Industry and Firm Effects on Performance: Evidence from the Online News Industry in U.S.

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ABSTRACT The online news industry in the United States faces a challenge: Whether online news media can produce enough quality content that generates revenue and profit at a level comparable to traditional media. To meet the challenge, this study applied two economic models, the industrial organization (IO) and the resource-based view of the firm (RBV), to locate the determinants of market performance for the industry. Relatively, IO's industry effects were twice as powerful as RBV's firm effects in explaining news sites' revenue growth, profitability, and relative performance. Together, the determinants derived from both models explained 21 to 39 percent of variance in market performance among the 208 news sites in the study.

KEY WORDS: online news, industrial organization, resource-based view, market performance

The news industry as a whole is undergoing a transformation because of the emergence of digital technologies that has impacted all media. With audiences dispersing across ever more media outlets, nearly every media industry now is losing popularity. But many news media have tried to redefine their appeal and their purpose (e.g., hyper-localism, social media) based on diminished capacity on each medium. For the traditional media, the challenge is how to manage decline. But for the Internet media, some doubt that Internet revenue will grow to the point where it can pay for journalism on a scale to which media are accustomed. To better prepare for the challenge, this study attempts to...
identify the determinants of market performance for the online news industry.

To determine how an industry in a market economy performs, casual observation, common-sense judgment, and formalized economic theories suggest examining industry structure and firm behavior. Although industry structure and firm behavior are common determinants of market performance, different schools of thought assign different weights to each. One perspective, the industrial organization (IO) model, considers industry structure a central predictor of market performance and treats various industry participants as unitary actors (Bain, 1959; Scherer & Ross, 1990). For example, IO economists—because IO assumes all local stations under the same industry structure act similarly—would attribute the high profitability of a local TV station mostly to its oligopolistic industry structure instead of its tailored firm behavior. However, a recently developed perspective—the resource-based view of the firm (RBV) model—argues for firm-specific influence on market performance (Barney, 1991; Wernerfelt, 1984). In the above example, RBV economists would credit the financial success of a local TV station to its non-imitable resources, such as reputation or quality, because the RBV suggests that some firms outperform others even under the same industry structure. So the fundamental question facing the two schools is: Which school better explains the reality of market performance?

To meet the solvency challenge for the online news industry and to respond to the theoretical debate of the two economic models, this study examines the relative importance of industry structure effects and firm behavior effects on market performance in the online news industry. Industry structure effects (abbreviated as “industry effects” hereafter) refer to industry attributes that produce certain level of performance, whereas firm behavior effects (abbreviated as “firm effects” hereafter) capture the unique firm resources that influence performance. Ultimately, this study attempts to bring out the complementary elements between the industrial organization and resource-based schools through an empirical examination of industry and firm effects in the online news industry.

THEORETICAL BACKGROUND

The present study uses two conceptual frameworks for explaining market performance: the industrial organization (IO) model and the resource-based view of the firm (RBV) model, because these two theoretical models compete for explanatory power on market performance. This section briefly introduces the inception and key concepts of each model, reviews previous studies, and states the objective of the present study.
**IO’s Industry Effects**

Edward S. Mason (1939) and his Harvard colleagues introduced the structure-conduct-performance approach, which provides an overview of the IO model. The model delineates a one-way causal relationship that says industry structure determines business conduct of firms, which in turn determines market performance (Bain, 1959; Scherer & Ross, 1990). However, the “new” industrial organization economists, such as the Schumpeterian and Chicago schools, disagree with the notion of the one-way causal relationship (Jacquemain, 1987; Mauri & Michaels, 1998; Wirth & Bloch, 1995) and view industry structure as dynamic and constantly evolving, and suggesting a feedback effect from firm to industry. Despite this view, IO economists generally agree that the external environment (i.e., industry structure) in which a firm chooses to compete, rather than the firm’s differential behavior, influences a firm’s market performance (McGahan & Porter, 1997a; Young, 2000). So, given the different directions of the link between industry structure and firm behavior, it still is plausible to consider industry structure as basic to key determinants in market performance analysis.

To decide to which structure a market or an industry belongs, the IO model uses various indicators, among which scholars usually emphasize (a) concentration, (b) product differentiation, (c) barriers to entry, and/or (d) vertical integration (Bain, 1959; Scherer & Ross, 1990; Schmalensee, 1989), in the sense that they are the industry attributes that most significantly and systematically influence market performance throughout all industries. As a rule of thumb, IO hypothesizes that the level of market performance rises with higher concentration, more product differentiation, added entry barriers, and/or additional vertical integration. For example, the first empirical studies to test IO’s concentration hypothesis (Mason, 1951; and Bain, 1956) investigated 42 industries and found that profit growth for the more concentrated industries was 11.8 percent compared to 7.5 percent for less-concentrated industries, i.e., profitability rises with concentration.

