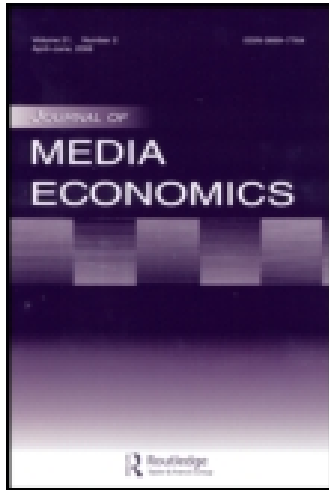


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Application of the Long Tail Economy to the Online News Market: Examining Predictors of Market Performance

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Application of the Long Tail Economy to the Online News Market: Examining Predictors of Market Performance

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The online news market worldwide has met several challenges, one of which is the lack of sustainable business models. The *long tail* is a concept defined by Chris Anderson to describe a business model used by the majority of Internet firms and ecommerce stores. Is the long tail model crucial to the news media's competitive market capacity today? The study integrates relevant economic concepts of production costs, distribution costs, search costs, and market performance to construct a long tail economy for online news. Using survey, third-party traffic metrics, and content analysis, this study found that the traffic performance of online news sites was significantly impacted by long tail forces, but the impact had not transferred to the news sites' financial performance. The synthesis provides rich explanations of how the long tail economy can be applied to online news to reveal the forces that both drive and constrain its performance.

The news industry as a whole is undergoing a transformation brought on by the emergence of digital technologies that have impacted all media. With audiences dispersing across ever more media outlets, many traditional industries are losing popularity. Most news media have tried to redefine their appeal and their purpose (e.g., hyper-local, crowd-sourcing, social-networking) based on the diminished capacity of each medium. For traditional media, the challenge is how to manage decline. However, in the case of the Internet media, some doubt that Internet revenue will grow to the point where it can pay for journalism on the scale to which news media are

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accustomed. For instance, few newspaper publishers earned sufficient digital revenues to cover online running expenses, let alone to recover online investments or compensate for declining print revenues (Kung, Picard, & Towse, 2008).

Online news is now well established as a part of most Americans daily news consumption. Six in 10 Americans get news online in a typical day but most of those also get news from other media platforms such as TV, newspapers, smart phones, tablets (Project for Excellence in Journalism, 2010). Chyi and her colleague were among the first to document the simultaneous use of different media platforms and later found a universal pattern across the United States, Hong Kong, and Taiwan (Chyi, 2006; Chyi & Huang, 2011; Chyi & Lasorsa, 2002). Within the online realm, the same pattern holds true: People surf across multiple websites for their news, e.g., legacy media sites, news portals, social networking sites (Project for Excellence in Journalism, 2012). Some 65% of online news readers do not have a favorite site that they rely on and the majority say they use two to five sites to get their news (Project for Excellence in Journalism, 2010). These are evidence of division of audiences due to the wide spectrum of media outlets.

Even more, several other statistics symbolize the intensifying challenge for the news industry. First, the most frequently visited news sites was Yahoo (Pew Research Center for the People and the Press, 2010), which is a portal, not affiliated with legacy media. Secondly, the highest portion of Internet advertising revenue (28%) goes to search engines and Internet service providers rather than to news-related companies such as newspaper websites (5%) or other news and current events sites (less than 3%). Thirdly, news sites got about 10% of their traffic from social media, which is almost half of what comes from search engines (Project for Excellence in Journalism, 2012). In other words, news media is competing with various rivals including portals, search engines, Internet service providers, social media, and more.

Although whether digital content should be free had incurred serious debates, general news online became increasingly open to charging for at least part of their content as digital subscriptions by pioneers like London's *Times* and *The New York Times* (Lefkow, 2011, May 17). *The New York Times* reported that its circulation revenue exceeded its advertising revenue after 2 years of digital subscription program. So far, one third of U.S. dailies have launched plans for some kind of paid content subscription or pay wall plan (Project for Excellence in Journalism, 2013). Many news executives believe that a new business model will emerge in which the mix between advertising and circulation revenue will be close to equal, most likely with a third source of non-business income. Even if the model answers a question of how news media will make money, it doesn't plot how news media will sustain their profit stream over time.

To explore news media's competitive market capacity, economic theories are applied in this study. As opposed to conventional theory of exposure (McPhee, 1963), superstar effect (Rosen, 1981), the winner takes all society (Frank & Cook, 1995), or the 80/20 principle (Koch, 1998), Anderson (2006) introduced *The Long Tail: Why the Future of Business is Selling Less of More* as an entirely new business model that showed how successful e-businesses with the help of new information technologies were expanding their reach to previously unreachable customers. Amazon.com served as an example: About a quarter of its book sales came from outside its top 100,000 titles, around the number that the average brick and mortar bookstore carries. Amazon had successfully combined enough of the non-hits and established a new marketplace that had not previously been explored. If the Amazon statistics are any guide, we wondered: Is there

a long tail economy for online news media and to what extent can the online news sector be sustainable for a variety of players? Specifically, this study seeks to uncover the relationship between long tail forces and market performance in the online news market.

