed Attributes for Mediality

We asked the experts to weight various attributes associated with media. These attributes are based on Noam (2018) and the judgment of the authors, supplemented by several other characteristics ascribed in media studies (Chapter 2.3).⁸ The results are presented below in Table 1, which reports the median weights ordered by the average scores of responses for each attribute.

⁶ Surveys were sent out in 2023/2024. The initial responses contained instances of undersampling of several industries and regions, and selected follow-ups were therefore made to balance deficiencies in representation. The survey's scale was set at 1–5, after feedback from a beta test, and then doubled to a 1–10 scale.

⁷ Clearly, not every surveyed individual was an expert on every specific industry, but this may have been an advantage since specialists in a particular industry tend to overvalue it.

⁸ Our literature review did not identify a comparable list of attributes. Attributes that are economics-oriented are discussed in Medina et al. (2016), Picard (2011), and Wirtz (2011). The survey identifies which attributes were judged more relevant than others. A future study should propose additional attributes for a next round of expert judgment.

Table 1. Survey Results of Media Attributes and Their Weights (Scale 1–10).

	Median
Creation or production of information/entertainment content products	10
Target market can be conceptualized as audiences.	8
Distribution or transmission of information/entertainment goods	8
Aggregation or bundling of information/entertainment goods	8
Producing goods often described as culture goods (conveying ideas and behavioral models that reflect and can affect ways of life)	8
Copyrights (and/or patents for hardware devices) used for the consumption, distribution, or exhibition of information/entertainment goods are a significant part of the company's assets.	6
Wholesale or retail sales of information/entertainment goods	6
Products as experience goods (i.e., value can be truly evaluated only after the product has been experienced)	6
The benefits for an individual user increase as the total number of users increases (network effects).	6
Creating products intended to generate interactivity with and among users/customers as a significant aspect of the business model	6
Production and distribution of media products as a significant supplement to predominantly nonmedia business activities	6
Producing goods often described as public goods that benefit individuals without reducing the utility for others, thereby benefiting society at large	6
Reliance on advertising as a major source of revenue	4
Storage and processing of data for information/entertainment goods	4
Creation and distribution of software programs used for producing, distributing, or consuming information/entertainment goods	4
Participation in a market where a significant number of rivals do not prioritize financial gain	4
Manufacture hardware devices used for the consumption, distribution, or exhibition of information/entertainment goods	4

The medians provide a metric with the least distortion from outliers. The standard deviations range from 1.9 to 2.8. Some results are not surprising, although interesting. The criterion "creation or production of content" tops the list of attributes, with a median of 10. Given the historic emphasis on content production in media research, this would be expected. Distribution is important, but was rated lower at 8, as was aggregation. Being sales-oriented was ranked at 6. Manufacturing media-related devices was rated low at 4. Similarly low are the "creation and distribution of software" and the "storage and processing of data." These activities (rated 4) were judged to be relevant operations, but with low scores for mediality. In summary, content production was rated highest among attributes of media, distribution in the middle, and manufacturing lowest.

There are some unexpected results. We expected the attribute of "culture goods" to be rated higher than 8, given its centrality in media studies. "Experience goods" and "generate interactivity" were also rated relatively low at 6. Interestingly, the experts appear rather agnostic about the way income is generated. It made relatively little difference to them whether the firm is financed by advertising (4) or has significant nonprofit revenue (4). The characteristics of media's functions for supporting and facilitating community-building were also assigned modest weightings: Network effects, interactivity, and public goods nature are all rated 6. This business model aspect requires future clarifying research.

Results for the Mediality of Industries

Having determined the weights for the proposed attributes of mediality, the next step was to analyze the survey focused on the mediality of specific industries. We aimed to compare scores across different types of media based on the assessment of random subsets of the surveyed experts. For example, how do the mediality industry scores (MI) for the newspaper industry and Internet service providers compare? To determine the answer, we asked subsets of the expert panel to rate the applicability of each of the 17 attributes of mediality to particular industries. Each of the survey subjects assessed at least two industries, with each industry getting 11–14 responses. The survey results were weighed using the parameters specified in Table 1. We applied Equation 1 to establish mediality scores for 48 media-related industries.

The results are presented below in Table 2. We organized the data into categories based on the numerical results. We have labeled the categories "core media," "media-adjacent," "media-supportive," and "un-media."

Table 2. The Mediality of Industries (Scale 1–100).