**RBV’s Firm Effects**

Beginning in the mid-1980s, strategic management scholars started investigating an inside-out, resource-based model that emphasizes the critical value of the internal resources of a firm and the firm’s capabilities to manage them. Wernerfelt (1984) coined the term “a resource-based view of the firm” (p. 171) and attempted to analyze firms from the resource side rather than from the product side. RBV scholars made two important assumptions: Firms within an industry may be heterogeneous, and resources may not be perfectly mobile across firms (Barney, 1991; Hunt & Morgan, 1995). First, heterogeneity suggests that no competing firms are identical in the resources they control. The assumption of firm heterogeneity is supported by some empirical data: e.g., Rumelt (1991) found that business units differ far more within—
than across—industries. Second, resource immobility implies that some firms’ resources are not commonly, easily, or readily exchanged on the market; under current U.S. patent law, e.g., patents last 20 years.

To distinguish resources from non-resources, Barney (1991) was the first scholar identified four specific attributes: value, rareness, inimitability, and non-substitutability. Based on Barney’s attributes, Miller and Shamsie (1995; 1996) developed a typology: (a) discrete property-based resources, (b) systematic property-based resources, (c) discrete knowledge-based resources, and (d) systematic knowledge-based resources. But RBV scholars are more interested in the impact those resources have in creating sustained competitive advantages (Barney, 1991) or superior return on capital (Amit & Schoemaker, 1993; Wernerfelt, 1984). They suppose that marshalling a set of systematic/discrete and property-/knowledge-based resources that are valuable, rare, inimitable, and/or non-substitutable may enable a firm to craft competitive strategies and then earn higher-than-normal returns. In other words, each firm amasses unique resources that provide the foundation for its strategy and leads to the differences in its performance.

**Objective of the Study**

Although the IO and RBV models focus on industry and firm effects, respectively, those effects have not received much empirical attention because of the difficulty in operationalizing the theoretical constructs of structural characteristics of an industry and behavioral characteristics of firms (Mauri & Michaels, 1998). Even studies that overcome such problems reported findings confirming the opposite perspectives. Schmalensee (1985) conducted perhaps the first empirical study in manufacturing industries, with results indicating dominance of industry effects (accounting for 20 percent of total variance) and almost no firm effects (less than 1 percent) on return on assets per business. On the other extreme, Chang and Singh (2000) found dominance of firm effects (32–50 percent) and some industry effects (13–16 percent) on market share per business among public manufacturing companies. McGahan and Porter (1997a) found that industry effects were stronger than firm effects on profitability in the wholesale and retail industry, but weaker in the manufacturing industry. They argued that inferring the economy of one industry from the results of another industry would be premature.

The two models try explaining variation in market performance, regarding performance as an end-result of industry effects or firm effects. However, the respective foci of IO and RBV models differ: RBV suggests firms’ internal attributes drive performance outcomes, in sharp contrast to IO, which argues that industry structure mainly explains market performance. This paper tries to combine insights from the IO and RBV models to analyze the online news industry despite the conflicting prior results. In short, market performance is appraised by financial
performance and relative performance; industry structure is identified through audience concentration, product differentiation, conglomerate ownership, and economies of scope; firm behavior was assessed from four types of resources: discrete property-based resources, systematic property-based resources, discrete knowledge-based resources, and systematic knowledge-based resources (see Figure 1). The reasons will be detailed below.

Concentration is an important indicator of industry structure and can be examined in various ways. In media industries, media firms participate in dual-product markets (i.e., the information market and the advertising market) (Picard, 1989), so audience and/or revenue concentration frequently are used (Albarran, 2002; Chan-Olmsted, 2005). This study tests only audience concentration because, first, revenue concentration is a valid but unfeasible measure because not all participating sites are willing to disclose their numbers; second, more and more media scholars are calling attention to treating audience as a determinant. For example, Ramstad (1997) argued that the main limitation of the IO model was that it ignored buyers directly, only examining them through the performance element. Therefore, audience concentration is tested.

Figure 1. Analytical Framework for a Market Performance Analysis
The degree of product differentiation refers to the extent to which buyers differentiate, distinguish, or have specific preferences among the competition outputs of the various sellers established in an industry (Bain, 1959). In technical terms, product differentiation measures the degree of market responsiveness, or elasticity, of the various outputs in the industry. Economists use elasticity to measure the relationship between price and quantity. In media industries, prices of subscription and advertising should be considered, owing to the aforementioned feature of media's dual-product markets. To evaluate product differentiation, the study calculates traffic elasticity for the Internet, the degree to which subscription and advertising prices change in response to Internet traffic change.

