

When a celebrity endorser is disgraced: A twenty-five-year event study

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Published online: 5 February 2013
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Abstract This paper investigates how the announcement of negative information about a celebrity endorser impacts firm value, as measured by abnormal stock returns. The unique data sample consists of 93 celebrity disgraces that occurred between 1986 and 2011, affecting firms listed on US stock exchanges. Some evidence is documented of negative and statistically significant abnormal returns around these events. Returns are lower when the disgrace attracts much media attention, or when the celebrity itself is prominent. No significant returns are observed when a firm decides to terminate its endorsement contract with the disgraced celebrity. Endorsement contracts for “edgy” products, for which consumers may actually be attracted by negative publicity, are less likely to be terminated.

Keywords Celebrity endorsement · Event study · Stock returns

1 Introduction and prior work

Around 2:30AM on November 27, 2009, Tiger Woods had a car accident outside his Orlando-area home. In the ensuing chain of events, some of the largest endorsement contracts in history were terminated. Accenture, AT&T, Gatorade (i.e., Pepsico), and Gillette (i.e., Procter and Gamble) all decided that the disgraced golfer should not

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continue to be their spokesperson. Interestingly, sponsors like Nike, Electronic Arts, and NetJets maintained their relationship and decided not to scrap their endorsement contracts.

The Tiger Woods scandal is in no way unique. A snapshot of Michael Phelps smoking marijuana cost the Olympic gold medalist an endorsement deal with Kellogg. Tabloid photos of supermodel Kate Moss snorting cocaine cost her deals with Burberry and Chanel. Madonna, O.J. Simpson, and Michael Vick are but a few examples of celebrities whose endorsement contracts were terminated because of disgraceful behavior.

Use of celebrity endorsers has been a popular strategy for decades, with as many as 25 % of US firms employing celebrities in advertising campaigns (Shimp 2000). In 2003, Nike spent \$1.44 billion on endorsement contracts (CNN Money 2003). In the 12 months prior to June 2008, Oprah Winfrey netted \$275 million from endorsement contracts (Miller 2008). Michael Jordan has earned around \$10 billion from endorsements over the course of his career (Erdogan, Baker, and Tagg 2001).

Despite the wide use of celebrity endorsers, evidence of the impact of this strategy on endorsed corporations' market value is mixed. Agrawal and Kamakura (1995) find positive, albeit small, abnormal stock returns on the endorsement announcement date. By contrast, Ding, Molchanov and Stork (2011) document non-significant returns around announcement dates. Lack of unambiguous evidence could be attributed to the fact that positive aspects of celebrity endorsements, such as brand name recognition and better advertising communication, are often matched by negative ones.

Marketing literature has identified several potentially negative consequences of employing celebrities as endorsers. Consumers may focus their attention on the celebrity, rather than on the advertised product (Rossiter and Percy 1987; Costanzo and Goodnight 2006). A celebrity may associate herself with too many brands (Mowen and Brown 1981) or perhaps disappear from the public spotlight (Ziegel 1983).

Celebrity misbehavior brings negative publicity to the endorsed company, which can adversely affect sales and thus the company's market value (Tybout, Calder, and Sternthal 1981). A systematic analysis is performed of the impact of celebrity disgraces and subsequent contract terminations on endorsed firms' stock returns using a large sample of events. To the best of our knowledge, this is the first paper to perform such an extensive and detailed empirical analysis. Previous research has mostly analyzed the effects of single misbehavior episodes, e.g., Hood (2012), who analyzes the Tiger Woods affair, or Leeds (2010), who describes Floyd Landis's disgrace. A notable exception is the interesting work by Louie, Kulik, and Jacobson (2001). Using event-study methodology (similar to the one used in this paper), the authors document negative market reaction to events where a celebrity is viewed as blameworthy but positive reactions when celebrities are not considered at fault. Whereas the authors analyze the impact of undesirable events (some of which, like an injury, may in fact increase an endorser's appeal), this paper concentrates on endorser's misbehavior episodes. This paper uses a substantially different data sample of 93 celebrity disgraces between 1986 and 2011, whereas Louie, Kulik, and Jacobson (2001) analyze 52 events between 1980 and 1994.

