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Andrew Zacharakis
Babson College

Alisa Boguslavskaya
Indiana University, abogusla@indiana.edu

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SIGNALING LEGITIMACY:
AN ANALYSIS OF MEDIA FOR SUCCESSFUL AND FAILING NEW VENTURES

Andrew Zacharakis, Babson College, USA
Alisa Boguslavskaya, Indiana University, USA

Abstract

New ventures strive for institutional legitimacy. Signaling milestones helps these ventures achieve legitimacy as well as reduce information asymmetry with potential partners, such as investors. The current study creates a matched sample of successful and failed venture capital backed companies. The research examines media citations, both company directed (such as press releases) and independent, to see whether successful ventures differ from failed ones in the pattern of media. The results find that successful ventures have more media citations, more headlines mentioning the company, more unique publications providing them coverage, and higher growth rates in media attention than do failed ventures. Moreover, successful companies put out more company directed media than do failed ventures. Finally, while the tone of the media is predominantly positive for both successful and failed companies, successful ventures actually have a higher percentage of negative tone publications than do failed ventures. The implication of this study for entrepreneurs is that they need to actively signal their successes to create awareness and improve their institutional legitimacy. For investors, studying media citations can be another useful, low-cost tool in assessing a company’s potential.

Introduction

New ventures suffer from information asymmetry (Shane & Cable, 2002). A primary reason for this is that due to their age, size, influence and closely-held financial structure, there is a dearth of publicly available information about them. This is problematic because to grow and sustain success, new ventures need support from stakeholders, particularly investors. As a result, information asymmetry contributes to the liability of newness (Stinchcombe, 1965) from which new ventures suffer. One means of overcoming liability of newness issues is for the entrepreneur, and other company insiders, to communicate pertinent information about the firm or somehow signal the quality of the venture (Busenitz, Fiet & Moesel, 2005; Prasad, Bruton & Vozikis, 2000).

Companies may signal through a variety of factors, many of which have been explored by academic literature (Connelly, et al., 2011). For instance, Zhang and Wiersema (2009) argue that the strength of a firm’s financial statements signals the quality of the firm to potential investors. Within the entrepreneurship realm, new ventures also signal potential by the quality of their board of directors (Certo, 2003), top management team (Lester, et al., 2006), venture capitalists and angels (Elitzur & Gavius, 2003), amongst others.
For this study, our focus will be on a particular type of signaling – via the media (Deephouse, 2000). Media has the power to build a reputation and thereby becomes a propagator of legitimacy (Deephouse, 2000; Pollack and Rindova, 2003). Media drives the salience of companies into the minds of readers and thereby influences the reputation of those companies (Carroll & McCombs, 2003; Carter, 2006). While journalistic press, as a hypothetically less biased “fourth estate,” has a potentially greater chance of reducing a new venture’s liability of newness, self-initiated press also has significant benefits. Carter (2006) suggests that companies engage in impression management to influence their reputation, especially when the company is dependent upon various stakeholders for success (Leary & Kowalski, 1990). In particular, companies employ press releases, press conferences and advertisements to communicate with various stakeholders (Carter, 2006). Two outlets, PR Newswire and Business Wire, are merely vessels that companies can use to communicate pertinent developments regarding their organizations through press releases (Carter, 2006). We would expect that information from these mediums to be overwhelming positive as companies have perfect control of the content within them in an attempt to signal quality. The added benefit of press wires is that other media outlets often pick up stories directly from them and either use them completely unchanged in their own publications or as the basis for deeper investigation of the subject company. As such, companies need to utilize and manage all media to enhance the perceived potential of their organizations (Carter, 2006).

Understanding the patterns of media attention may indicate whether a company is gaining legitimacy, and thereby reducing its liability of newness. In this study, we explore signaling behavior of a matched sample of failed and successful ventures funded by leading venture capital firms. Studying a set of companies with investors ensures that all sample ventures have similar stakeholders and are more equally motivated to signal outsiders (customers, future investors, potential acquirers) through their media activities.