Barriers to entry, an important element of the IO model, may not be an appropriate measure for the online news industry because the Internet has no special ownership regulations and the Internet is a lowly concentrated market. The ease of entry includes no licensing requirements or high initial capital requirements and easy access to distribution channels. Chyi and Sylvie (1998) provided a concluding mark toward barriers to entry on the Internet: The regulatory and economic entry barriers to the electronic market appeared low in comparison with other media. Extending that argument, this study questions whether ownership of an established news site places economic barriers to entrants, given that online news often is not a free-standing industry but an offshoot of many offline media (e.g., newspapers or broadcasters).

It’s likely that conglomerate ownership provides protection for corporation-owned news sites from being whittled away by independent competitors. For example, Chang and Singh (2000) studied 709 public firms in the manufacturing sector from 1981 to 1989 and found that corporate parents actively influence the operations and the success of their subsidiaries. For example, big media corporations own the top three news sites in 2006: Yahoo News, MSNBC, and CNN (Project for Excellence in Journalism, 2007). The supposition is that the capacity built up by news sites’ parent companies may signal a barrier to potential entrants because the new entrants may face competitors’ overcapacity or price rivalry upon entering the online news market. In addition to corporate effects, recent scholarship also found a relationship between type of ownership and financial performance. Publicly owned media usually are required to have higher profits because public companies must react to the short-run expectation of the stock market. Empirically, Lacy and Blanchard (2003) found public newspapers had about 6 percent higher profit margins than private newspapers. For these reasons, conglomerate ownership is tested as an industry variable, which extraneously affects news sites' performance.

Vertical integration can be studied through economies of scope because mergers or joint ventures involve companies making different products under one corporate system. Although the conceptual definition
of scope economies’ effects depicts multi-product firms as more profitable, its operational definition is more difficult to capture in media firms. According to Dimmick and Albarran (2005), two reasons for the relative rarity of media research about economies of scope are: (a) data on actual production costs are proprietary and thus difficult to obtain; (b) input costs in media industries such as the cost of a story idea or a news story are hard to calculate. For these reasons, this study borrows Dimmick and Albarran’s (2005) “potential” measure of scope economies (PS), which multiplies the number of distinct content businesses in which a firm engages by the number of distribution systems it owns. PS scores range from 0 to any positive numbers, where the larger value represents the higher scope economies. For example, usatoday.com’s parent company, Gannett Co., owns three content businesses (i.e., newspapers, television, and the Internet) and one distribution system (i.e., printing), so Gannett’s PS score is 3, but the number makes sense only when comparison is made.

According to RBV scholars, discrete property-based resources are protected by laws, such as copyrights, patents, trademarks, and exclusive contracts. A copyright, registered by the Copyright Office of the Library of Congress, is a form of protection provided to the authors of original works of authorship, including literary, dramatic, musical, artistic, and certain other intellectual works, published and unpublished, whereas patents or trademarks are inventions, words, names, symbols, or devices issued by the United States Patent and Trademark Office. Disney, for example, has international copyrights to about 853 feature films, 671 cartoon shorts and animated features, and tens of thousands of television production (Chan-Olmsted, 2005). Sometimes firms require exclusive talent contracts, functioning as a retention factor, to prevent competitors from being able to benefit from their talents. Because law protects discrete property-based resources, this study examines whether more such inimitable resources (i.e., copyrights, patents, trademarks, and exclusive contracts) are able to create superior performance:

Systematic property-based resources can be created by first-mover advantages or complementarity of system parts. The first-mover advantage represents the advantage that accrues to the first sites to introduce news to Internet users. By being the first, companies can acquire superior brand recognition and customer loyalty and perfect their product or service. Complementarity of system parts means systematic resources should be used “not to substitute for existing assets but rather, to strengthen a system or competence that is already in place” (Capron & Hulland, 1999, p. 525). Empirically, Capron and Hulland conducted a survey of 253 acquisitions and their results showed that highly immobile resources such as brands and sales forces significantly influenced overall firm performance. Thus, this study tests if news sites with more systematic property-based resources (i.e., longer in launch time and use of an existing brand) are more likely to become profitable.
According to Miller and Shamsie (1996), discrete and systematic knowledge-based resources commonly take the form of technical, functional, and creative skills but differ in how independent they are of each other or whether they form part of a network or system. Because discrete knowledge-based resources usually involve specific technical, functional, and creative skills, Chan-Olmsted (2005) used a term “creative expertise” (p. 167) to signify them. For example, firms often compete or pursue talents in design, production, and marketing because firms can benefit from developing as many such knowledge resources as possible. When it comes to empirical research, Miller and Shamsie (1996) had used the number of skilled individuals and Academy Awards to represent film studios’ discrete knowledge-based resources. This study replicates the measures regarding discrete knowledge-based resources.