We hypothesize that an endorser's misbehavior will be accompanied by negative abnormal stock returns, as consumers shun the associated brand. The relationship, however, may depend on a number of celebrity and event characteristics. First, an

endorsed product may target a specialized group of consumers that may actually be attracted by negative publicity.¹ Abnormal stock returns around misbehavior events for such “edgy” products are expected to be less pronounced, or even positive. Furthermore, stock market reaction may depend on whether the offence involved breaking the law or was “moralistic.” In the last case, a less significant reaction is expected, as some consumers may not perceive such events in a negative light. More variables are discussed in “Section 4.” As for subsequent endorsement contract termination, the hypothesis is not as straightforward. Abnormal returns around the contract termination announcement date may be negative (as the announcement brings additional attention to the misbehavior event), zero (as the potential damage to the brand has been done on the day of misbehavior), or positive (as investors may view the termination as the firm’s attempt to cleanse its image). Furthermore, one can view a firm’s decision to terminate a contract as profit-maximizing, which itself depends on a number of factors relating to both a firm and a celebrity.

This paper documents some evidence of a significantly negative market reaction to announcements of celebrity disgraces. The reaction is more pronounced for events and celebrities that receive greater media coverage. No significant reaction is observed when endorsement contracts are terminated. The rest of the paper is organized as follows: “Section 2” outlines the event-study methodology used in this paper. “Section 3” describes the data sample. In “Section 4,” the empirical results and robustness analyses are reported. “Section 5” concludes.

2 Methodology

The event-study methodology estimates “abnormal” returns, which are defined as the differences between actual *ex post* returns around a major economic event (in this paper: related to a celebrity disgrace) and “normal” returns. A normal return is calculated as a company’s expected stock performance relative to the market index in the absence of a major economic event. Clearly, a certain degree of randomness exists, as *ex post* values are unlikely to match the expected values. However, once the abnormal returns are averaged across all events, the degree of randomness is substantially reduced, and inferences regarding event’s economic value can be obtained. For mathematical details as well as examples of the said methodology see, among others, Agrawal and Kamakura (1995), Louie, Kulik, and Jacobson (2001), Clark, Cornwell, and Pruitt (2002), and Ding, Molchanov, and Stork (2011).

The Fama French four factor model is employed to estimate expected returns. Individual firm returns are regressed on the relevant market index as well as the size, value, and momentum factors over event days $t=-255$ to $t=-46$, with $t=0$ corresponding to the event (celebrity disgrace or contract termination). For each firm, two parameters of the market model—slope and intercept—are recorded. These parameters are then used in conjunction with actual index returns to generate expected returns over the event window (in this case, $t=-10$ to $t=10$). The abnormal returns, which are meant to measure the economic impact of the event, are computed by subtracting these expected returns from actual observed returns for each firm over

¹ In this paper, sporting apparel is classified into such “edgy” category.

the event window. These returns are then aligned in event time around the announcement date. Cumulative average abnormal return (CAAR) is the cumulative summation of individual abnormal returns registered between two given event days (e.g., $t=-10$ and $t=10$). The Eventus software is used (see Cowan 2008) for abnormal return estimation and significance testing.

3 Data description

The sample of celebrity misbehaviors was compiled by hand, completely from scratch. In the data collection, terms such as "celebrity scandal" and "lost endorsement" were inputted into the Google and Yahoo search engines. From these searches, announcements of celebrity misbehaviors from a variety of online news sources were netted. In many cases, press coverage about one incident would reference similar incidents of misbehavior, which could thus be investigated. The search was continued until no additional misbehaviors could be identified. After an occurrence of misbehavior was identified, LexisNexis and ProQuest were used to accurately pinpoint the date and time of the transgression as well as the sponsoring company's reaction. The main sources from LexisNexis and ProQuest utilized included newswire services as well as several major daily newspapers.

To maintain consistency in stock returns, the scope is limited to companies listed on US exchanges, i.e., US-based companies or ADR prices of non-US firms.² Data on stock returns are obtained from the Center for Research in Securities Prices database. In total, the sample consists of 93 announcements of celebrity misbehaviors and 44 announcements of endorsement contract terminations.

