

# The finance and marketing dilemma: Do promotional allowances actually increase revenue and profits for Atlantic City casinos?

*Toni Repetti, Ph.D.*

## Abstract

Casinos offer free items to attract new guests or to reward their loyal customers. Casino management and marketing personnel believe these promotional allowances are necessary to maintain customers and to increase revenue. Three regression models are run to determine if promotional allowances increase gross revenue, net revenue, and gross operating profit for Atlantic City casinos. Results show that with a \$1 increase in promotional allowances there is a significant increase of \$4.53 in gross revenue, \$3.53 in net revenue, and \$1.29 in gross operating profit. These results will help management better understand the effect of offering complimentary items to their customers.

## Introduction

Promotional allowances, also known as complimentary items, are casino management's answer to loyalty programs that many industries, such as airlines and grocery stores, have been doing for so long. Casino management gives promotional allowances for two main reasons: to increase revenues in the hopes that the guests that are receiving the free item will spend more money than they would without the complimentary items and to encourage customer trial within the casino. Casino promotional allowances have changed over time from casino logoed merchandise and inexpensive meals to the likes of high-end hotel rooms, concerts, expensive meals, free gaming play, and shopping sprees. Customers have historically earned complimentary items based on their amount of gaming play alone, but more casinos are starting to extend complimentary items beyond their casino players to their loyal hotel and food and beverage customers (Marfels, 2010). Caesars Entertainment, Hard Rock Hotel & Casino in Las Vegas, and MGM Resorts International have all recently revised their player loyalty programs to allow customers to earn rewards on all spend within their resorts (Dostal, 2012). The Cosmopolitan of Las Vegas, which also allows customers to earn rewards on all spend, is the only resort in Las Vegas though to have this policy since they opened in December 2010.

Promotional allowances include the amounts given to each guest based on how much the guest gambles or spends and also on management's current marketing strategy which could include items such as discounts, "buy one, one get free", or free items when certain other items are purchased. Promotional allowances do not include advertising spend and only includes items that have a direct revenue contribution when redeemed.

Toni Repetti, Ph.D.  
Assistant Professor  
William F. Harrah College of  
Hotel Administration  
University of Nevada, Las Vegas  
4505 S. Maryland Parkway  
Las Vegas, NV 89154  
Email: [toni.repetti@unlv.edu](mailto:toni.repetti@unlv.edu)

The American Institute of Certified Public Accountants' accounting standards suggest that promotional allowances be booked one of two ways, at retail and included in gross revenue and backed out to achieve net revenue or not booked at all (2007). Under both scenarios net revenue is the same and an increase in promotional allowances increases gross revenue under the first scenario only. Atlantic City casinos use the first scenario, as do most casinos since this is the prevailing industry practice (Las Vegas Sands Corp, 2012).

Atlantic City casinos had a decrease in promotional allowances of \$15.6 million or 1.3% from 2010 to 2011, yet gross revenue decreased \$271.3 million, 5.7%, and net revenue decreased \$255.7 million or 7.2% (New Jersey Department of Law and Public Safety, Division of Gaming Enforcement, 2012). This shows that promotional allowances may not be increasing or maintaining revenue like management would hope since revenues are decreasing faster than complimentary.

In 2010 management at Sands Las Vegas decided to drastically cut complimentary for many of their players expect for high-end gamblers (Stutz, 2011). They believe selling the rooms and food and beverage will be more profitable to the casino than giving them away and hoping to make additional gaming revenue off the customers who received the complimentary (Stutz, 2011). Casino management has not stated if this is a successful decision or not. Las Vegas Sands is not the only company revising their promotional allowances although they are the most extreme. Caesars Entertainment has recently stopped giving free shows to their highest tier customers and customers must now use their points for these shows (LasVegasVegas.com, 2012). Points are awarded to customers based on how much they gamble or spend with each dollar spent equating to a certain number of points earned. These points can then be redeemed for various complimentary based on a predetermined redemption level set by the casino (Lucas & Kilby, 2008).

The purpose of this study is to determine if promotional allowances increase gross revenue, net revenue, or gross operating profit for Atlantic City casinos. From an operational perspective this is rarely analyzed and the few academic studies that have been done are concerned with the effect on gross revenue and not net revenue or operating profit. Since there may be other expenses that increase with the increased complimentary and corresponding gross revenue, increasing promotional allowances may not be the most effective way to increase operating profit even though revenues may be increasing. Results of this study will help determine if management is making the right decision in giving complimentary. In addition, Atlantic City casino management will know the true benefit or cost of providing promotional allowances instead of just estimating what they believe is happening.

### **Literature Review**

There is little known research on the effect of overall promotional allowances in the gaming industry, although there is some research on specific promotions. There is also little research in other industries which may be attributed to the fact that other industries do not report complimentary separately in public information, while gaming firms do as mentioned in the introduction. This literature review will start with some general promotion studies and then discuss the casino specific research.