Given that systematic knowledge-based resources may contain integrative or coordinative skills required for multidisciplinary teamwork, they may be reflected (albeit imperfectly) by a firm’s teamwork in R&D or its ability to team, coordinate, or integrate multiple platforms. If some firms are good at integrating and coordinating technical, functional, and creative expertise, they will gain competitive advantage from the way skills from several domains complement each other in a team. For example, Menguc and Barker (2005) studied sales managers in 102 large Canadian organizations and found that collaborative skills directly related to sales performance. To empirically examine the collaborative teamwork, previous studies have used a firm’s integration ability (Liu & Chan-Olmsted, 2003) and the cost of long-term projects of a firm (Miller & Shamsie, 1996) as indicators. This study investigates news sites’ R&D intensity and convergence level.

A literature review of the microeconomic focus on market performance found that most empirical studies examine indicators of either financial performance (Dess & Robinson JR., 1984; Zou & Cavusgil, 2002) or business performance (Venkatraman & Ramanujam, 1986, 1987). Financial performance centers on the use of simple financial indicators assumed to reflect the fulfillment of the economic goals of a firm. This approach typically would examine indicators such as revenue growth, profitability (reflected by ratios such as profit margin, return on assets, return on investment, or return on equity), earnings per share, and so forth. Business performance, in addition to indicators of financial performance, emphasizes non-financial indicators such as market share, new product introduction, product quality, marketing effectiveness, and manufacturing value-added and technological efficiency. Thus, this study adopts the financial and business performance measures as multiple indicators of market performance.

Following McGahan and Porter’s (1997a) suggestion that influence of industry and firm effects on market performance is industry-specific and must be tested, this study asks 3 research questions:
RQ1: How much does industry structure relate to market performance in the online news industry?

RQ2: How much does firm behavior relate to market performance in the online news industry?

RQ3: What is the relative importance of industry effects and firm effects on market performance in the online news industry?

METHODS

This study conducted a survey and secondary data analysis. Specifically, the study (a) surveyed managers of online news sites using a Web-based questionnaire, (b) collected news sites’ traffic data from a third-party company, Nielsen’s NetRatings, and (c) borrowed Nielsen Media Research’s DMA index for market-size rankings. The multi-method approach of collecting data is detailed below.

The Survey

Survey data were collected with a sample of U.S. news sites cross-listed in the 2006 and 2007 editions of *Bacon’s Internet Media Directory* with at least 1,000 unique users per month. Several factors suggested using a limited range of news sites. First, no complete list existed given that the number of news sites changed daily, so the study used Bacon's latest Internet media directories because they provided Web managers’ contact information and Nielsen’s NetRatings data. Second, because news sites with monthly traffic of less than 1,000 usually are less likely to generate substantial revenue, including these sites would make dependent variables constant. Third, several variables such as traffic growth and traffic elasticity require data from two points in time; after the screening process, only 720 news sites fit the population description, so the study did not apply a random sampling procedure.

As the average response rate of business surveys is 21 percent (Dillman, 2007), a mix-mode survey, including a pre-notice, a Web-based questionnaire, e-mail reminders, and telephone reminders, launched in 2007 to increase response rate and aid coverage for the sample. Of the 720 receiving the questionnaire, 2081 completed the survey and 119 surveys bounced back because of undeliverable addresses or company firewalls. Given that the accepted practice is to omit undeliverable questionnaires (Tripathi, 2001), the final response rate is 34.6 (208 of 601) percent. Comparing the respondents and non-respondents helped to assess potential non-response bias, as well examining the early and late

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1 The responding sites include 1 Internet-only site, 5 news service sites, 6 national sites, 70 local broadcast sites, and 126 local newspaper sites.
respondents (Armstrong & Overton, 1977; Zou & Cavusgil, 2002). The former comparison revealed no significant difference in respondents’ media affiliations ($X^2 = 2.007$, d.f. = 4, $p > .05$). In the latter comparison, the study compared the news sites responding within one week (before the telephone reminder) with those responding in the later three weeks in terms of all variables. Using t-tests, the study found no significant difference at the .05 level except for the earlier respondents having more discrete property-based resources than later respondents ($t=2.114$, $p<.05$).