4 Results

4.1 Abnormal returns around "disgrace" announcement dates

Table 1 presents average abnormal returns around the announcements of celebrity misbehavior episodes, starting 10 days before the announcement day. One may argue that celebrity misbehaviors are unanticipated events. Nevertheless, pre-announcement dates are included, as sometimes the misbehavior date cannot be pinpointed to within a day with 100 % accuracy. Alternatively, there could be a delay in press coverage of an event, which may result in pre-announcement information leakage.

Several of the abnormal returns in Table 1 are statistically significant at a 5 or 10 % level. All in all, a fairly consistent negative market reaction is documented to endorsers' disgraceful behavior, which is in line with our hypothesis. Figure 1 visualizes the cumulative abnormal returns around event date. A strong downward trend is evident, with negative returns on event date and shortly thereafter, although a few positive returns occur as well. Next, cumulative average abnormal returns are calculated across a number of event intervals. Table 2 shows that these returns are consistently negative across all alternative event windows, and some of these reach

² Such as Telecom Italia.

Table 1 Average abnormal returns around celebrity misbehavior announcement date

Event day	AAR	Patell test	Rank Z test	CAAR
-10	0.07 %	0.25	0.85	0.07 %
-9	0.09 %	-0.54	-0.06	0.16 %
-8	-0.05 %	-0.39	-0.36	0.11 %
-7	-0.05 %	-1.10	-0.28	0.06 %
-6	-0.43 %	-1.41	-1.26	-0.37 %
-5	-0.28 %	-0.89	-1.80 ^a	-0.65 %
-4	0.21 %	-0.27	-0.73	-0.44 %
-3	-0.32 %	-1.61	-1.89 ^a	-0.76 %
-2	0.28 %	0.91	-0.39	-0.48 %
-1	-0.04 %	-0.30	-0.40	-0.52 %
0	-0.29 %	-1.65	-0.95	-0.81 %
1	-0.24 %	-0.73	-0.26	-1.05 %
2	-0.27 %	-1.96 ^a	-1.20	-1.32 %
3	0.41 %	1.09	0.73	-0.91 %
4	0.16 %	0.13	1.73 ^a	-0.75 %
5	-0.40 %	-2.37 ^b	-2.34 ^b	-1.14 %
6	-0.02 %	0.11	-0.23	-1.16 %
7	-0.17 %	-1.04	-1.72 ^a	-1.34 %
8	-0.02 %	0.85	-0.43	-1.35 %
9	-0.11 %	-0.69	-0.67	-1.46 %
10	-0.10 %	-0.98	-1.40	-1.56 %

Table reports average abnormal returns, Patell test statistics, and Z-test statistics in event time around the misbehaviour announcement date. AAR denotes average abnormal returns; CAAR denotes cumulative average abnormal returns
^aStatistical significance at the 10 % level
^bStatistical significance at the 5 % level

statistical significance. Especially noteworthy is the statistical significance of the [-10, +10] full sample window, which takes into account both potential information leakage and delayed reaction to misbehavior announcements.

4.2 Abnormal returns around contract termination dates

Unreported results show that average abnormal returns around contract termination dates are non-significant. Moreover, for none of the conventional time windows, the

Fig. 1 Cumulative abnormal returns around celebrity misbehavior date

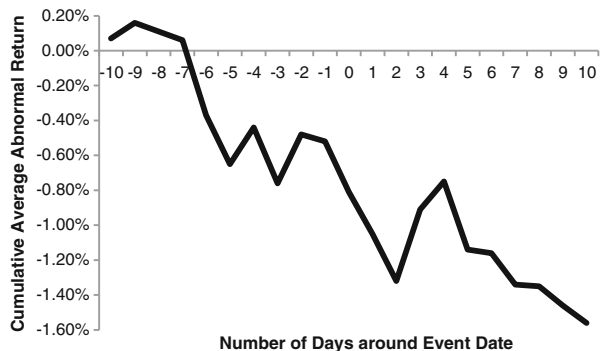


Table 2 Cumulative average abnormal returns around celebrity misbehavior announcement date