THE LONG TAIL ECONOMY

Conventionally, economic analyses would show that McPhee's (1963) "theory of exposure," Rosen's (1981) notion of "superstar" effect, and Frank and Cook's (1995) idea of "blockbuster strategy" or "the winner takes all society" hold. These strategies favor a stable fat-tailed distribution of 80/20; that is, 80% of the wealth is owned by about 20% of the population in Pareto's classic study or in Koch's (1998) application to business administration that 80% of total revenue will be generated from just 20% of the total product lines. However, a more recent, alternative theory predicts just the opposite: Anderson (2004, 2006) discovered that the total sales value of products in the tail is worth as much as the sales values of the hits. His insight led to the idea of "the long tail," which was first published in *Wired* magazine and then in the book.

The long tail idea is based on several phenomena: "(1) the tail of available variety is far longer than we realize; (2) it's now within reach economically; (3) all those niches, when aggregated, can make up a significant market" (Anderson, 2006, p. 10). None of the aforementioned phenomena can happen without a reduction in the cost of reaching niches. At least three powerful forces cause those costs to fall: "democratization of the tools of production, democratization of the tools of distribution, and the connection of supply and demand" (pp. 52–57).

The Three Forces of the Long Tail Economy

The first force, democratizing the tools of production, has two implications: more producers and/or more products. Because of the capacity of information technologies, individuals can now do what just a few years ago only professionals could do. Examples of the first force include digital video cameras, music and video editing software, and blogging tools (Anderson, 2006). The result is that the available universe of content is now growing faster than ever, which extends the tail to the right.

The second force that bolsters the long tail economy is the democratization of the tools of distribution. Information technologies have dramatically lowered the costs of delivering and enlarging output channels, thus considerably and effectively providing consumers more access to niches. Aggregators such as Amazon, eBay, iTunes, and Netflix (Anderson, 2006) have a key role in the second force, as they provide cheap and easy access to the content being produced. Increased access to the goods on offer causes more niche goods to be available to users who would simply not have access to those goods from traditional distribution channels (Evans, 2009). With more access to niches, the second force's effect is to fatten the tail.

The third force of the long tail model is connecting supply and demand through filters. The incremental use of information technologies like filters to connect consumers to products or services is what drives consumer demand from the head to the tail. This can take the form of anything from Google's wisdom-of-crowds search, iTunes' recommendations, word-of-mouth,

blogs, to customer reviews (Anderson, 2006). By connecting supply with demand through the use of social data (Evans, 2009), demand is driven to products further down the tail, ensuring it is not just the hits that are being accessed.

In economic terms, the three forces of the long tail, which traditional firms do not possess because of the constraints of physical products and shelf space, allow Internet firms and ecommerce stores to cut production costs, distribution costs, and search costs so as to bundle a huge inventory of hits and niches. In the case of Amazon, Paretian principles provide an accurate model of the popularity of its hit products sold, but Amazon, with its virtual store front, can stock millions of niche products and is therefore able to sell products all the way down the vanishing point of the tail (Evans, 2009). With the help of information technologies, the forces that underline such long tail have been harnessed for competitive advantage.

Applying Long Tail Economy to Online News

Drawing from Anderson's (2006) long tail model, a business that can offer more niche products, in addition to popular ones, is expected to be most successful. Traditional news media have done a good job in bundling stories together by providing different layouts and different news beats to attract the mass audience (Kung et al., 2008); whereas online news is in a sense a legitimate example of bundling hits and niches by offering content that ranges from homepage news about local, national, and international affairs to pages like obituaries, crosswords, and horoscopes. The Internet and digitalization allows online news to reach heterogeneous readers seeking both popular and less popular news and information (Silk, Klein, & Berndt, 2001). In general, when news media go online, new efficiencies are created in manufacturing, distribution, and marketing. The unique capabilities of the Internet may influence the economic efficiency of online news and provide the foundation for a long tail economy. This section discusses how the Internet environment influences online news and contributes to the long tail economy, specifically in terms of production costs, distribution costs, and search costs.

Production Costs. The long-standing business model for news media was driven by the fact that the first copy costs of producing daily content are high. Even if the first copy costs are still high for online news, the costs of reproduction have been reduced (Kung et al., 2008). News sites now can reproduce different combinations of news content to different audiences (Foust, 2005), also known as customization, which prolongs the online news product lines with only a few costs. Also, news websites can offer breaking news and multimedia enhancements at a comparatively low cost level, thereby increasing the variety of news products and contributing in turn to the long tail economy. A third aspect of Internet influence on content is the easy access to open source materials. The online networking environment makes it convenient and cost-effective for news sites to enrich their offerings with out-of-house resource exchange and crowd sourcing. The additional content provided by links and user-generated content add value and diversity to websites at little or no cost (Briggs, 2007; Foust, 2005).