This paper makes several contributions. First, understanding the nature of media attention may identify not only a source of company legitimacy but also predict a new venture’s likelihood to succeed or fail. While there have been numerous studies looking at financial indicators of venture potential (e.g., Laitinen, 1992), media attention may be seen as a non-financial indicator. Considering that new ventures are often privately held, meaning their financials are not public, and that these companies often have shorter operating histories, their financial statements, if available, may not be as reliable as those of more established and/or public firms (Beaver, McNichols & Rhie, 2005). Therefore, investigating and understanding non-financial predictors, such as media attention, may give entrepreneurs and other stakeholders a way of better managing the firm or relationships to it. Specifically, investors may use media information, especially the pattern of information, as another data point in assessing the quality and likely return of a venture investment. Second, understanding the pattern of when and how press releases are used and how that correlates with success may help ventures better manage the PR process and its timing. Third, this paper answers the call from Pollock, Rindova and Maggitti (2008) to investigate the value of media coverage on young firms.

The paper proceeds as follows. First, we use signaling theory and the closely related agenda-setting theory to develop hypotheses. Next, we describe the sample and methods for analysis. Finally, we present and discuss the results and suggest directions for future research.
Signaling Theory

Signaling theory proposes that organizations transmit information that portrays them in a positive light (Connelly, et al., 2011). Carter (2006) argues that this is a form of impression management, and the pattern of press releases, for example, is driven by the interaction of the venture, its target stakeholders and the venture’s current situation. The main goal driving signaling activities is to reduce information asymmetry between the company and the intended target(s) (Spence, 2002). In an effort to convey quality and enhance legitimacy, companies are motivated to signal certain attributes to outsiders in an attempt to secure cooperation. The effectiveness of the signal is a function of several factors, including signal strength, quality and frequency (Connelly, et al., 2011). In the case that we are examining, entrepreneurs and the VCs that have already funded them (insiders) want to inform outsiders of progress. The enhanced awareness provided by these signals aims to facilitate future cooperation, such as being acquired or going public.

Media is a particularly effective means by which to signal another party. Press releases, on one hand, are controlled and biased communication conveying solely the firm’s perspective – a fact that may lessen their influence. News media, on the other hand, can be especially effective in building reputation because it is authored by what is considered an unbiased third party that ideally vets and verifies the information it conveys (Deephouse, 2000). As such, this signal may be more credible than one that is communicated directly from the company to the target. Furthermore, using the media as a signaling device has positive spillover effects in that the company may be reaching not only the intended target but also other potential influencers. For example, while entrepreneurs are signaling quality to potential investors via the media, customers are also receiving the signal, which ideally leads to sales and increased revenue, which in turns provides further content for future media releases. Since the factors that are important to potential investors include new customers and revenues, product introductions, financing, and key hires, amongst others, media attention, therefore, may kick off a virtuous cycle that ultimately contributes to the company’s success.

Increased volume and diversity of media attention creates an increased amount of signals, reducing perceived risk and thereby reducing the liability of newness. Heath and Tversky (1991) argue that the volume of available information reduces perceived riskiness. In order to gain legitimacy, organizations therefore need to increase their awareness in the public forum. It is especially pertinent for companies to communicate their successes. From an Agenda Setting perspective, media sends cues to its audience. The more articles written about a company, the more salient it will be in the mind of the readers (Carroll & McCombs, 2003). Pollock and Rindova (2003) suggest that repeated exposure increases familiarity and favorability of the company. Overall, ultimately successful companies are those that focus on name recognition, positive association and raising awareness of more developments (McDougall, Covin, Robinson & Herron, 2006). A succeeding venture is likely to meet an increasing number of relevant milestones, or those with increasing importance, which may produce a compounding effect of media attention. On the other hand, if an organization is struggling, it may not wish for that information to be made public (Kirmani & Rao, 2000). This is due to the fact that while such negative information may increase the salience of the organization, it also delegitimizes the company. Thus, succeeding companies have more incentives to publicize and cooperate with media to get their story out while failing companies are incentivized to stay below the radar (Kirmani & Rao, 2000).

Hypothesis 1a: Succeeding companies will have, on average, more articles written about them in a given period than their failing counterparts.
**Hypothesis 1b:** Succeeding companies will have, on average, higher growth rates in media attention, period-over-period, than their failing counterparts.