	Event window	CAAR	Portfolio time-series T-statistic	Rank Z test
	(-10, +10)	-1.56 %	-1.99 ^b	-2.85 ^c
	(-10, -2)	-0.48 %	-1.13	-1.97 ^b
	(-5, +5)	-0.78 %	-1.58	-2.26 ^b
	(-4, 0)	-0.16 %	-0.90	-1.95 ^a
	(-2, 0)	-0.05 %	-0.18	-1.00
	(-1, 0)	-0.33 %	-1.12	-0.96
	(-1, +1)	-0.57 %	-1.32	-0.93
	(-1, +10)	-1.08 %	-1.50	-2.06 ^b
	(0, +1)	-0.53 %	-1.55	-0.86
	(0,+2)	-0.80 %	-2.25 ^b	-1.39
	(0,+10)	-1.04 %	-1.61	-2.03 ^b
	(+1, +5)	-0.33 %	-1.29	-0.60
	(+1, +10)	-0.75 %	-1.26	-1.83 ^a

Table reports cumulative average abnormal returns, Patell test statistics, and Z-test statistics in event time around the misbehavior announcement date

^aStatistical significance at the 10 % level

^bStatistical significance at the 5 % level

^cStatistical significance at the 1 % level

cumulative average abnormal returns are significantly different from zero. These findings are consistent with the hypothesis that no additional negative information is being released on the contract termination announcement day. In other words, any potential damage to company's value was already done on the day of misbehavior announcement. Also, it appears that investors do not view contract termination in positive light (perhaps as an attempt by a company to cleanse its image).

4.3 Confounding effects analysis

As a robustness check, the sample is cleaned from potential confounding effects, following Johnston (2007) and McWilliams and Siegel (1997). This analysis ensures that the reported abnormal returns are indeed driven by a celebrity-related announcement, rather than by some other firm-specific information signal. For each firm, all news messages released during the (-10, +10) event window are examined. This 4-week window length likely captures most of the stock return effects occurring around the event date. Some of the firms in the sample are of such a large size that they tend to have multiple daily firm-specific information releases. Therefore, the objective is to eliminate only those events that significantly impact the firm's market value, as measured by the event-day abnormal return.

The procedure follows Pritamani and Singal (2001), who use return-level thresholds to identify significant price changes. In each event window, days with abnormal returns greater than 3 % in magnitude are searched for. Subsequently, the Factiva news article database is searched for, to identify firm-specific information releases. An event is dropped if a relevant release is identified. In the case of celebrity misbehavior announcements, 36 events are dropped. In the case of endorsement contract termination announcements, 11 events are eliminated. Unreported results show negative and statistically significant cumulative average abnormal returns in the (-10, +10), (-10, +2), (-5, +5), (0, +10), and (+1, +10) windows around misbehavior

announcement dates. Average abnormal returns around contract termination dates remain non-significant. The confounding analysis is once repeated using a 5 % return-level threshold, rather than a 3 % return-threshold. The results are qualitatively similar to the ones described above. The combination of these findings may be interpreted as further evidence of the negative impact of a celebrity disgrace. However, as significance depends on the specific choice of event window length, such results should be interpreted with caution.

4.4 Event, firm, and celebrity characteristics

One could argue that the disgrace of an endorser with a specific set of characteristics is more likely to generate negative stock market returns than others. Such an effect may remain unnoticed when reporting average returns only. A total of 17 characteristics of both endorser and firm are distinguished that are often used in the endorsement literature. Ding, Molchanov, and Stork (2011) provide a detailed list of references for most of the characteristics used.³ They are: (1) *Age*: Regular variable representing the age of the endorser on event date; (2) *Athlete*: Dummy variable with value 1 if endorser is an athlete and 0 otherwise; (3) *Decade*: 1 if announcement occurs in the 1980s, value 2 if in the 1990s and value 3 if in the 2000s; (4) *Edgy product*: 1 if product is considered edgy and 0 otherwise; sports apparel is classified into this category. (5) *Factiva count*: The number of times a celebrity is mentioned in Factiva news sources over the event window, divided by 100; (6) *Gender*: 1 if endorser is male and 0 otherwise; (7) *Importance*: The number of times a celebrity is mentioned in Factiva during the calendar year, divided by 100; (8) *Link*: The number of times a celebrity and an endorsed company are mentioned together during the calendar year; (9) *Market cap*: The firm's market capitalization, downloaded from the Compustat database and divided by 100,000; (10) *Matchup*: 1 in case of congruence between endorser and product, value -1 in case of incongruence and 0 otherwise. Congruence is assumed when an athlete endorses a sports-related product or when a female endorses a beauty product. Incongruence is assumed when an athlete endorses a restaurant, confectioner, or soft drink. (11) *Media coverage*: 1 if the misbehavior is covered by one or more of the major newspapers (New York Times, Wall Street Journal, or USA Today) and 0 otherwise; (12) *Media drop*: Defined in a similar way; (13) *Objective*: 1 if misbehavior event is an objectively illegal act and 0 otherwise; (14) *Price-to-book*: The firm's price-to-book ratio, downloaded from Compustat; (15) *Sole endorser*: 1 if the celebrity is the sole endorser of a company and 0 otherwise; (16) *Technology sector*: 1 if the firm is categorized as a technology industry firm and 0 otherwise; (17) *Volume*: Event date trading volume divided by the average trading volume across the [-10, +10] window.