Distribution Costs. As Sparks (2000) noted, 50% of the cost of publishing a U.S. newspaper is consumed by the physical process of distribution. Going online could remove costs associated with printing and delivery. From a distribution cost perspective, delivering digital content or products online has almost zero cost. As a result of falling distribution costs and

the emergence of powerful information technologies, companies are able to much more easily reach particular groups of people, regions, or niche markets. In the news industry, low-cost digital distribution has diminished the limitations of time and space, enabling news sources to reach audiences they could not reach before, including minority groups such as immigrants, and even readers in long-distance markets (Chyi & Sylvie, 2010; Kung et al., 2008). The online edition of the *Wall Street Journal*, for example, is now accessible in the smallest village in Europe or Asia as long as the village has an Internet connection. With such a fall in distribution costs, the long tail should become a larger player in the news business.

Search Costs. In economics, *search costs* refer to monetary and nonmonetary spending that gets in the way of finding what consumers want (Kung et al., 2008). The Internet facilitates an essential aspect of the consumption process—searches. In the news industry, search tools and techniques include news searching, news comments, recommendations, most people viewed, news score system, sharing, blogging, polls, forums, and more. A study showed people picked more articles if a news site featured explicit recommendations, and stronger explicit recommendations instigated longer exposure to associated articles (Knobloch-Westerwick, Sharma, Hansen, & Alter, 2005). Information technologies enable these search methods and have lowered the costs of finding niche content, further evidently expanding the reach of news into the long tail consumer segment.

Previous Studies With Mixed Results

The long tail phenomena are not new with the development of digital technology, the majority of relevant studies consider such issues as the reasons for and the phenomena of “product segmentation” or “product diversification” in prelong tail markets (Chan-Olmsted, 2006). Product segmentation concentrates on differences among products that comprise markets (Barnett, 1969); that is, a company can produce a single product with variations, market it to different customer groups and therefore increase market share. Recent studies also examine online industries, mainly regarding consumer products, their product segmentation, and the industries’ market performance (e.g., Li, 2001; Maynard, 1995; Wicks, 1989).

However, those who explicitly tested the long tail phenomena on an empirical basis have produced mixed results as far as various industries are concerned. The model has been validated by a variety of new media applications such as online book stores, search engines, digital music and movie services, and online news. For example, Brynjolfsson, Hu, and Smith (2006a, 2006b) investigated a multichannel retailing company and found that the Internet channel exhibited a significantly less concentrated sales distribution, when compared with traditional channels. Applied to the online newspaper industry, Sylvie (2008) studied the connection between the long tail model and online news use, called “geographic long tail” and suggested that usage might become more concentrated among long-distance users, rather local readers.

But not all studies have reached similar conclusion. In Smyrniaos, Marty, and Rebillards’s (2010) research on the long tail of French-speaking news websites, they argued that it was the 80/20 principle, not the long tail phenomenon that ruled the online news market; that is, the spectrum of issues that websites dealt with was highly concentrated on a few major and redundant ones. Besides, Elberse and Oberholzer-Gee (2008) examined competing hypotheses between the “long tail” idea and the “superstars” theory in video sales both online and offline

and found that the popularity of niche titles went hand in hand with a significant concentration of success on ever fewer items and the video sales declined across all quantities of the distribution. Such results imply that the top end of distribution draws smaller audiences and the tail end appears incredibly flat.

THE MODEL

This diversity of viewpoints leads the present study to examine a long tail economy in a more comprehensive way. First, the study accounts for most products and services (except for display ads) a news website can offer into consideration, rather than looking solely at news stories or homepages. Secondly, the study explores the specific forces of the long tail, rather than analyzing content diversity, which constitutes only a fraction of the long tail concept. Lastly, the study attempts to bridge a gap between the three-force strategy and market performance. Therefore, the study explores *The Long Tail's* most crucial implication, that the long tail benefits market performance (Anderson, 2006); that is to say, a determination of whether there is a long tail economy in any given news site should rely on a linkage between its long tail forces and market performance. Figure 1 was based on the conceptualization of a structural model, where a news site's market performance derives from its level of production democratization, of distribution democratization, and of supply and demand connection. The measurement component of the model shows the independent factors to have six indicator measures (i.e., content variety, service variety, classified variety, participation variety, access options, and filter tools) and the dependent factor to have four (i.e., profitability, revenue growth, monthly unique users, and traffic growth).

Notably, the long tail concept represents a company-level analysis, presenting how companies like Amazon, iTunes, and Netflix are making everything available and driving demand

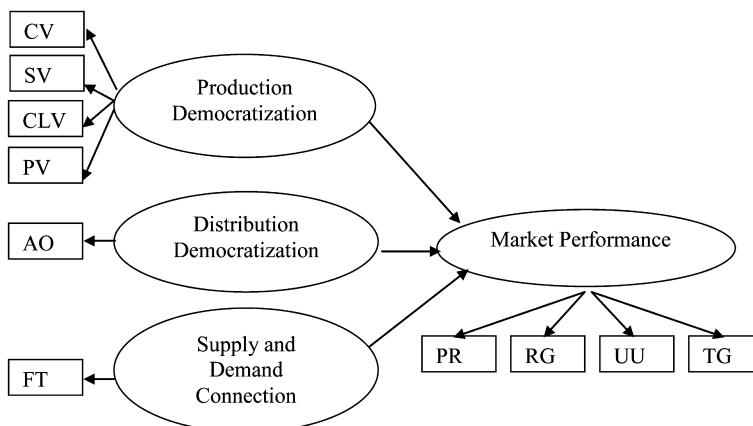


FIGURE 1 Model of the long tail economy for online news. CV = content variety; SV = service variety; CLV = classified variety; PV = participation variety; AO = access options; FT = filter tools; PR = profitability; RG = revenue growth; UU = monthly unique users; TG = traffic growth.