The widespread use of a new venture’s name, in terms of both the variety of publications in which it appears and the number of times it appears in each, serves to reinforce its name in the mind of the audience and thereby becoming a more effective signal. Carter (2006) notes that headlines identifying a company by name are particularly salient to targeted stakeholders. It is therefore reasonable that the more times a company is mentioned within a given article and the more outlets it appears in, the more it signals its legitimacy. Therefore, companies that receive more press from more publications with higher salience within them, as measured by headlines and mentions within an article, are more likely to be successful.

**Hypothesis 1c:** The number of articles written that feature a succeeding company, as demonstrated by the fact that the title contains that company’s name, will be higher than the number featuring failing companies.

**Hypothesis 1d:** The number of times a succeeding company is mentioned in an article will be higher than the number of times a failing company is mentioned in an article.

**Hypothesis 1e:** The number of unique publications that carry articles mentioning a succeeding company will be higher than the number of unique publications that carry articles about a failing company.

**Hypothesis 1f:** Having more media articles, headlines, mentions, and unique publications, signals success.

In seeking legitimacy, companies will try to manage the frequency of company controlled media, or what Carter (2006) calls “media directed reputational management activities,” or press releases. Putting out more self-initiated media accomplishes two goals. First, press releases allow the company to inform the public about its achievements and developments. If the company is succeeding, it will release more stories about achieving important milestones. The enhanced frequency makes those companies more salient to the public (Carroll & McCombs, 2003). Second, because of the propagation and re-use of press releases by the mainstream media, it is an efficient method of exponentially increasing the reach of the company’s message. Cameron, Shallot and Curtin (1997) estimate that press releases influence anywhere from 25 to 80 percent of all new content. For example, Blyskal and Blyskal (1985) found that 50 percent of the business news in the Wall Street Journal was driven by press releases. It is to be expected that companies that have good news to report will wish to take advantage of this propagation to maximize their potential for conveying success. Thus, a firm that is succeeding at meeting key milestones will release more company-controlled stories than a failing one, which would prefer to avoid drawing attention to its plight.

**Hypothesis 2a:** Succeeding companies will put forth more company driven media, as evidenced by the number of articles in PR Newswire, BusinessWire and their affiliates, than failing companies.

While managing company-controlled media happens throughout the life of the organization, there are likely times when it may serve as a more effective and pertinent signal. In the lifecycle of a
VC-backed company, ultimate success is defined by a high-return liquidity event, ideally an initial public offering, but more commonly an acquisition. Company insiders, both the entrepreneurs and the VCs, are therefore tempted to “window dress” when positioning a company for a potential exit. Window dressing is the concentrated effort by insiders to portray the venture in the best possible light by releasing information on favorable events, such as developing a working prototype or achieving a certain level of sales or adoption (Cornelli & Yosha, 2003). Cornelli and Yosha (2003) assert that entrepreneurs can manipulate signals so that good news is more likely to be noticed. Press releases and other company controlled media are such avenues to promote and present the company in the best possible manner prior to a major event. Thus, we expect press releases to increase in frequency prior to a liquidity event.

**Hypothesis 2b**: As a company positions itself for exit, its frequency of press releases will increase.

How the media frames an article determines what kind of signal it sends about the firm to the audience and thus how it influences the audience’s perception of the company. Framing a company in a positive or negative tone creates an impression with the audience, some of which may be potential partners, that either fosters or hinders legitimacy (Pollock & Rindova, 2003). Deephouse (2000) notes that media influences the overall favorability of a company. If an article generally conveys positive information, it will have a positive reputational effect and thereby increase the legitimacy of the company. If the article is negative in tone, it will have a negative impact on reputation. Fombrun and Shanley (1990) find that firms with positive media coverage had higher rankings in Fortune magazine’s annual ranking of the most admired companies.

**Hypothesis 3**: Succeeding companies will have more positive press than failing companies.

**Method**

To test our hypotheses, we gathered a matched data set of media citations on 60 venture backed companies from three premier venture firms. In the sample set, 30 ventures were those that ultimately succeeded, meaning they exited at 2 times or more of the invested capital, and 30 ventures that failed, meaning they either did not exit within 8 years of the initial VC financing round (all the successful ventures studied did so within that time frame) or failed to generate an exit of at least 2 times invested capital. Using exit (IPO or acquisition) as a measure of success is common in VC literature because actual return information is private (Bottazzi, Da Rin, & Hellman, 2008; Gompers, Kovner, Lerner & Scharfstein, 2008). To minimize market effects, all the companies received their initial capital in or after the year 1999.