**Secondary Data Analysis**

Secondary data were collected from Nielsen’s NetRatings and Nielsen Media Research’s DMA index. First, discovering accurate and up-to-date traffic data remains debatable, but third-party metrics companies’ data still are most acceptable. ComScore’s Media Metrix and Nielsen’s NetRatings, specializing in audience traffic and providing behavioral statistics of those who access the Internet, are industry leaders. Since access to those data is costly, this study used only NetRatings’ unique users per month, which are indirectly provided by *Bacon’s Internet Media Directory*, as a compromise between valid-but-limited and invalid-but-accessible information. Second, since MSA (metropolitan statistical area), DMA (designated market area), and ADI (area of dominant influence) all define boundaries for various media markets, finding the greatest common factor for all news sites of different affiliations (i.e., newspapers, radio, television, etc.) suggested choosing DMA as an index to identify each site’s market size regardless of media affiliations.

**Measures**

Measures consisted of newly generated items and items previously used in the literature. For market performance measures, the study operationalized it through financial performance (Dess & Robinson Jr., 1984; Zou & Cavusgil, 2002) and relative performance (Venkatraman & Ramanujam, 1986, 1987). The study measured financial performance by the percentage of revenue growth and profitability. Note that revenue growth represented annual growth rate and that the study defined profitability as profit margin over a fiscal year (Equation 1 & 2). Respondents were asked, “Compared to fiscal 2005, your site’s 2006 revenue was: (more than 50% higher, 41-50% higher, 31-40% higher, and so on)” and “What was your site’s percentage of profitability in fiscal 2006? (more than 50%, 41-50%, 31-40%, and so on)” The study also asked questions of relative performance, with respondents expected to provide perceptual assessments relative to their competitors about revenue growth, profitability, market share, and content quality on a 5-point Likert scale.
Revenue Growth = \frac{\text{Revenue} - \text{Revenue (yr ago)}}{\text{Revenue (yr ago)}} * 100 \quad (1)

Profitability = \frac{\text{Revenue} - \text{Expenses}}{\text{Revenue}} * 100 \quad (2)

To answer RQ1, the study operationalized industry structure through audience concentration, product differentiation, conglomerate ownership, and economies of scope. First, the study measured audience concentration by traffic growth and market size. The study used traffic growth instead of traffic because national sites usually have more traffic than local sites. So traffic growth in percentage was considered a better measure of audience concentration. The study calculated traffic growth by the numbers of unique users per month from Nielsen’s NetRatings (Equation 3). Another audience-related measure was market size because market size is related closely to audience size. The market size was identified based on Nielsen Media Research’s DMA index.

Traffic Growth = \frac{\text{Unique Users} - \text{Unique Users (yr ago)}}{\text{Unique Users (yr ago)}} * 100 \quad (3)

Second, product differentiation was measured by traffic elasticity, i.e., the degree to which subscription and advertising prices change in response to Internet traffic change (Equation 4). Since traffic and price are positively related, a differentiated site has an absolute ratio greater than 1 and an undifferentiated site has a ratio between 0 and 1. To assess traffic elasticity, three numbers were collected: subscription fees, advertising rates, and traffic data from two points in time. Respondents were asked, “About how much was your annual subscription fee?” and “About how much was your advertising rate?” in fiscal 2005 and 2006. Note that the advertising rates were collected through the “average banner CPM” and/or the “monthly banner rate.” Again, traffic data of 2005 and 2006 were collected from Nielsen’s NetRatings.

Traffic Elasticity = \frac{\% \Delta (\text{subscription rate + Advertising rate})}{\% \Delta \text{traffic}} * 100 \quad (4)

Where

\begin{align*}
| \text{traffic elasticity} | & > 1 \text{ as differentiated} \\
| \text{traffic elasticity} | & \leq 1 \text{ as undifferentiated}
\end{align*}
Third, conglomerate ownership was measured by two dummy variables, corporate parent and public ownership. The effects of the corporate parent generally constitute the difference in the average of returns between multiple-business firms and single-business firms (Bowman & Helfat, 2001; Chang & Singh, 2000). So categorizing the sample into news sites with or without parent companies should be appropriate. In addition, recent scholarship also has found a relationship between type of ownership and financial performance (Lacy & Blanchard, 2003). The survey also asked the public ownership question, “Which type of ownership best describes your company?”