down their long tail (Anderson, 2006). Thus, the long tail concept referred here is a description of different news sites' products and services. Accordingly, we address the following research questions:

- RQ1: To what extent are the long tail forces adopted by news sites?
- RQ2: What are the most frequent long tail forces adopted by news sites?
- RQ3: What are the links between the long tail forces and news sites' market performance?

METHODS

To zero in on the long tail economy of the online news market from several independent directions, this study uses (a) financial data from a manager survey of online news sites, (b) third-party data from *Bacon's Internet Media Directory* and Nielsen Media Research, and (c) a content analysis of the surveyed news websites. The multimethod approach to collecting data is detailed below.

Dependent Measures

Operationalization. *Market performance*, the key concept of the dependent measures, is defined as the result of a firm or industry's activities considered in terms of the efficiency, equity, progress, and externalities created (Albarran, 2002; Picard, 1989). To evaluate market performance from a microeconomic perspective, most empirical studies have examined financial performance or business performance. Financial performance centers on the use of simple financial indicators such as profit margin or revenue growth, assumed to reflect the fulfillment of the economic goals of a firm (Dess & Robinson, 1984; Zou & Cavusgil, 2002). Business performance, in addition to indicators of financial performance, emphasizes nonfinancial but business-related factors such as market share, product quality, or marketing effectiveness (Venkatraman & Ramanujam, 1986, 1987). Various media-related studies have used newspaper circulation or broadcast rating as a proxy of media performance (e.g., Chan-Olmsted & Ha, 2003; Stavitsky, 2000). This study thus proposes profitability and revenue growth as indicators of financial performance, and monthly unique users and traffic growth as indicators of business performance.

Survey Procedures. To obtain market performance data from news sites, this study is based on a survey of U.S. news sites cross-listed in the 2006 and 2007 editions of *Bacon's Internet Media Directory*. The directory, which provides Web managers' contact information and Nielsen's *NetRatings* data, is an ideal population for the present study, given that the number of news sites changes daily. As a result, 720 news sites fit the population description. Because this number is not large, a census, rather than a random sample, was surveyed. As the average response rate of business surveys is 21% (Dillman, 2007), a mixed-mode survey including a preliminary notice, a Web-based questionnaire, e-mail reminders, and telephone reminders was implemented in 2007 to increase response rate and aid coverage for the census. Of the 720 participants receiving the questionnaire, 208 completed the survey and 119 were bounced back because of undeliverable addresses or company firewalls, so the

overall response rate was 29% (208 of 720) and after accounting for the undeliverable surveys the final response rate was 34.6% (208 of 601). The responding sites included 126 local newspaper sites, 70 local broadcast sites, six national sites, five news service sites, and one portal site.

The study measured financial performance by the percentages of profitability and revenue growth. Note that revenue growth represented the annual growth rate and that profitability was defined as gross profit margin over a fiscal year. Managers were asked to provide the percentage of profitability in one fiscal year and the percentage of revenue growth compared to the last fiscal year. Answers were provided on an ordinal scale at 10% increments.

Secondary Data. Third-party data of monthly unique users and traffic growth were also taken from *Bacon's Internet Media Directory*. The directory provided *NetRatings'* data for news sites that generated at least 1,000 unique users per month. Thus, the numbers of monthly unique users for news sites directly recorded from the directory. Traffic growth represented an annual growth rate of unique users and was calculated using the following equation.

$$\text{Traffic Growth} = \frac{\text{Unique Users} - \text{Unique Users (yr ago)}}{\text{Unique Users (yr ago)}} * 100.$$

Independent Measures

After the survey finalized our sample, we performed a detailed content analysis on it to examine the three long tail forces. Quantitative content analysis is an ideal method to measure the level of long tail forces exerted because Riffe, Lacy, and Fico (2005) have argued that the study of communication content is central to understanding both the antecedents and consequences of the content itself. Besides, doing survey before content analysis was to prevent sample attrition (Babbie, 2008) because some content-analyzed news sites might not participate the following survey. Given the nature of the present study is cross-sectional and the purpose is to look for associations, the data collection order should not cause a problem.

Operationalization. According to Anderson's (2006) most concise definition, any company adopting the three-force strategy will result in more products (which lengthens the tail), more access (which fattens the tail), and more filters (which drives businesses from hits to niches) (pp. 54–56). Thus, we examined whether a news site with more products, more access, and/or more filters performs better in the online news market. Few studies have empirically tested Anderson's three long tail forces, so the present study developed a coding scheme mainly based on the numerous examples provided in *The Long Tail* and on our professional experience in the news industry. It is noteworthy that the entire site was coded, including links and pages associated with each particular variable of interest. This method has been used in previous studies to obtain the most comprehensive snapshot of a website (Chan-Olmsted & Park, 2000; Macias & Lewis, 2003).