Core Media	
Newspapers	79.9
Social media platforms	78.5
Online news	78.4
Music streaming services	76.6
Broadcast TV	75.7
Music labels and distributors	75.1
Video game software	74.7
Pay-TV channels (such as ESPN, MTV, Eurosport)	74.6
Film and TV production/distribution	74.5
Streaming video providers	74.1
Books	73.5
Professional sports teams/leagues	72.5
Theater, opera, dance companies, and music bands	72.5
Magazines	71.5
Multichannel (Pay-TV) distribution	71.4
Music production	70.5
Search engines	70.2
Broadcast radio	69.2
Media-Adjacent	
Virtual reality goggles	69.1
Universities	68.9
App stores	68.3
Online ad providers (Google, Facebook, etc.)	67.8
Museums	67.5
Film exhibition	67.2
Concert halls and theaters	66.6
Web browsers	65.0
AI software providers	64.8
Internet service providers	62.8
Mobile and computer operating systems	62.1
Advertising agencies	62.0
Content delivery networks	60.8

Libraries	60.7
Media-Supportive	
Circus tours	58.6
Video game hardware (consoles, accessories)	58.6
Wireless and wired telecom	58.4
Art galleries	56.5
Data storage and processing centers	55.9
Office software suites (word processing, etc.)	54.7
Laptop makers	54.5
Professional print services	54.4
TV set makers	53.1
Data brokers	52.3
Ticketing agencies	50.0
Semiconductor signal processors	45.9
Paper making	43.0
Talent agencies	41.8
Courier and postal delivery services	39.9
Un-Media	
Electric utilities	29.3

We grouped these industries based on their mediality scores. The cut-off points are somewhat arbitrary, but the groupings make intuitive sense. The first category contains media with scores just at or above 70, which we describe as core media industries. For these industries, media activities are central to operations. They are composed mainly of traditional mass media industries such as conventional broadcasting and multichannel cable TV, satellite TV, and Pay-TV. This group also includes live content providers such as theater, opera, dance, music, and sports. Similarly included in this group are newer mass entertainment and information media engaged with streaming video and music, online video games, and e-news. Notably, social media platforms rank high. In direct questioning, experts might place them in an intermediate range, but when deconstructed into the media attributes we measured, the result is a high overall ranking because network platform industries have high scores across distribution, interactivity, audience orientation, bundling, data storage, and business models and were rated higher than might have been expected with regard to content. Also included in this core group are search engines and video game software.

The second grouping is an intermediate category of industries with scores between 60 and 70, which we describe as media-adjacent industries. These are not at the core, but remain important to it, comprising information producers, distributors, and providers of software, exhibition spaces, and access

functions. Some are traditional knowledge- and culture-oriented institutions that create and/or distribute and store information, such as universities, museums, libraries, theaters, concert halls, and cinemas (film exhibition). Others are important for facilitating advertising (i.e., ad agencies and online advertising providers). The rest are instrumental to the functioning and provision of online media networks and consumer-facing online software: Internet service providers, content delivery networks, Web browsers, computer operating systems, AI software, and app stores.

Industries with mediality scores below 60 constitute a third grouping, described as “media-supportive.” These industries enable media industries to operate. This cluster includes technology and hardware manufacturers (e.g., semiconductors, laptops), as well as data centers, data brokers, and office software providers. Industries that are exclusively distribution network providers are also included, such as physical courier and postal services as well as electronic wireless and wired telecom. Service providers that deliver important inputs for media operations are also part of this group, notably talent agencies, print services, and ticketing agencies. It seems that in the view of experts, the closer to technology, the lower the mediality of an industry.

The fourth category includes industries with a mediality score below 30. We describe this category as “un-media.” Only one industry selected for our survey was judged as clearly not a media industry—electric utilities. That industry is essential to media operations but was considered too far removed to be part of the media ecology. It was rated lowest in mediality by a considerable margin.

The findings encourage a deeper understanding of gradations. Newspaper publishing is at the top of core media, but magazine publishing is not. These two are frequently lumped together in media research, but our results indicate a greater complexity. While the experts accorded high mediality scores to magazines for content creation and audience orientation, they gave low ratings on other media attributes such as network effects. Similarly, moderate rankings are observed for book publishing (low in hardware, tech, and aggregation) and radio broadcasting (only moderate in content creation presumably because many stations mostly air prerecorded music or syndicated programs rather than produce original content). The findings indicate the importance of assessing a media industry across multiple dimensions rather than tightly focusing on one dimension, such as content production or an underlying technology.