A company’s media coverage for purposes of this study is defined as the number of unique articles in which the new venture’s name appears, either in the title or the main text or both, during the time in which the matched VC held its investment. The articles were pulled from the Factiva news database, which aggregates over 28,500 sources, such as newspapers, magazines, radio transcripts and 600 continuously updated news wires.

A complete list of all media mentions for the entire study period was first downloaded and the following information pulled out: the title, date of publication, source, and word count. Subsequently, this raw data was further analyzed to isolate the week, month and year of publication, whether the title contains the subject company’s name, and the number of days between media coverage. Third, each media mention was individually inspected for relevance, tone and the
number of times the subject company was mentioned within it. Fourth, the percentage of company name mentions as a percentage of word count was calculated. Fifth, totals and averages were taken of every metric. Since the time frames of media mentions varied substantially from company to company, depending on investment date and eventual exit date, if applicable, each metric that could be distorted by time was controlled for by calculating it on a per-month basis. Lastly, the number of articles per week, month and year were tabulated and the growth rates for each period calculated. A list of unique media sources for each subject company was also compiled and the number of articles sourced from each was tabulated. In addition, press releases, meaning those articles that were company generated and published in PR Newswire or Business Wire, were analyzed separately of independent media cites.

Hypothesis 1 focuses on how independent media citations signal a company’s strength, in terms of metrics around the number of articles about a company (Carter, 2006), the growth rate of mentions, whether the company’s name appeared in the title (Carter, 2006), and the proportional number of mentions of the company within the article. For this analysis, success and failure were each categorically defined with a 1 or 0, respectively, and a binomial regression model utilizing each metric individually and all metrics together, as independent variables, was run with success as the dependent variable. The variables that were significant (at a 0.05 significance level) were noted. A best subset analysis was run and a modified regression model, chosen based on the highest Pearson Chi-Square p-value and best predictability for the smallest number of independent variables. Additionally, a correlation between all variables was run to test for collinearity.

Hypothesis 2 examines the metrics around PR citations alone. The independent variables were the number of releases, frequency, and topic of the release. These variables were also used to calculate the percentage of total media that was company initiated. Binomial regression was subsequently run on the monthly statistic as the independent variable, with success being the categorical dependent variable. A 2-sample T test was run to check for significance in distribution between failed and successful companies. Lastly, for companies that have exited, we looked at the pattern of monthly press releases in the periods leading to exit to note if there tended to be a ramp-up in company-issued statements.

Hypothesis 3 examines tone of the citation. Tone was content analyzed following the lead of Fombrun & Shanley (1990) as positive, negative or neutral regarding the type of signal being put forth. For instance, an article would be judged favorable if it talked about new customers, new products, new key hires and so on. An article would be judged as a negative signal if it talked about lagging sales, loss of key employees, criticism of products and so on. Per the standard in academic research on assessing tone, we used the Janis-Fadner (1965) coefficient of imbalance, which calculates and measures the relative proportion of positive, negative and neutral media articles for each firm (Carter, 2006; Deephouse, 2000; Pollock & Rindova, 2003). The Janis-Fadner measure controls for the overall volume of articles. Each article is given equal weight, consistent with Deephouse (2000). The measure for media favorability is represented by the following Coefficient of Imbalance equation:

\[
\frac{P^2 - PN}{(P + N)^2} \text{ if } P > N \\
\text{ or } \\
\frac{PN - N^2}{(P + N)^2} \text{ if } P < N \text{ or } P = N
\]
where \( P \) is the number of positive and/or neutral media citations in a given year and \( N \) is number of negative media citations in a given year. In our content analysis, \( P > N \); thus, we used the first equation.

**Results**

Hypotheses 1a-e examine whether successful ventures have more articles (both PR and independent), a higher growth rate in mentions, more headlines, more mentions within an article and more unique publications talking about the firm than failed firms. A simple compilation and comparison of average measures in each relevant independent variable studied (Table 1) shows, in many cases, stark contrasts between the values associated with successful and failing firms.