The first force is democratizing the tools of production. To examine the evidence of production democratization, we used four indexes: content variety, service variety, classified variety,

and participation variety. First, content, service, and classified variety indexes were created by counting categories of each news site. Categories on the homepage were named “first-level categories,” categories under the first-level on the index pages named “second-level categories,” and so on. For example, the content index of a news site included first-level categories such as “news, travel, money, sports, life, tech, and weather”; second-level categories under money were “markets, business, personal finance, and cars”; third-level categories under cars were “find a car and galleries.” The category counting continued until coders reached story pages. The differences among content, service, and classified depended on the content characteristics under each category; for example, content must be editorial stories; a category full of tables or graphs such as traffic cameras, quizzes, lottery, scores, and TV schedule should be service; classified were categories under classified ads. Secondly, the index of participation variety measured whether there are categories under which users were able to comment, recommend, rate, and share stories or provided with personalized pages, blogs, polls, and forums. For the index, homepages, index pages, and story pages were visited and coded.

The second force is democratizing the tools of distribution by providing more access to niches. To calculate the access options, coders were instructed to record whether news sites took advantage of various information and communications technology options to attract users through not only the Website but also other platforms like newsletters, mobile, really simple syndication (RSS), instant messaging, twitter, and podcasts. News sites usually provided links at either the top or the bottom of their homepages labeling something like “more ways to get us.” In a similar vein, for the third force, connecting supply and demand, coders were instructed to record whether the news sites provided various filters such as news search, most viewed, and most recommended to increase demand for niches and flatten the demand curve. These sections usually appear on the homepages, index pages, and story pages.

For the above indexes of participation variety, access options, and filter tools, open-ended questions were also provided to achieve exhaustiveness because it might not be possible to create a coding scheme for all the activities happening on the Internet. Thus, coders typed down the names of sections which were not mentioned in the codebook as “others.” For instance, some news sites offered submit your news, share an idea, letters to the editor, etc., which were recorded as other participation opportunities. To construct the three indexes, coders summed both the close-end and open-ended answers.

Content Analysis. Among the 208 news sites, four sites had to be removed from the content analysis sample because they were either shut down or in Spanish. A code sheet was developed to record information on how and what news sites were presented in terms of the three forces. Three coders (students majoring in Communication and Technology) were trained on how to code the news sites and what definitions corresponded to each variable on the code sheet. Overall, 10% of the news sites were randomly selected and independently coded to establish inter-coder reliability. Because our variables were indexes at the ratio level, Neuendorf (2002) suggested that Pearson’s r was used more commonly for testing intercoder reliability when assessing the degree of linear correspondence between two sets of interval or ratio numbers. The coefficients of reliability ranged from .30 for the classified variety to .99 for the content variety (Table 1). As reliability coefficients of .80 or greater are acceptable, service variety and classified variety were dropped from further statistical analyses.

TABLE 1
Inter-Coder Reliability of the Long Tail Indexes Among News Sites

	<i>Pearson's r</i>
Content variety	.99
Service variety	.53
Classified variety	.30
Participation variety	.88
Filter tools	.85
Access options	.89

Control Measures

Secondary Data. There are various ways to control the present model. Previous studies have identified market size, experience, media types (affiliates vs. pure players or national vs. local) as important factors in online news performance. For example, the strategic importance of market size holds true for all news sites: The larger the market the sites operate in, the more revenue and resources are available to the sites (Chan-Olmsted & Park, 2000). Huang and Sylvie (2010) found that older sites knew how to make profits on the Web better than younger sites. Besides, many media scholars study online news sites by their affiliations due to the distinct nature of each media type (e.g., Chan-Olmsted & Ha, 2003; Chyi, 2005). Constrained by case to variable ratio and level of measurement, the study borrowed Nielsen Media Research's DMA index to control market size and *Bacon's Internet Media Directory's* records of launch year as an experience control.

RESULTS AND DISCUSSION

RQ1 stated, "To what extent are the long tail forces adopted by news sites?" To examine the evidence of the three long tail forces, we report descriptive statistics of content variety, participation variety, access options, and filter tools, which we have reliable information from the 204 news sites in the United States (Table 2). Concerning the four indexes of interest, the range of content variety (categories) was from 3 to 459 with a mean of 81.19; the range of filter tools was from 0 to 23 with a mean of 8.44; the range of participation variety (categories) was from 0 to 15 with a mean of 5.83; the range of access options was from 1 to 15 with a mean of 5.05. To observe the long tail phenomena among the news sites, we first sorted the numbers of each index from the largest to the smallest and divided the means of the index ranked at the top by the means of the whole sample, results show that some news sites, whether they were aware or not, were long tail adopters because they provided up to three times more products, access, and filters than the average sites. Besides, we are able to consistently identify that content variety was the most adopted long tail force among online news sites, followed by filter tools, participation variety, and access options based on the size of the multiples (e.g., 3.21 > 2.06, 1.98, and 2.51). Previous studies may partly confirm the results: Maier (2010) conducted a week-by-week analysis of five mediums' top 10 news stories and found that 40% of the top stories on news sites were not covered by newspapers, network television, cable television, nor