Distribution networks were rated fairly low on mediality, no matter the type. Networks were treated as conduits for content delivery, including traditional services in postal delivery and telephony, as well as contemporary providers of Internet service and telecom (wireless and wired alike). Related infrastructure operations include data centers and hardware devices.

We can aggregate various media industries into still broader categories to observe the mediality of industry groupings such as news, print, platforms, devices, and so on. This is demonstrated in Table 3 as another way to slice the data.

Table 3. Mediality of Industry Categories.

Core Media	
News media	74.9
Video media	74.2
Audio media	71.6
Online media	70.0
Live content	65.9
Print media	64.5
Media-Adjacent	
Electronic distribution networks	64.3
Production service providers	64.1
Educational content	64.0
Software	62.9
Online instrumentalities	62.7
Media-Supportive	
Distribution networks	61.3
Media input services	58.0
Media technology	56.2
Raw materials	42.7

The news-oriented function ranks high in mediality and includes newspapers and online or e-news, traditional television broadcasting, Pay-TV channels, magazines, and radio companies. Similarly, video and audio media rank high in mediality, as do more recent online media. Live media and print media, two of the oldest media segments, are also high in mediality, but somewhat lower than news, video, and audio. Print media, which include magazines and books, are ranked somewhat lower, as explained above. Pure distribution networks were ranked fairly low.

At a still higher order of generalization, our approach enables designating various media industries in four general categories: content, distribution, technology, and support services. The results are shown in Table 4.

Table 4. The Mediality of Basic Media Categories.

Content creation	70.9
Distribution	62.7
Technology, hardware, and infrastructure	61.2
Support services	53.0

Of these four dimensions of media activities, content creation ranks highest by a substantial margin, which is not surprising, as noted earlier. Nor is it unexpected that support services rank lowest. The two intermediate dimensions are distribution, followed by technology, hardware, and infrastructure. We find it interesting to observe how closely the experts rated the aggregate of the 12 attributes of these two intermediate sectors. This suggests distribution is considered an activity close to technology, hardware, and

operating infrastructure, essentially providing the “pipes” for connecting content with consumers and users. The role of distributors in linking with the audiences, marketing content to them, and playing an active role in the selection of content being produced seems to still be considered secondary, by a good margin, to that of content producers in terms of being at the core of “mediality.”

The Mediality of Companies

Moving from the macro level of an industry’s mediality, we now report findings related to the micro level of company mediality.

In Table 5, we assembled 50 major companies, listed in the order of their reported media revenues. Given the global scope of our study (14 countries), we could not include all major companies as well as large privately held firms without financial reporting. Future research can expand the sample. The table shows Amazon as the world’s largest commercial firm engaged in media activities (\$575 billion overall revenues), but for media-related revenues (Table 5, Column 2), Amazon drops to #4 with \$164 billion.⁹

Media revenues were calculated from corporate reports such as 10-Ks in the United States. Revenues were categorized into industry segments reflective of this study’s industry segments. Some companies do not cleanly delineate their activities, however. In those instances, estimates from outside sources were used or made by the authors based on company disclosures and/or press reports. We could then calculate activities’ shares in the company’s total revenues.

As discussed, not all media activities are created equally, and the media intensity of tech or telecom is not the same as that of film or newspapers. That is why we developed the concept of mediality and operationalized it. We earlier calculated industry mediality scores (MI, Table 2) based on responses from an expert panel. These scores are used to determine a company’s mediality (MC) by applying Equation 2. There are several steps in this calculation:

1. We first determine a company’s revenues in a particular media industry as a share of its overall revenues.
2. We then multiply these shares by that industry’s MI score (from Table 2).
3. We add these numbers to produce each company’s mediality score (MC) in Column 3 of Table 5 and its ranking in Column 4.¹⁰

For the firms in our sample, company mediality scores are highest for Gannett and *The New York Times*. These firms are not among the largest, but they operate in the newspaper industry that our panel

⁹ We did not include the government of China (Noam, 2016), which owns major media companies.