Fourth, this study used Dimmick and Albarran’s (2005) “potential” measure of scope economies (PS) to measure scope economies, multiplying the number of distinct content businesses (N) by the number of distribution systems (M) (Equation 5). Thus, this study asked respondent, “Does your company or parent company own any of the following content businesses? (newspaper publishing, magazine publishing, radio programming, television programming, cable programming, Internet publishing, and others)” and “Does your company or parent company own any of the following distribution systems? (printing press, magazine mailing house, radio broadcasting, television broadcasting, cable service, satellite service, and others)” To obtain a PS score, the number of content businesses was multiplied by the number of distribution systems for each news site.

\[ PS = N \times M \] (5)

To answer RQ2, this study operationalized firm behavior through discrete/systematic and property/knowledge-based resources. Property-based resources are physical capital (Williamson, 1975) protected by property rights, such as contracts, deeds of ownership, or patents; knowledge-based resources are intangible know-how and skills protected by knowledge barriers (Amit & Schoemaker, 1993). Discrete resources stand alone and have value independent of their organizational contexts; systematic resources have value because their components are part of an organization (Miller & Shamsie, 1996). However, media industry studies rarely study the four types of resources and therefore any attempt to do so is exploratory in nature.

In accord with the above definitions, discrete property-based resources (legal protection) were measured by the possession of copyrights, patents, trademarks, and exclusive contracts. Respondents were asked, “Has your site registered or filed the following kinds of intellectual property protection? (copyrights, patents, trademarks)” and “Are there any employees of your site under contracts?” Second, systematic property-based resources (historical endowments) were measured by the age of a site and the use of an existing brand. Respondents were asked, “In which year and month did your Web site launch?” and “How is your site’s domain name similar to an existing
brand?" The age question attempts to examine a “first-mover advantage”; the brand question tests whether a news site takes advantage of an established brand image or reputation. Third, discrete knowledge-based resources (creative expertise) were measured by the size of staff that worked for a site and the number of awards won by a site. Respondents were asked, “Approximately how many full-time employees work mainly for your site?” and “How many awards has your site won in the last three years?” Lastly, systematic knowledge-based resources (coordinative skills or teamwork) were measured by the degree of convergence and R&D intensity. The convergence question asked, “Some sites and their affiliations converge on one operation; others operate independently. How about your site? (converged, in transition toward convergence, in transition toward independence, and independent)” The R&D intensity question asked, “How much research and development does your site undertake? (a lot, some, not much, and none)”

Statistics

Since this study used a non-probability sample, no inferential statistics—assuming that the representativeness of samples selected through conventional probability sampling procedures—were used. Instead of significance tests, regression coefficients (i.e., standardized beta in this study) were used to describe direction and strength of industry and firm effects on market performance because comparisons among variables within a model and between models were attempted. The research questions were answered using hierarchical regression. Data were tested for the assumptions of regression. The study compared a baseline regression model with a revised regression model incorporating variables with transformations of the assumptions and omissions of multivariate outliers and reported the revised models only if R-square improved 2 percent more than the baseline model.2 A note at the end of each table specifies which model was used. In terms of individual relationships, the independent variable with the largest beta coefficient value (positive or negative) stands for the strongest explanatory variable of the dependents in the specified model.

RESULTS

Industry Effects on Performance

To answer RQ1, the $R^2$ change indicates that industry effects could uniquely explain 22 percent of variance in revenue growth, 13 percent in profitability, and 23 percent in relative performance after firm effects were controlled (see Table 1). In terms of individual relationships after

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2 There is no written rule for accepting the revised model, so the practice in this study is by convention.
Table 1. Hierarchical Regressions Using Performance Measures as Dependent Variables Controlling for Firm Effects

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Revenue Growth</th>
<th>Profitability</th>
<th>Rel. Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta Block 1</td>
<td>Beta Block 2</td>
<td>Beta Block 1</td>
</tr>
<tr>
<td>Discrete properties</td>
<td>.212</td>
<td>.133</td>
<td>-.033</td>
</tr>
<tr>
<td>Age of a site</td>
<td>-.187</td>
<td>-.073</td>
<td>.261</td>
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<tr>
<td>Brand name use</td>
<td>.274</td>
<td>.260</td>
<td>.067</td>
</tr>
<tr>
<td>Staff size</td>
<td>-.033</td>
<td>-.210</td>
<td>.090</td>
</tr>
<tr>
<td>Convergence</td>
<td>-.044</td>
<td>-.050</td>
<td>.050</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>.016</td>
<td>.090</td>
<td>-.067</td>
</tr>
<tr>
<td>Traffic growth</td>
<td>.267</td>
<td>-.175</td>
<td>-.083</td>
</tr>
<tr>
<td>Market size</td>
<td>.288</td>
<td>.071</td>
<td>-.337</td>
</tr>
<tr>
<td>Traffic elasticity</td>
<td>-.020</td>
<td>.083</td>
<td>-.194</td>
</tr>
<tr>
<td>Public ownership</td>
<td>.381</td>
<td>.234</td>
<td>.271</td>
</tr>
<tr>
<td>&quot;Corporate parent&quot;</td>
<td>-.207</td>
<td>.025</td>
<td>.034</td>
</tr>
<tr>
<td>Scope economies</td>
<td>.068</td>
<td>.120</td>
<td>.042</td>
</tr>
</tbody>
</table>