Individual binomial regression on all is represented in Table 2. Each independent variable was significant (at the \( p<0.05 \) level) in the identification of successful or failed firms. Hypotheses 1a, 1b, 1c and 1e are therefore supported. Succeeding companies have more articles/month, a higher annualized period-over-period growth rate in media mentions, more headlines and more unique publications that cover them (when adjusted for longevity of the firm) than failing companies. Hypothesis 1d, however, was not supported. In fact, the successful companies studied received significantly fewer mentions per article than failed companies.

A regression model consisting of all supporting variables was significant (\( p<0.001 \)) and classified 98.3 percent of successes (\( DF=4 \)). Therefore, Hypothesis 1f, that the model establishes a statistical signal of success, is supported. However, variables 1a, 1c and 1e were found to be highly correlated. Therefore, a best-subset analysis was run. The number of unique publications per month and the average annual growth rate in publications together were found to classify 97.7 percent of successes (\( DF=2 \)).

To evaluate Hypothesis 2, we looked at patterns of press releases specifically. The results of the independent samples t-test, to see whether succeeding ventures had more PR than failing ventures, are shown in Table 3. Succeeding ventures on average had 2.24 press releases per month versus only 0.95 for failing ventures – a difference of 136 percent. Therefore, Hypothesis 2a was supported.

To test Hypothesis 2b – whether companies increase PR activities as they position themselves for exit – we plotted the number of press releases per month for each successful firm over the period of months prior to each exit (Graph 1a). Additionally, we calculated the number of months that comprised the final 25 percent of each venture’s time period prior to exit (on average, 14 months) and calculated the percentage of total press releases that were put forth in that window. On average, 35 percent of successful companies’ press releases occurred during the last 25 percent of its time prior to exit. In fact, 22 of the 30 successes demonstrated higher than proportional numbers of PR in this window, suggesting possible support for Hypothesis 2b though a more definitive test is likely required. This is because the pace of PR ramp up is much less than that of all total media for succeeding firms (see Graph 1b), with an average of 52 percent of all media mentions taking place in the final 25 percent of the company’s time before exit.

Hypothesis 3 looks at the tone of the articles about ventures. The preponderance of media for both successful and failed ventures was positive or neutral. For successful ventures, the Janis-Fader coefficient was .87. For failed firms, the Janis-Fader coefficient was .92. This indicates,
contrary to Hypothesis 3, that successful firms have a higher percentage of negative tone news articles. Specifically, 4.5 percent of all media was negative for successful companies versus 2.6 percent for failed companies. Topics found during content analysis include announcement around new financing, new product, patent, competition, customers, product offering, IPO, merger and acquisition, board and management news, funding, partnerships, general, legal and negative news. The reliability of the content analysis using 3 coders resulted in agreement 97 percent of the time on tone and 90.9 percent of the time for content. Thus, inter-coder reliability was high.

**Discussion**

This study supports the overarching hypothesis that successful venture-backed companies signal differently than failed venture-backed companies. Successful venture backed companies have more articles, more headlines, more unique publications and compounding media growth rates. The significance of a regression equation containing these indicators suggests that one can predict a venture's ultimate success or failure by its media activity. The findings also suggest that successful ventures are more active with press releases, positing that enhanced PR correlates positively with, if not causes, success. Finally, the tone of articles around both successful and failure ventures were predominately positive, although successful companies were subject to slightly more negative press.

While most of our hypotheses were supported, 1d, theorizing that successful companies will have more in depth coverage, as evidenced by the number of mentions of their company per article, than failing firms interestingly was not supported. In fact, successful companies’ names were mentioned 4.3 times per article, compared to 5.8 times for failing firms. One possible explanation is that succeeding companies may be more likely to be mentioned tangentially in articles relating to the industry or be referenced for their expertise, more so than their failing counterparts. A qualitative observation of the publications studied was that a succeeding company will often be casually referred to—perhaps only once in the entire article—for example, in a list of companies most well known in their field or will have their product or service offering mentioned in a list of possible solutions to a relevant problem the media mention is addressing. Because the number of such articles for succeeding companies is higher, the percentage of feature articles and the mentions per article for those companies is therefore lower.