TABLE 2
The Most Frequent Long Tail Forces Adopted by Online News Sites

	<i>Content Variety (Top % M/M)</i>	<i>Participation Variety (Top % M/M)</i>	<i>Access Options (Top % M/M)</i>	<i>Filter Tools (Top % M/M)</i>
<i>M</i>	81.19 (1.00)	5.83 (1.00)	5.05 (1.00)	8.44 (1.00)
Top 5%	260.90 (3.21)	12.00 (2.06)	10.00 (1.98)	21.20 (2.51)
Top 10%	210.15 (2.59)	10.90 (1.87)	8.80 (1.74)	19.25 (2.28)
Top 20%	168.05 (2.07)	9.70 (1.66)	7.78 (1.54)	16.75 (1.98)
Top 30%	146.10 (1.80)	9.00 (1.54)	7.18 (1.42)	15.07 (1.79)
Top 40%	131.63 (1.62)	8.38 (1.44)	6.78 (1.34)	13.63 (1.61)
Top 50%	120.60 (1.49)	7.90 (1.36)	6.42 (1.27)	12.52 (1.48)
Minimum	3	0	1	0
Maximum	459	15	15	23
Skewness	2.82	.60	1.06	.88
Kurtosis	13.49	.91	3.95	.26
Valid <i>N</i>	204	199	200	204

radio; Wang and Huang (2011) reported that the average number of news categories was 35 in printed newspapers and 95 on news sites.

Moreover, skewness and kurtosis statistics of the four indexes showed that content variety and access options were positive and greater than 1.00 (Table 2), representing that a few news sites distorted toward the high end and most news sites peak-clustered to the left at the low end. Several outliers are worth noting. For example, *USA Today* (usatoday.com) and *Orange County Register* (ocregister.com), respectively, offered 459 and 430 content categories, leading far ahead of other news sites; *USA Today* (usatoday.com) and *The Tampa Tribune* (tbo.com) were the sites with the most access options, that is, 15 and 13, respectively, including Website, newsletters, mobile, RSS, instant message, podcasting, and so on, compared with some news sites could only be accessed from their websites. In sum, the extent of the long tail forces adopted by news sites differs to a great degree. The next question would be “Do the news sites that consider the potential of a long tail market gain a competitive advantage?” We will come to it in the third research question.

RQ2 stated, “What are the most frequent long tail forces adopted by news sites?” Because the long tail forces used tools of production democratization, distribution democratization, and supply and demand connection, it’s essential to understand the various tools used in the 204 news sites (Table 3). Beyond counting the numbers of content categories and subcategories of each news site, we also recorded the names of news sites’ first-level categories to examine their regular sections for content variety. We found that more than half of the news sites featured news/headlines (89.7%), sports (80.9%), and entertainment (51.0%) in their first level categories, whereas categories such as politics (4.4%), nation (4.4%), world (3.4%), community (21.6%) were not highly adopted. Our results confirm a trend toward infotainment or tabloidization in the news industry (Grabe, Zhou, Lang, & Bolls, 2000; W. Wang & Huang, 2011; Graber, 1994).

In terms of participation variety, a total of 92.1% of news sites allow users to share news stories with family or friends (Table 3). Users are also able to comment on any stories produced

TABLE 3
The Most Frequent Long Tail Forces Adopted by Online News Sites

<i>Index</i>	<i>Frequency</i>	<i>Valid %</i>
Content variety		
News/headlines	183	89.7
Sports	165	80.9
Entertainment	104	51.0
Opinions	86	42.7
Weather	80	39.2
Blogs	48	23.5
Community	44	21.6
Life	39	19.1
Video	37	18.1
Lifestyle	34	16.7
Participation variety		
Share a story	187	92.1
Comment on a story	166	81.8
Poll	124	60.8
Forum	112	54.9
Submit your photos	96	47.1
Readers' blogs	57	28.1
Recommend a story	50	24.6
Letters to editors	48	23.5
Readers' opinions	41	20.1
Submit your videos	32	15.7
Access options		
Website	204	100.0
Newsletters/emails	183	90.1
Really simple syndication	181	89.2
Mobile	141	69.1
Twitter	105	51.7
Facebook	56	27.5
Podcasts	47	23.2
Instant message	9	4.4
Myspace	8	3.9
YouTube	5	2.5
Filter tools		
News search	194	95.1
Top stories/headlines	172	84.3
Most viewed	128	62.7
Latest news/most recent	123	60.3
Most commended	84	41.2
Most emailed	49	24.0
Featured stories/video	46	22.5
Calendar/events	37	18.1
Most recommended	32	15.7
Special reports	28	13.7

Note. The list is not exhaustive: Only the top 10 variables of each index are reported.

by the news sites (81.8%) or to respond to polls (60.8%) and forums (54.9%) on all sorts of issues. Although fewer than half of the sites provide spaces for users to submit their photos (47.1%), videos (15.7%), and news or news tips (12.3%), we found that the traditional line between producers and consumers had blurred. Participation that results in substantial user generated content has made consumers more active and producers more cost-effective.