\(^a\) There is a violation of homogeneity between corporate parent and revenue growth.

firm effects were controlled, public ownership was the strongest and positive explanatory variable of revenue growth and profitability: Publicly owned news sites had higher revenue growth and profitability than privately owned sites. Market size was the strongest explanatory variable of relative performance; however, participating in a larger market actually decreased a news site’s relative performance.

**Firm Effects on Performance**

To answer RQ2, the R² change shows that firm effects accounted for 12 percent of the variance in revenue growth, 6 percent in profitability, and 11 percent in relative performance after industry effects were controlled (see Table 2). In terms of individual relationships after industry effects were controlled, brand name use was the strongest explanatory variable of revenue growth. A site’s age was strongest in explaining profitability, indicating that an older site was more likely to make higher profits than a younger site. With regard to relative performance, Table 2 shows the brand name use juxtaposes with the staff size as the strongest explanatory variables because they have the same coefficient values: A news site using an existing brand name or hiring more people for the Web was more likely to consider itself competitive among rivals.
Table 2. Hierarchical Regressions Using Performance Measures as Dependent Variables Controlling for Industry Effects

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Revenue Growth</th>
<th>Profitability</th>
<th>Rel. Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block 1</td>
<td>Block 2</td>
<td>Block 1</td>
</tr>
<tr>
<td>Traffic growth</td>
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<td>Market size</td>
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<td>Traffic elasticity</td>
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<td>Public ownership</td>
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<tr>
<td>Corporate parent</td>
<td>-.120</td>
<td>-.207</td>
<td>.023</td>
</tr>
<tr>
<td>Scope economies</td>
<td>.037</td>
<td>.068</td>
<td>.109</td>
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<tr>
<td>Discrete properties</td>
<td>.133</td>
<td>.039</td>
<td>-.079</td>
</tr>
<tr>
<td>Age of a site</td>
<td>-.073</td>
<td>.236</td>
<td>.139</td>
</tr>
<tr>
<td>Brand name use</td>
<td></td>
<td>.260</td>
<td>.074</td>
</tr>
<tr>
<td>Staff size</td>
<td>-.210</td>
<td>.012</td>
<td>.229</td>
</tr>
<tr>
<td>Convergence</td>
<td>-.050</td>
<td>-.019</td>
<td>-.031</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>-.090</td>
<td>-.111</td>
<td>.190</td>
</tr>
<tr>
<td>R²</td>
<td>.268</td>
<td>.387</td>
<td>.151</td>
</tr>
<tr>
<td>R² change</td>
<td>.119</td>
<td>.060</td>
<td></td>
</tr>
</tbody>
</table>

* The revised model is presented.

Relative Effects on Performance

To answer RQ3, comparing the relative importance of industry effects and firm effects on the three performance measures, Figure 1 summarizes results from the previous 6 hierarchical regressions. The arrows represent unique contributions made by industry and firm effects on performance. Industry variables clearly were more influential than firm variables across the three performance measures. Compared to the explanatory power exerted by firm variables, industry variables explained 10 percentage points more of variance in revenue growth, 7 percentage points more in profitability, and 12 percentage points more in relative performance. Together, industry effects and firm effects were able to explain 39 percent of revenue growth, 21 percent of profitability, and 37 to 38 percent of relative performance (see total R² in Table 1&2). Also, industry and firm effects were better at explaining revenue growth and relative performance than in explaining profitability.

CONCLUSIONS

Searching for an adequate theoretical framework for a market performance analysis, many scholars recognize the IO’s structure-conduct-performance model (e.g., Bain, 1959; Mason, 1939; Scherer & Ross, 1990). However, alternative perspectives (e.g., the RBV model) emerged to emphasize the influence of a firm’s heterogeneous behavior
on performance (e.g., Barney, 1991; Wernerfelt, 1984). Since many recent studies found firm effects stronger than industry effects on market performance (e.g., Chang & Singh, 2000; Mauri & Michaels, 1998; McGahan & Porter, 1997a; Rumelt, 1991), some scholars wonder whether industry structure still matters (e.g., McGahan & Porter, 1997a; Rumelt, 1991) or whether it ever matters in media industries (Fu, 2003; Wirth & Bloch, 1995; Young, 2000).