It was also somewhat surprising that Hypothesis 3 was not supported and that successful firms had in fact more negative tone articles than failed companies. This is partially explained by the fact that a higher percentage of successful companies’ media is journalistic, as opposed to self-directed, than that of failed companies (discussed below). In other words, successful firms have established a stronger media presence, and negative news is often times more salient or newsworthy. Additionally, a large portion of the negative news was found predominantly in two subject companies. In one case, the company was sued over IP infringement. While the company eventually prevailed, the suit received much attention. The second company had negative media around a potential acquisition that failed to materialize, although shortly thereafter the firm was acquired by another suitor at a significant premium. Future research might want to take a more subjective look at negative tone to see if there are instances where it might not be as detrimental. For instance, the failed acquisition likely provided signals that the company was available for sale and prompted other interested suitors to take a look.
In addition to the results of the tested hypotheses, the authors made additional discoveries from the data. For example, there is a significant (p<0.01) difference in the number of days between media mentions for successful and failed firms. Failed companies went, on average, 30 days between publications (including company initiated press releases) whereas successful firms averaged only 10 days between. This would suggest that frequency and continuity of media attention, not just quantity, is an important factor to success. A nascent firm should constantly be fostering coverage and re-affirming its name to its audience lest it be forgotten. Additionally, while successful companies issued more than twice the number of press releases as failed companies, their PR made up a much smaller fraction of total media coverage than that of failed companies. Approximately 39 percent of a failed venture’s media coverage was self-initiated, as compared to 21 percent of a successful venture’s press. These results demonstrate that while PR is an effective media tool, legitimacy is better signaled by a third-party’s vote of importance (through press coverage).

The findings are consistent with signaling theory. A company that is making progress and hitting important milestones benefits from communicating that progress (through press releases) and fostering independent coverage of those achievements. Such signaling reduces information asymmetry between the company and important potential partners, such as investors. Reducing information asymmetry reduces the cost, perceived or otherwise, of transacting with the venture in the eyes of stakeholders. For example, a new investor will view the positive information as validation for the pending investment, likely resulting in a higher follow-on valuation for the firm and fewer restrictive terms in the subsequent deal. Conversely, a firm that is not making progress will likely want to go unnoticed. Missing milestones, while important information for potential partners, makes it difficult to transact a deal. The failing firm likely hopes that it can correct its problems before potential partners can become aware of them.

Content analysis of all the communications for successful ventures shows that the following topics are most often communicated: IPO (26%), M&A (18%), New Products (13%) and New Customers (7%). While IPO and M&A dominate, those articles occur during and right after the exit event. Removing exit news from the analysis shows that the most common communication revolves around positive activity, such as release of new products (launching new versions, often at trade shows) and acquisition of customers (landing new well-known brands or large accounts). In our failure sample, the most often communicated activities include: New Customers (20.5%), Partnerships (20%), Product Offering (16%) and New Products (11%). Keeping in mind that there is far less communication in our failure sample, the focus of the communication that does occur is different. Partnerships are much more heavily emphasized among the failed sample, for example. This might be a function of trying to signal strength by whom the company is associated with because the firm may not have as much to say about its organic accomplishments. In fact, articles on failing companies focus much more on detailed product offering rather than new products. Thus, ventures in the failure sample may be putting out occasional signals just to remind the world they are still there, even though they do not have the same level of milestones as companies in our successful sample.

We also completed a separate content analysis of negative news. Although its overall quantity is relatively small, the articles most often noted negative news about a potential acquisition (25%), weakness against competitors (17%), and product offering (17%). This finding coincides with Pollock, Rindova and Maggitti (2008), who note that there are very few instances of negative media evaluations. Negative press is rare for small companies as they often are not on the main-stream
media’s radar and, as expected, company generated media, like press releases, is always positive. Two companies in our sample that had a fair number of negative citations were in the successful category, and the relative proportion of positive citations still far outweighed the negative citations. However, this is increasingly not the case in pulp web tech media, which occasionally runs smear and controversy articles on new and established “startups” alike.