¹⁰ For example, Disney’s Pay-TV channels account for \$17.1 billion, which is 19.2% of its total revenues. The MI for Pay-TV channels is 73.9. It is multiplied by Pay-TV’s share in the company’s media revenues (i.e., $73.9 \times 0.192 = 14.22$). Similar calculations are made for Disney’s six other media activities, and the results are aggregated, resulting in the company’s MC of 48.5.

considered at the core of media. Meta, at #3, benefits from the high mediality of social media (high scores in distribution, interactivity, audience orientation, etc.).

High mediality scores are observed for the music streamer Spotify (#4) and for Nexstar (#5), the largest U.S. broadcast TV station owner, reflecting high weights assigned by the experts to the characteristics of audio media and broadcast TV. In contrast, most of the large tech companies are much farther down in the rankings: Alphabet (#15), Microsoft (#30), Apple (#33), Samsung (#44), and Amazon (#50). This gives some credence to their denial of being media companies. Similarly, the large telecom operators are also ranked much lower—AT&T (#34), Verizon (#36), Vodafone (#42), and Orange (#43)—given the lower weights for telecom.

4. Media revenues—reflecting a company’s media operations—are important, but so, too, is the company’s mediality score in assessing its proximity to the core of media. We join the two measures by weighing a company’s media revenues by its mediality score (MC). The results are presented in Column 6 of Table 5. For this calculation, we must reduce the impact of the numeric scale of MC, whose values are distributed in the range of 17.6–78.3 (with a median of 53.5). Instead, we ordered these weights around a median of 1, ± 0.5 . Such a normalization of the numbers around that median serves to scale the actual revenues of companies by a factor of 0.5–1.5 (i.e., it gives companies with low MC scores a negative discount of up to 50% from their actual revenues and gives companies with high MC scores a positive premium of up to 50% over their actual revenues).¹¹

¹¹ The equation is *Mediance Normalized* = $a + \left((x - x_{\text{minimum}}) * \left(\frac{b-a}{\text{range of } x} \right) \right)$, with $a = 0.5$ and $b = 1.5$, and the range of x $78.3 - 17.6 = 60.7$.

Table 5. Media Companies by Mediality-Weighted Revenues, 2023.

Company	Total Revenue (\$ mil)(1)	Media Revenues (\$ mil) (2)	Company Mediality Score (MC) (3)	Ranking by Company Mediality Score(4)	Mediality Score Normalized (5)	Company Media Rev's Weighted by Normalized MC (\$ mil) (6)	Mediality Weighted Media Revenue Ranking (7)
Alphabet (US)	307,394	305,631	68.2	15	1.275	389,608	1
Apple (US)	383,285	304,312	47.0	33	0.879	267,340	2
Microsoft (US)	211,915	171,768	50.4	30	0.942	161,815	4
Amazon (US)	574,785	164,299	17.6	50	0.329	54,050	12
Samsung (Korea)	198,247	162,600	43.6	44	0.815	132,511	5
Meta (US)	134,247	133,844	77.1	3	1.441	192,885	3
Comcast (US)	121,572	109,269	62.2	21	1.163	127,038	6
Verizon (US)	133,974	104,996	46.0	36	0.860	90,277	7
AT&T (US)	122,428	97,981	46.7	34	0.873	85,527	8
Sony (Japan)	70,279	69,184	64.5	19	1.206	83,409	9
Nvidia (US)	60,922	60,922	45.5	37	0.850	51,812	14
Tencent (China)	84,104	58,970	51.5	28	0.963	56,766	10
Disney (US)	88,898	58,298	48.5	31	0.907	52,850	13
Intel (US)	54,228	50,553	46.5	35	0.869	43,939	17
Charter (US)	54,607	47,489	56.4	23	1.054	50,063	15
Cisco (US)	56,998	43,142	43.3	45	0.809	34,917	21
Oracle (US)	49,954	41,086	45.5	38	0.850	34,942	20
IBM (US)	61,860	40,901	36.1	48	0.675	27,599	27
Warner B. D. (US)	41,321	40,519	72.3	9	1.351	54,757	11
Vodafone (UK)	49,708.50	37,190	45.1	42	0.843	31,351	24
Orange (France)	47,906.80	36,496	45.1	43	0.843	30,766	25
Broadcom (US)	35,819	35,819	47.4	32	0.886	31,735	23
Salesforce (US)	34,857	34,857	55.3	24	1.034	36,030	19
Netflix (US)	33,641	33,641	73.5	8	1.374	46,217	16
Softbank (Japan)	38,830	33,452	52.1	26	0.974	32,577	22