Srinivasan, Pauwels, Hanssens, and Dekimpe (2004) study whether price promotions at supermarkets actually generate additional revenue and increase margins and find that promotions do not permanently affect volume. They do find that changes happen in the short run, but these changes disappear over time. Drèze, Nizel, and Vilcassim (2004) also study grocery stores and find that price promotions do persuade

customers to spend more, but this just causes customers to increase inventory levels and spend less later. The authors also find that there is a reallocation of spending across products, so they may spend more in one area due to the promotion but they are decreasing in other groups to compensate. Casino management typically evaluates marketing promotions on a short term basis, and these findings may support management's decision to implement discounts or complimentary, but this may not be the correct decision in the long run.

To analyze whether promotions are a significant driver for a service industry Wakefield and Barnes (1996) survey fans of a triple A baseball team. They find that loyal customers receive greater satisfaction from the service provided than the actual promotion. Mimouni-Chaabane and Volle (2010) also find that nonmonetary benefits such as recognition are an important factor in a customer's perception of a company's loyalty program and these benefits are harder to replicate than monetary benefits. Since most revenue generated in casinos in Atlantic City is from gaming these may be significant for casino management. If casinos believe their customers are loyal, these studies may indicate that the casino atmosphere and the gaming is the draw and money could be better invested in the casino for upgrades and increased service instead of promotions. If management is concerned that their customer base is not loyal and will move to the casino with the best or most promotions at the time, they can adjust promotion offerings to attract more customers.

There are only four known studies on the relationship between revenue and promotional allowances in the gaming industry and there are no known empirical results on operating profit. Analyzing the Atlantic City market, Marfels (2010) uses Spearman's rank correlation coefficient to see if promotional allowances as a percentage of gross gaming revenues have a positive or negative correlation to casino size. He finds a positive correlation in the 1980's but a negative correlation since then. The negative correlation shows smaller casinos may have to give more complimentary to attract customers. There may be further support of this in even more recent years. Borgata Hotel Casino & Spa is one of the largest properties in Atlantic City and for 2011 promotional allowances were 24.8% of gross revenue while a much smaller property like Resorts Casino Hotel gave 34.2% of gross revenue away as promotional allowances (New Jersey Department of Law and Public Safety, Division of Gaming Enforcement, 2012). The decrease in the percentage in larger casinos may be attributed to size, but may also be attributed to larger casinos being higher quality and attracting customers based on value not rewards.

There are two additional studies in which total revenue is an indicator for firm size. In one study of Atlantic City casinos in 2007, O'Donnell, Lee, and Roehl (2009) find that promotional allowances are negatively correlated to total revenue, although these results are not significant at the .05 level. These results conflict with Gu (2001) who finds a positive relationship between promotional allowances and total revenue, but these results are not significant either. Promotional allowances are not the main concern of either of these studies, instead the authors are analyzing economies of scale for all expense categories.

McGowan and Brown conduct the only known regression study of gaming companies and company wide promotional allowances (2009). The authors evaluate two models with promotional allowances as the independent variable in each for five casino companies individually. Gross revenue is the dependent variable in one model and gaming revenue is the dependent variable in the other. For all companies, both models show a highly significant correlation between promotional allowances and the dependent variables. This makes sense because for these casino firms promotional allowances are booked into gross revenue and backed out when calculating net revenue.

As promotional allowances increase, gross revenue will increase at least dollar for dollar. The study also finds that promotional allowances explain a significant amount of the variance in gross revenue and gaming revenue. This study looks at the activity for the entire gaming company though not individual properties.

The majority of research on promotional allowances in the casino industry is on direct mail offerings, which are a component of total promotional allowances. The amount of the direct mail offering casinos include in total promotional allowances is the amount given away for free. These studies evaluate the amount of redeemed direct mail offers and whether these affect a player's slot machine play. Three of these studies evaluate slot volume for the day the direct mail offer is redeemed (Lucas & Brewer, 2001; Lucas & Bowen, 2002; Lucas & Santos, 2003). Results of these studies show a positively significant increase in slot volume on the day of redemption. The increase in slot volume ranges from \$26.36 to \$32.76 for the three studies. This increase is in slot play not revenue. Using each study's estimated slot win percentage for the period, the gross slot revenue increase ranges from \$1.05 to \$1.95 for each \$1 increase in redeemed direct mail offers. Since the \$1 in direct mail is included in gross revenue the increase is between \$0.05 and \$0.95 over and above the direct mail amount.

Lucas, Dunn, and Singh (2005) evaluate the effect of a direct mail offer on a player's slot coin-in for a trip not just on the day they redeem the offer. Slot coin-in is the amount of money wagered in a slot machine and is often used as an indicator of slot volume. Results of the study show that players who receive a \$50 or \$100 free slot play coupon do not significantly increase their slot coin-in for the trip in which they receive the promotion. Quite the opposite is true for players who receive the \$50 in free play. These players significantly decrease their slot coin-in for that visit. For the customers who receive the \$100 in free slot play, while the results do not produce a significant effect, the effect is also negative, like the \$50 free slot play customers. It should be noted that results of both offers are only evaluated on slot coin-in and not on the effect on gross slot revenue. The win percentage for both groups is slightly lower when a customer is not given the free slot play incentive. There is no way to know if this decrease is due to the free play incentive or just normal fluctuations in customer play. These results also indicate that the profit of the promotions is negative since there is a decrease in slot coin-in.