To investigate if the abnormal returns depend on any of the characteristics, two cross-sectional ordinary least-squares regressions are conducted per individual characteristic, both on the abnormal return on event day $AR(0)$ and on the cumulative return around event day $CAAR(-1, +1)$. The regressions are run both on the full sample of disgraces and on the subsample of disgraces for which the contracts were dropped. The unreported results show that three of the estimated slope coefficients are

³ Thanks are due to two anonymous referees for suggesting several more characteristics.

significantly different from zero at the 5 or 10 % level: (1) The Factiva count measure, the number of times the celebrity has been mentioned in news media during the event window, is significantly negative for both the event day abnormal return $AR(0)$ and the cumulative return around event day $CAAR(-1,+1)$. (2) The “Importance” variable, indicating how many times a celebrity has been mentioned in the media in a given calendar year, is significantly negative around event day. (3) The sole endorser dummy, indicating whether or not a firm used one endorser or multiple, has a significantly negative slope coefficient for the window around event day.

As a robustness test, adjusted values of the “Factiva count” and “Importance” metrics are calculated. The idea behind these adjustments is that, over time, the number of Factiva reports tends to rise. As a result, recent disgraces appear to be more relevant, whereas this effect may be caused purely by a broad increase in the number of press statements over time. Both the Factiva count and Importance metrics are adjusted for this trend-wise increase by dividing them by the total number of English-language Factiva stories in a given calendar year. Results are not significant. Hence, this last robustness test somewhat weakens the strength of the above findings documented for these two unadjusted, “raw” measures.

Per contrast, for the subsample of 44 dropped contracts, none of the slope coefficients are statistically significant. Thus, no single characteristic significantly impacts abnormal returns (or cumulative abnormal returns) around contract termination dates.

4.5 Which contracts got terminated?

To investigate which misbehaviors are more likely to result in subsequent termination, a logistic regression is performed with a binary variable equal to one if a contract is terminated and zero otherwise. Table 3 describes the results from a logistic regression of contract termination on various firm, event, and celebrity characteristics. One characteristic shows up significant at a 5 % level: Endorsement contracts for edgy products, for which consumers may actually be attracted by negative publicity, are less likely to be terminated. This finding is consistent with prior research by Erdogan (1999), Louie, Kulik, and Jacobson (2001), Money, Shimp, and Sakano (2006), and Berger, Sorensen, and Rasmussen (2010). Furthermore, the results in Table 3 suggest that larger firms tend to terminate the endorsement contracts more easily, although this relationship is significant at a 10 % level only. Market reaction on the misbehavior day appears to have no effect on firms’ decision to terminate a contract.

The fact that two characteristics have a systematic effect on probability of contract termination suggests that termination is an endogenous profit-maximizing decision. Thus, it is not surprising to observe non-significant abnormal returns around contract termination dates.