Qualcomm (US)	35,820	30,028	38.1	47	0.712	21,384	29
Paramount (US)	29,652	29,652	74.1	7	1.385	41,069	18
Murdoch (US/UK/Aust.)	24,792	23,094	69.8	11	1.305	30,130	26
AMD (US)	22,680	22,680	45.5	39	0.850	19,289	33
Bertelsmann (Ger.)	21,866	19,085	59.5	22	1.112	21,225	30
Baidu (China)	18,958	18,958	68.2	16	1.275	24,167	28
Adobe (US)	19,409	18,284	51.3	29	0.959	17,532	35
Texas Instruments (US)	17,520	17,520	45.5	40	0.850	14,900	36
Rodgers (Canada)	19,562	17,142	54.9	25	1.026	17,591	34
Dish (US)	17,015	16,167	64.2	20	1.200	19,400	32
Micron (US)	15,540	15,540	45.5	41	0.850	13,216	38
Spotify (Sweden)	14,620	14,620	75.9	4	1.419	20,741	31
Vivendi (France)	11,390	11,269	69.5	12	1.299	14,639	37
Intuit (US)	14,440	8,810	33.2	49	0.621	5,467	42
SiriusXM (US)	8,953	8,760	68.8	13	1.286	11,265	39
ITV (UK)	5,418	5,418	74.2	6	1.387	7,514	40
Nexstar (US)	4,933	4,933	74.9	5	1.400	6,906	41
Televisa (Mexico)	4,342.40	4,186	68.3	14	1.277	5,344	43
iHeartMedia (US)	3,912.30	3,596	65.0	18	1.215	4,369	44
Gannett (US)	2,664	2,664	78.3	1	1.464	3,899	45
MediaForEurope (Italy)	3,045	2,658	65.4	17	1.222	3,249	47
The New York Times (US)	2,426.20	2,426	78.0	2	1.458	3,537	46
Globo (Brazil)	3,118	2,183	51.6	27	0.964	2,105	48
Fuji Media (Japan)	3,417	1,956	42.6	46	0.796	1,557	49
Sun TV (India)	453	453	72.1	10	1.348	610	50

For instance, Microsoft is the third largest firm by media revenues, but they are mainly derived from data services (the Azure platform), video games, and office software, none of which was highly ranked

for industry mediality. Thus, Microsoft drops to #4. Meanwhile, Meta, ranked sixth in total media revenue, rises to third when adjusting for mediality because of the high score for social media.

When assessed by mediality-weighted revenues, the largest companies are the tech giants Alphabet and Apple, followed by Meta, Microsoft, and Samsung. Comcast, the first more conventional media firm, ranks sixth. The largest non-U.S. companies are the conglomerates Samsung, Sony, and Tencent. These firms are followed by several telecom giants. The classic media conglomerates take middle positions, with Warner Brothers Discovery (#11); Charter (#15); Paramount (#18); the Murdoch companies (United States, United Kingdom, Australia, #26); and Bertelsmann (#30). Most other classic media companies, typically giants on their home turf, are far down the global ranking: Rodgers (Canada, #34), Vivendi (France, #37), ITV (United Kingdom, #40), Televisa (Mexico, #43), MediaForEurope (Italy, Berlusconi, #47), Globo (Brazil, #48), Fuji Media (Japan #49), and Sun TV (India, #50).

Next Steps

The results encourage future collaboration with other researchers and disciplines. The following issues should be addressed:

- The attributes used for deciding mediality merit refinement and expansion. They were chosen because they are commonly attributed as distinctive to media. While many criteria were weighed highly in importance, others were ranked lower—sometimes surprisingly so. Future study should select a larger set of attributes/variables that could include, for example, additional cultural and political criteria.
- The significance of different economic factors and business models needs deeper exploration.
- The survey pool of media experts should be enlarged and widened to incorporate fields such as culture studies, production studies, and so on.
- The survey could apply a Delphi methodology in which respondents can modify responses after observing those of others and their justifications.
- Applying the model across geographic markets may produce interesting comparative results.
- Applying the model over time in longitudinal research would enrich understanding of trends in mediality.
- Collaboration with mediatization scholars would explore congruencies and differences.
- By addressing the related issue of what are news media (as distinguished from entertainment media), one could explore the “newsiality” of various media operations.
- Drilling further down, one can explore how to define and measure a writer’s mediality. With new production and distribution opportunities, citizen journalism (Rosen, 2008) and content creation on various social media outlets have proliferated (Donovan, 2025). However, if everyone is a journalist, the traditional protections afforded to the profession¹² must erode. The basic model,

¹² In the United States, legal protections include state shield laws that protect confidential sources, a qualified “reporter’s privilege” against forced testimony in court, limited protection against government seizures of records, and access to public records and places.

with a modified set of attributes, could be applied to various blogs and creator-based content communities to identify their media or news media scores.