In addition to home page, more than half of the news sites delivered their latest content through newsletters/emails (90.1%), RSS (89.2%), mobile phones (69.1%), and Twitter (51.7%) (Table 3). Some popular social networking services, such as Facebook (27.5%) or YouTube (2.5%), still were not commonly adopted as access points for content, but we foresee an increase in the near future. In the past, the Web 1.0 strategy was to pull people to sites either for content or for business; the Web 2.0+ approach now sends messages to crowded places. Once the crowds find a site's information engaging, they will become more likely to visit the site in the future. According to a trade report, MSNBC gained 2,500 Twitter followers and 22,000 new Facebook fans in the week following Bin Laden's death (Tenore, 2011).

In Table 3, the most commonly used filter for online news sites is news search (95.1%). News search provided by most news sites functions as an internal filter because it brings back just the stories and images that are most relevant or most current to users' search terms. It is also noted that the adoption of the "most viewed" (62.7%) or "most commented" (41.2%) tools based on collaborative filtering is a brand new practice that was not used in traditional media before. Consequently, online news readers, different from audience of traditional media no longer get stories on the front pages or in the headlines, but venture into narrower communities of affinity or go deeper into their chosen subject matter instead. The main effect of filters is to help people move from the world they know ("hits") to the world that they don't know ("niches") via a route that is both comfortable and tailored to their tastes (Anderson, 2006, p. 109). Although some argue that a most-emailed or most-viewed list is presumably focused on the most popular content, the significance may exist between content picked by editors (the hits) and content backed by social data (the niches). A study also showed that these collaborative filters encouraged people to read more and stay longer (Knobloch-Westerwick, et al., 2005). As a result, it is likely not just the headlines or top stories that are being accessed.

RQ3 attempted to examine relationships between long tail forces and market performance in the online news market. In Step 1, four hierarchical regressions were performed. Each regression model treated one of the market performance measures as the criterion and the three long tail forces as predictors with market size and experience as controls. Data were tested for the regression assumptions of normality, linearity, outliers, and multicollinearity (Hair, Black, Babin, Anderson, & Tatham, 2005). All assumptions were met except for the violation of normality in four variables: content variety, access options, unique users, and traffic growth. The study compared a baseline regression model with a revised regression model incorporating variables with transformations of the assumptions and omissions of multivariate outliers. The revised models were reported only if R^2 improved 2% or more than the baseline model. A note at the end of Table 4 specifies which model was used. In Table 4, the total R^2 shows only the two models of traffic performance that are significant at the .05 level. The model accounting for 19% of variance in monthly unique users performed the best, $F(6, 176) = 6.99, p < .001$; the long tail forces explained an additional 10% of the variance even when the effects of market size and experience were statistically controlled for. Specifically, a news site providing a variety of editorial content ($\beta = .30, p < .01$) and participating in a large media market

TABLE 4
Hierarchical Regressions Using Market Performance Measures as Criteria

	Unique Users			Traffic Growth			Profitability			Revenue Growth		
	Zero-order Correlation	Final Beta	Zero-order Correlation	Final Beta	Zero-order Correlation	Final Beta	Zero-order Correlation	Final Beta	Zero-order Correlation	Final Beta	Zero-order Correlation	Final Beta
Block 1												
Market size	.21*	.20**	.13	.05	.09	.06	.01	.04				.04
Experience	.21**	.14	-.14	-.23**	.22**	.10	-.13	-.15				-.15
Incremental R^2		.09***		.06**		.02		.02				.02
Block 2												
Content variety	.23**	.30**	.02	-.01	.20*	.08	-.11	-.09				-.09
Participation variety	-.04	-.10	.00	-.09	.26**	.21*	.06	.09				.09
Access options	.09	.10	.09	-.01	.04	-.03	-.10	-.10				-.10
Filter tools	.03	.05	-.12	-.14	.10	.01	.11	.12				.12
Incremental R^2		.10***		.04		.06		.04				.04
Total R^2		.19***		.10**		.08		.06				.06
Adjusted R^2		.17***		.07**		.04		.02				.02
Durbin-Watson		1.91		1.79		1.90		1.87				1.87
N		183		185		135		162				162

Note. For the regression using unique users as a criterion, a revised model is presented because R^2 improved 7% after two outliers were removed. For other regressions, no forms of transformation nor of outlier omission could satisfy normality and improve R^2 , baseline models are presented. Exclude case listwise was used for missing values.

* $p < .05$. ** $p < .01$. *** $p < .001$.