These findings have implications for potential partners of entrepreneurial ventures. While due diligence on any potential partnership, such as an investment, is prudent, it is also costly and challenging. It typically takes anywhere from 40 to 400 VC hours, with an average of around 120 hours, to complete due diligence on a potential investment (Smart, 1998). However, VCs rarely spend that time sequentially. Therefore, in calendar terms, due diligence can last anywhere from six weeks to six months (Jubak, 1987). This is consistent with Van Osnabrugge’s (2002) finding that VCs, on average, take 12 weeks from first meeting to investment decision, and they meet with the entrepreneur(s) on around 10 separate occasions, contact over 4 independent references and over 4 outside individuals before making their decision. This is partially due to the fact that these investors are typically identifying young private companies, which are not required to communicate their somewhat-uncertain financial conditions, and therefore require other non-financial methods and data points to reach a conclusion. Therefore, the identification of media patterns as one such indicator of a company’s health, progress and potential is an important value-add for the community. Adding one additional, low-cost method to the due diligence process may improve decision accuracy, possibly substitute for longer and higher-cost methods and allow the entrepreneur to raise capital or complete mergers quicker.

The results of this research also provide key takeaways about media management to entrepreneurs. Evidence suggests strongly that ventures should be active in putting out company-directed press releases. Highlighting key milestones signals the company’s success to potential partners. These activities should especially be increased when the company is trying to position itself for a potential exit. That is because this research shows media to have a compounding effect (as demonstrated by ever-increasing media attention growth rates of successful companies) because articles and releases are often picked up by various news wires and publications, with press releases often being repeated verbatim.

For the academic realm, this paper evaluates a potential signal of nascent firms that has previously not been widely focused on. The examination of potential relationships between content frequencies, sources, and concentrations of media mentions and the stages of the new ventures they cover will hopefully provide a framework of leading indicators on measuring nascent venture success or failure that does not depend on pre-start causes or post-mortem evaluations. The results of this study will hopefully create a more contemporary understanding of the role of the media in new venture development and expectantly encourage further exploration on the subject of media as it relates to new ventures.

Like all research, this study has some limitations. First, we focused only on media that originates from traditional sources (press releases, periodicals and newswires). Today, signals are sent via non-traditional media, such as blogs, social media and other web-based avenues. The current paper falls into the tradition of media signaling research, but future research should attempt to tap and analyze the predictive value of these modern media sources. The major obstacle to meaningfully assessing social media has been determining the relative importance of a mention. While some may go “viral” and have a large, lasting impact, others may only be seen by a small audience.
Second, the sample, no matter how large in quantity, is not representative of the overall pool of startups at large. This is because our sample is sourced from venture capital portfolios, whereas only a small number of new ventures ever receive VC funding. Future research may want to track non-VC funded ventures and compare to a VC-funded sample. Increasingly, VC’s play a more active role in the media, with many having active Twitter accounts and well-followed blogs, and there is therefore a possibility that VCs are driving at least a portion of media cites as they work to publicize their investments. For non-funded startups, the entrepreneur may be playing this role, and this study did not control for the potential of media-savvy entrepreneurs or investors who may be able to squeeze more out of the media than a less media-active counterpart.

The current paper looks at signals prior to an exit. The question that remains is whether these signals have lasting impact. Future research can extend the current dataset to examine whether signaling behavior changes post exit and whether there are lasting reputation effects. Second, the sample in this research, in including only venture capital backed companies, does not account for the built-in legitimacy premium of having a VC backer. The question is whether having a VC involved lead to different signaling behavior and whether there is meaningful influence of a VC’s role in a company pursuing a more aggressive signaling strategy. Alternatively, non-funded startups may potentially have more press-savvy entrepreneurs who, in the absence of an active investor, rely on press as the primary signal of legitimacy and therefore are better able to navigate the media process. Finally, Einwiller, Carroll and Korn (2010) go beyond looking at all media and focus just on those attributes that are most important to the intended audience. Their hypothesis is that salient media has big impact on reputation and media on less important aspects has little to no effect. This is especially true when the media is about factors that are difficult to inspect. This might be particularly relevant to PR. Which PR is most important? How do you segment it by audience? Future research could survey important stakeholders, like investors, to see what media they follow and what types of content are most important to them. If the successful sample is any indication, it would seem that signaling new products and customers is particularly relevant to stakeholders.