Conclusion

We have proposed an empirically based approach for determining the degrees of media intensity in today's complex media ecology based on a measure of attributes of media intensity. This facilitates a far more granular understanding than a binary yes/no taxonomy. Our model deconstructs media activities into various attributes and applies a hedonic valuation methodology to obtain scores of media intensity. It uses two interlinked equations, one to determine the degree of mediality at an industry level and the other to determine it at the company level.

Findings include the following:

- Traditional content creation ranks by far the highest in mediality. Platforms such as search and social media also rank high because their activities, when deconstructed, score highly for the pertinent attributes.
- The experts appear to be rather agnostic about the way revenues are generated.
- Pure distribution networks were ranked fairly low in mediality, despite the origin of the word "medium" indicating an intermediary role. Distribution seems to be mainly understood as an activity closer to technology and infrastructure. Low mediality scores were also found for support industries such as media hardware makers, data providers, and processors.
- Even discounting their revenues by their relatively low mediality scores, the largest media companies, by wide margins, are the tech giants. Of conventional media companies, the largest is Comcast, followed by several telecom network operators. The classic media companies like Disney, Paramount, or the Murdoch firms trail at some distance. Most other classic media companies around the world, typically giants on their home turf, rank far lower. Thus, U.S. companies dominate as tech companies engaged in media, as more classic media companies, and as global players.

To conclude, why does defining what is and is not a media company matter? As noted in the introduction, classification matters for determinations of the applicability of policy (e.g., media or technology) and for studies about what is being managed, how, and with what implications; how investments are prioritized and structured; and what phenomena are relevant to which fields and disciplines of academic research. The greater the import of a categorization and the more complex the activity or the organizational structure of a firm, the greater the need for a differentiated tool for generating insightful analyses.

The methodology we propose can be used in various ways. Policy makers can evaluate proposed mergers and identify media market power. It is an adaptable tool superior to the conventional Herfindahl-Hirschman Index (HHI) of industry concentration because it can encompass vertical integration and conglomerate structure, as well as the media power of a firm beyond revenues or user count. Other examples of use by policy makers are in deciding the access obligations of an integrated firm and determining whether particular platforms are more in the nature of passive tech platforms or publishers

with editorial responsibilities, the strictness of scrutiny for constitutional speech protections, and the eligibility for subsidies that aim to support media.

A mediality score is not conclusive and determinative, just as the media concentration score HHI is not, but it is conducive to developing the acumen of regulators, courts, and legislators, and particular scores may be established as “trigger lines.”

The model is also useful for business management because a differentiated measure allows a more granular valuation by investors beyond current simplistic classifications. It facilitates more nuanced analyses of sprawling multiproduct conglomerates. It can be a tool for business strategists to assess an overall organization in terms of media-related divisions and activities, desired complementarities or synergies, and trends over time.

For researchers in media studies, improved understandings of how much an activity, firm, or industry is “media” are increasingly crucial because the subject of their work—media—is rapidly expanding and becoming ambiguous. Almost every major topic in the field of media studies requires a delineation of the extent of media activities, for example, how audiences associate higher mediality with trustworthiness; mediality in analyses of media concentration; identification of changes and needs in media literacy; the impact of an expanding and increasingly complex media ecology; audience research on media exposure; variables that affect mediality, such as the age of an industry or its concentration, and vice versa; and so forth.

At a more fundamental level, the approach can mitigate the tendency among scholars of communications to equate media too narrowly with content. Incorporating conduits and platforms offers a more holistic perspective and a more flexible tool of measurement.

Clearly, this is only a first step, but the approach is promising. It recognizes and accommodates the variability of media industries and allows for more pluralism in thinking, a wider inclusion of activities such as apps and performing arts, and more nuanced analyses. Subjective judgment calls will not suffice in a sector that is rapidly expanding and evolving before our eyes in a second digital convergence.

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