($\beta = .20, p < .01$) significantly attracted more monthly unique users. As to the traffic growth model, $F(6, 178) = 3.17, p < .01$, it was significant but in a negative direction, representing older news sites might be able to generate more unique users ($r = .21, p < .01$) and earn higher profits ($r = .22, p < .01$), but they might have reached their capacity in terms of traffic growth ($\beta = -.23, p < .01$), so we found older sites were less likely to grow. Although the overall model using profitability as a criterion was not supported, participation variety ($\beta = .21, p < .05$) that significantly affected the level of profitability may reinforce the importance of engagement and loyalty. In other words, news sites that take advantage of building up various participation options for readers may attract readers to visit them more often and longer so as to encourage subscriptions or online shopping than news sites that do not focus on it.

CONCLUSION

The study explores whether online news sites can exploit the long tail economy to improve their market performance. Our study verified by regression analyses that the one long tail force (i.e., content variety) of the online news market significantly contributes to website traffic when controlling for the market size and experience of individual institutions, but the other three forces failed to show an important impact on website performance. Moreover, the relationship between the long tail forces and a website's financial performance was not statistically significant as traffic performance. That is, editorial and technological strategies in news sites such as the number of content categories, participatory features, and distribution channels made available contribute only to news sites' business performance in the form of web traffic but not to their financial performance in terms of profitability and revenue growth. Seemingly, online news institutions still have no idea about traffic monetization. A few issues need to be addressed.

For online news institutions during the time we study, advertising was still the main revenue model, as audiences did not pay for most online content (Mensing, 2007). However, making revenue via advertising also involves difficulties in making readership turn into profitability. The first reason for this challenge is that the mass aggregation and availability of content and channels on the Internet means that the space and channels on the web for advertising seem unlimited as well, making online advertising relatively worthless. The inter- and intramedia competition among numerous news institutions and other online institutions for limited advertising revenue sources has further worsened online news publishers' advertising income. Second, the Internet has empowered audiences with more control in choosing online content, news, or advertising, by equipping them with new information technologies to avoid commercials they do not want to encounter. In the past, for traditional media models such as broadcasting, commercials were more intrusive and unavoidable even though some audiences could use a remote or TiVo to skip them. In contrast, today's commercials on the Internet require the audience to more actively click on an icon to read them. With the advertising overload on today's Internet, the clicking rate for bar commercials, for example, has fallen from 2% to less than 1% (Z. Wang, 2008), seriously threatening online publishers' potential advertising income.

In response to it, paid digital content experiments have been started by a third of the online news publishers (Project for Excellence in Journalism, 2013). From a business standpoint, our

findings may help the publishers to understand how news media could sustain their profit stream over time because the results indicate that superior market performance depends on at least three positive and significant factors: content variety, participation variety, and market size. Except for the control measures whose effects were previously documented (e.g., Chan-Olmsted & Park, 2000), the study found two relations particularly vital: content variety predicted unique users and participation variety predicted profitability. The results make sense for several reasons. On one hand, if a news site provides diverse and even niche content, readers of all kinds tend to visit the site and read whatever they want, which might help grow the traffic number. However, these readers may not have a strong connection with the news site if they merely are passive readers. On the other, if a news site constantly offers many opportunities for their readers to interact with the site or with other readers, readers tend to visit the site more often and stay longer especially the ones who blog or comment on the site. The number of those readers may not be large, but the degree of engagement and loyalty are substantial, which in some way creates profitability potentials because those engaged and loyal readers may be more likely to rely on the site's advertising for purchase decisions or to participate in the site's promotional events. Thus the study suggests the online news market still can navigate through the solvency challenge if each news site knows more precisely the significant predictors of different market performance.

It is also important to address limitations in our study and directions for future research. In terms of product variety for production democratization, the indexes were created by counting categories and subcategories provided by each news site, but the method might have suffered due to different website structures (flat or deep). Although we had attempted to count the number of web pages on each site, available tools (e.g., Grab-A-Site or Website Downloader) were not able to generate meaningful numbers. As software technologies advance, future work may use more advanced measures to examine the product variety. Another methodological drawback in this study was the use of self-reported data. Because established industry reports don't provide financial data for business units like online news sites, as Chan-Olmsted and Ha (2003) suggested, using survey data is necessary when appropriate financial reports are unavailable. Further, the uncustomized third-party traffic metrics limit us to discussion of the association between each long tail tool and its market performance. For example, it would be interesting to know how much traffic each of the most frequent long tail tool generates in a given news site.

Moreover, future studies may want to tap in other important issues in the online news market such as: bundling strategies, personalized/customized added value content, alternative digital distribution content (search engine aggregators, Wikipedia, You Tube, user-generated content, individual blogs, etc.), wireless access, market size, content variety, participation variety, economies of scale, economies of scope, two-sided markets, network externalities, media branding, engagement and loyalty of consumers, internet usage, socioeconomic and cultural factors, semantic web 3.0.

All in all, the results of our research reveal that online news institutions have responded to the changing market trend of segmentation and niches by deploying a long tail economy in terms of content, service, and participation variety through the aid of information and Internet technologies. However, despite carrying out the long tail model, online news institutions are still encountering the difficulty of turning web traffic into real profit and revenue, without which the survival and economic health of online news institutions is in question.

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