**Conclusion**

This paper makes a number of contributions. First, it answers the call of Pollock, Rindova and Maggitti (2010) to investigate the media attention of younger firms. It appears that successful new ventures follow a different signaling strategy than failed new ventures. Specifically, successful firms have more articles, more headlines and more attention from a wider publication source base than failed firms. Leading to that result is a higher usage of company directed signaling through PR. Surprisingly, successful firms have a slightly smaller percentage of positive tone media than failed firms, though both types have relatively little negative press. The implications for entrepreneurs and investors are clear. Entrepreneurs need to aggressively signal important milestones. Such activity increases awareness and legitimacy of the venture. VCs, on the other hand, can access media activity as part of their due diligence efforts. If a potential investment company has large numbers of media citations, it seems to indicate that the venture has strong success and exit prospects. If a potential investment company rarely appears in the press or has infrequent press releases, it suggests that the venture has nothing to report and may therefore be struggling or failing. This research, to our knowledge, is the only research looking at media citations for new ventures, though it hopefully provides a platform for other researchers to delve deeper into
this arena. The results of the study indicate that there is at least some predictive value in media attention, which should be studied further in terms of its relationship to new ventures and their pending successes or failures.

**CONTACT:** Alisa Boguslavskaya; abogusla@indiana.edu; (T): 781-214-0421; Kelley School of Business, Indiana University, 1309 E. Tenth Street, #736-10, Bloomington, IN 47405.

**Notes**

1. Those negative citations centered around a lawsuit brought by one of the company’s competitors for one of the firms and the other around a potential acquisition that didn’t come to fruition.

**References**


Table 1: Comparison of H1 Independent Variable Values - Failed vs. Successful Ventures

<table>
<thead>
<tr>
<th></th>
<th>Averages of Failures</th>
<th>Averages of Successes</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Total # of Publications</td>
<td>206</td>
<td>645</td>
<td>213%</td>
</tr>
<tr>
<td>Average # of Times Mentioned per Article</td>
<td>5.77</td>
<td>4.34</td>
<td>-25%</td>
</tr>
<tr>
<td># of Articles that mention company in the article title/month</td>
<td>1.06</td>
<td>3.42</td>
<td>223%</td>
</tr>
<tr>
<td>Average # of articles per month</td>
<td>2.72</td>
<td>11.80</td>
<td>333%</td>
</tr>
<tr>
<td>Average annual growth rate of articles</td>
<td>37 %</td>
<td>177%</td>
<td>374%</td>
</tr>
<tr>
<td># of Unique Publications per Month</td>
<td>0.67</td>
<td>2.34</td>
<td>252%</td>
</tr>
</tbody>
</table>

Table 2: Individual Regression Results of H1 Independent Variables versus Success

<table>
<thead>
<tr>
<th>Hyp.</th>
<th>Variable</th>
<th>Coef</th>
<th>SE Coef</th>
<th>Sig (p)</th>
<th>DF</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Average # of articles per month</td>
<td>0.394</td>
<td>0.115</td>
<td>0.001</td>
<td>1</td>
<td>Supported</td>
</tr>
<tr>
<td>1b</td>
<td>Average annual growth rate of articles</td>
<td>1.881</td>
<td>0.615</td>
<td>0.002</td>
<td>1</td>
<td>Supported</td>
</tr>
<tr>
<td>1c</td>
<td># of Articles that mention company in the article title/month</td>
<td>0.854</td>
<td>0.266</td>
<td>0.001</td>
<td>1</td>
<td>Supported</td>
</tr>
<tr>
<td>1d</td>
<td>Average # of Times Mentioned per Article</td>
<td>(0.284)</td>
<td>0.129</td>
<td>0.028</td>
<td>1</td>
<td>Rejected</td>
</tr>
<tr>
<td>1e</td>
<td># of Unique Publications per Month</td>
<td>2.525</td>
<td>0.670</td>
<td>0.000</td>
<td>1</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 3: 2-Sample T Test: Press releases per month

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>StDev</th>
<th>SE Mean</th>
<th>Estimate for difference</th>
<th>95% CI</th>
<th>Sig (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure</td>
<td>30</td>
<td>0.953</td>
<td>0.789</td>
<td>0.14</td>
<td>-1.292</td>
<td>(-2.100, -0.483)</td>
<td>0.003</td>
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<tr>
<td>Success</td>
<td>30</td>
<td>2.24</td>
<td>2.04</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graph 1a: Successes' PR/Month at # of Months until Exit

Graph 1b: All Successes' Media/Month at # of Months until Exit

* One sample with a significant outlier (188 PRs in the last month) was excluded from analysis