Our findings seem to pronounce industry structure variables over those of firm behavior. When considering the relative importance of both classes of effects in explaining market performance, a dominance of industry variables seems to emerge. IO's industry variables uniquely explained about twice as much variance in revenue growth, profitability, and relative performance than did RBV's firm variables in the online news industry. Being in line with empirical results provided by Schmalenesee (1985) and Wernerfelt and Montagomery (1988), this finding might be taken to generalize similar conclusions drawn from different contexts. However, the ultimate goal of the study is not to find which model is better, but rather to create a theoretical framework that explains the most variance. Our findings support the complementarities between IO and RBV: variables from both models were able to explain 21 to 39 percent of variance in market performance among the 208 news sites. To this end, combining the IO and the RBV models is an ideal analytical tool to understand online news' market performance.

From a business standpoint, these findings have pragmatic implications, which may help the online news industry meet the solvency challenge. The results indicate that superior market performance depends on at least five factors: market size, public ownership, age of a site, brand name use, and staff size. Thus, current competitors and potential entrants of online news should know that ideal strategies include (a) participating in a smaller media market because smaller markets have fewer competitors and thus less uncertainty; (b) creating
an Initial Public Offering for the company because stockholders’ pressure, in a good way, makes businesses of the company more efficient; (c) maintaining operations as long as the revenue earned from the business exceeds incurred variable costs because older sites knew how to market profits on the Web better than younger sites; (d) mulling a URL name to use an existing brand because familiar media brands more easily draw advertisers; (e) limiting reduction of online staff size because staff size was the strongest explanatory variable of relative performance among rivals: employees remain a company’s best asset.

Taken another way, most U.S. newspapers and their Web sites can continue to hope for eventual financial success. Most newspapers are largely publicly owned (more than three-fifths are owned by the largest groups (Pew Research Center, 2006a) and in smaller markets (typical U.S. newspapers, i.e., about 85 percent, have less than 50,000 circulation (Newspaper Association of America, 2003), and thus nicely situated – if one is to believe this study’s findings. In what could be considered supportive of both theories studied here, a recent report (Borrell Associates, 2009) said newspapers were beginning to become more competitive against pure-play Internet companies with no legacy media connections and earned more than all other local online companies combined. The report also cited the continuing growth (up more than 30 percent from 2008) of newspapers’ “Internet-only” sales force as an important asset in their increasing competitiveness.

A number of new research considerations arise from this study’s limitations. First, the definitions of industry and firm are subjective in nature. For example, Wernerfelt and Montgomery (1988) used 2-digit SIC to define industries; Chang and Singh (2000) studied industries using 3-digit and 4-digit SIC. Also, Rumelt (1991) studied firms at the business unit level; McGahan and Porter (1997b) studied firms at the business segment level. Since the current study defined firm effects as effects generated only within a business unit (i.e., a news site), effects beyond this level were characterized as industry effects. Future studies might want to examine industry and/or firm effects from different units of analysis.

Second, the industrial organization model and the resource-based view of the firm model are only two of many, varied economic theories – e.g., transaction cost, innovation, entrepreneurship, leadership, etc. – trying to explain market performance (not to mention models deducted from observational results using an exploratory approach). Future research may search for other determinants of market performance.

Third, since the non-probability sample in this study resulted from a small sampling frame (i.e., 720 news sites cross-listed in the 2006 and 2007 editions of Bacon’s Internet Media Directory with at least 1,000 unique users per month), no inferential statistics were used. Despite the limitation, the sample is representative of online news sites in U.S. because it included all national sites and major local print and broadcast sites; and an assessment of non-response bias showed few statistical
differences between respondents and non-respondents and between earlier respondents and later respondents.

Finally, the study generated results from a cross-sectional survey and short-term secondary data. In the areas of economics or management, longitudinal research is the norm. For example, Rumelt (1991) studied the U.S. manufacturing industries from 1974 to 1977; McGahan and Porter (1997a) examined all U.S. industries from 1981-1994; Chang and Sigh (2000) studies the U.S. manufacturing industries in 1981, 1983, 1985, 1987, and 1989. A longitudinal data coverage, extending to date, would allow us to examine online news trends in the patterns of industry and firm impacts on performance under the ever-changing Internet environment.

Scholars seeking to identify additional determinants of market performance in the online news industry should note our experience that combining the IO model and the RBV model is the ideal tool. In short, online news markets are more complex than many site owners may have earlier believed—and continued survival will stem from decisions considering the interplay of industry and firm factors.

REFERENCES


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