4.6 Nike test

Endorsements of Nike products dominate the sample. Celebrities endorsing Nike products were involved in 24 misbehavior events, five of them resulting in subsequent contract termination. An event study is performed on disgraces involving Nike

Table 3 Impact of various characteristics on likelihood of contract termination

Explanatory variable	Odds ratio
Age	1.04 (1.37)
AR(0)	1.03 (0.34)
Athlete	0.42 (-1.56)
CAR[-1,+1]	1.04 (0.81)
Decade	0.60 (-1.55)
Edgy product	0.39 ^b (-2.03)
Factiva count	1.00 (-0.64)
Gender	0.43 (-0.96)
Importance	1.00 (-1.17)
Link	1.00 (0.67)
Market cap	1.00 ^a (1.70)
Matchup	0.61 (-1.41)
Media coverage	1.20 (0.39)
Objective	0.63 (-1.09)
Price-to-book	1.00 (0.05)
Sole endorser	2.13 (1.14)
Technology sector	0.34 (-1.27)
Volume	1.14 (0.23)

Table reports odds ratios and z-statistics in brackets, of logistic regressions of the likelihood of contract termination on various characteristics. This table also describes these characteristics
^aStatistical significance at the 10 % level
^bStatistical significance at the 5 % level

endorsements only. The results are largely consistent with the overall sample. Virtually all event windows exhibit negative abnormal returns (although with an exception of [0, +1] window). Many of the event windows are statistically significant, including the important [-10, +10] window. Overall, the results indicate a negative reaction, although the significance depends on the particular choice of event window. Apparently, the results are not driven by specific reactions to Nike-related events.

5 Discussion and conclusions

While the use of celebrity endorsements has been widespread, evidence of this strategy's effectiveness from stock market perspective is mixed. While Agrawal and Kamakura (1995) document positive market reactions to signing celebrities as product endorsers, Ding, Molchanov, and Stork (2011) document non-significant results. Lack of significant abnormal returns around endorsement announcements can be potentially explained by a number of factors, such as high costs, discounting for potentially negative future events, or market anticipation of such contracts. However, celebrity misbehavior is an unequivocally negative, unanticipated event, which, in principle, should have an adverse effect on company's future cash flows. This, in turn, should be reflected in abnormal stock returns around the event date. Therefore, analysis of such exogenous events provides for a cleaner test of the market value of celebrity endorsements.

This paper contributes to the existing literature by performing a systematic analysis of the effects of scandals associated with celebrity endorsers, thus extending the

work of Louie, Kulik, and Jacobson (2001). Some evidence of significantly negative abnormal returns is documented around the announcement days of celebrity misbehaviors. The results, however, are not robust to the choice of event window and, therefore, must be interpreted with caution. On the one hand, negative abnormal returns around celebrity misbehavior dates are consistent with conventional wisdom and some prior literature (e.g., Agrawal and Kamakura 1995) that celebrity endorsements are value-enhancing events, and damage to celebrity's image has detrimental effects on company's value. On the other hand, lack of robustness of this paper's findings may suggest that the old adage "any publicity is good publicity" still holds true. Nike's decision to continue the contract with Tiger Woods, in hindsight, proved to be the correct one, as Woods-brand merchandise sales went up during the period of his public embarrassment. Furthermore, Berger, Sorensen, and Rasmussen (2010) find that negative publicity can increase purchase likelihood. Moore and Hutchinson (1983) document that negative reaction to advertising may improve product consideration. Also, Money, Shimp, and Sakano (2006) show that intentions to buy endorsed products may strengthen after the endorser is exposed to self-oriented negative information. Recently, Nicolau and Santa-Maria (2012) show that Rafael Nadal's losses (which are, presumably, negative events) do not have a negative impact on endorsed firms' value. Louie, Kulik, and Jacobson (2001) argue that fans may have a relatively high tolerance for their favorite athlete's blameworthy actions. For low-culpability events, they find "that the increased visibility generated by an undesirable event enhances endorsers' effectiveness."

Such findings tie in with recent behavioral finance research (Barber and Odean 2008), in which more attention for a stock tends to generate upward pressure on its stock price. Thus, an increase in publicity, even if negative, tends to push up the stock price. This upward price effect may be cancelled out by the assessment by investors of possibly decreasing sales, caused by the disgraced celebrity's impact on the brand. This paper shows that stock market reactions to celebrity disgraces depend on a number of factors. Events receiving greater media attention and events involving more prominent celebrities result in a somewhat stronger negative reaction. Similarly, a stronger reaction is observed for events involving firms that employ a single, rather than multiple, endorser. Lack of significant abnormal returns around contract termination dates suggests that firms' decisions to terminate endorsement contracts may be endogenous and profit-maximizing (firms are less likely to terminate endorsement contracts for edgy products) which should not necessarily result in significant market reaction.

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