### **Hypotheses**

Based on the short-term results previously discussed within the casino industry and other industries, there is support for a significant positive relationship between promotional allowances and revenue. Although some of the casino results are concerned with gaming volume and not revenue, Repetti (2011) proposes, by conducting a content analysis on all gaming related operational research, an increase in promotional allowances will significantly increase gross revenue. In addition, since promotional allowances are included in gross revenue, there should be a significant positive effect. If promotional allowances are driving business like intended, net revenue should also increase since the significant positive relationship between promotional allowances and gross revenue should be larger than the dollar for dollar increase. The following alternative hypotheses are proposed based on the previous research.

H1: An increase in total promotional allowances will increase gross revenue.

H2: An increase in total promotional allowances will increase net revenue.

While there has been some research on the effect of promotional allowances on revenue in casinos, there has been no empirical study on the effect on gross operating profit.

Although in some of the direct mail studies previously discussed, the authors make assumptions about the effect on gross operating profit (Lucas & Brewer, 2001; Lucas, Dunn & Singh, 2005). Due to the conflicting conclusions of these studies and the fact that profit is not evaluated for significance, no direction for the alternative hypothesis is proposed.

H3: An increase in total promotional allowances will significantly affect gross operating profit.

### **Data and Methodology**

Casino specific data is retrieved from the State of New Jersey's Division of Gaming Enforcement website, which for Atlantic City casinos is publicly available. Quarterly panel data is analyzed from first quarter 2002 to first quarter 2012. Quarterly data is used instead of monthly data because Atlantic City casinos do not report gross operating profit on a monthly basis and to be able to analyze hypothesis two, this is required and quarterly data is the smallest frequency reported. Quarterly data also evens out any changes in monthly revenue which may be due to hold percentage fluctuations due to the natural variations inherent in gaming and not volume changes. Data prior to 2002 is not analyzed because the state changed which transactions they classify as promotional allowances at the beginning of 2002. There are a total of 465 data points.

Three different models are analyzed using ordinary least squares regression. Each model has a different dependent variable that is considered within the operating managers' control. Dependent variables include gross revenue, net revenue, and gross operating profit. Testing different dependent variables allows the researcher and casino management to understand if the effect is different on revenue than it is on profit. Gross revenue consists of revenue from all operating departments including gaming, hotel, and food and beverage. Promotional allowances are included in gross revenue. Net revenue includes all sources of revenue, but excludes promotional allowances. Gross operating profit for Atlantic City casinos is all profits generated from operations but does not include items such as interest, depreciation, management fees, and income taxes. Gross operating profit in Atlantic City casinos is often called EBITDA or earnings before interest, taxes, depreciation, and amortization. Casino management is often held accountable to this number.

Promotional allowances is the independent variable of concern but a control variable for firm size is included to account for property differences that may alter the effects. Firm size is accounted for by casino square footage. Casino square footage is included as an indicator of firm size since gaming revenue in Atlantic City accounts for an average of 78% of total gross revenue over the study period. The high percentage of total revenue from gaming revenue may be an indication that the casino is the main driver of business in Atlantic City casinos. Casino square footage is only available on an annual basis, so the same square footage is used for each quarter within the year.

Dummy variables are included for each quarter to account for potential timing differences. A dummy variable is also included for the addition of gaming in Pennsylvania. The first casino opened on November 14, 2006 and additional casinos followed so the first quarter 2007 and beyond are coded as having legal gaming in Pennsylvania. Many gaming personnel believe the legalization of gaming in Pennsylvania has had a large negative impact on the Atlantic City market and this is seems to be supported by the fact that Pennsylvania surpassed Atlantic City in 2012 to become the second largest gaming market in the United States (Nguyen, 2013). Atlantic City casinos may have increased promotional allowances with these declining revenues to try and retain customers. Adding this as a dummy variable will help distinguish which

revenue changes are due to modification in promotional allowances and which are due to the legalization of gaming in Pennsylvania.

The regression equation used in this study is:

$$Y_i = \beta_0 + \beta_1(\text{Promo}) + \beta_2(\text{Size}) + \beta_3(\text{Penn}) + \beta_4(\text{2nd}) + \beta_5(\text{3rd}) + \beta_6(\text{4th}) + \varepsilon$$

Where:

Y = Gross Revenue, Net Revenue, or Gross Operating Profit (in thousands)

Promo = Promotional Allowances (in thousands)

Size = Casino square footage

Penn = Dummy variable for the opening of casinos in Pennsylvania coded as “1” for 1st quarter 2007 and after

2nd = Dummy variable coded as “1” for 2nd quarter data

3rd = Dummy variable coded as “1” for 3rd quarter data

4th = Dummy variable coded as “1” for 4th quarter data

$\varepsilon$  = Error term

Table 1 is the descriptive statistics for all non-dummy variables.

Table 1

*Descriptive Statistics*

	N	Min	Max	Mean	Std. Dev.
Gross Revenue*	465	18,865	302,395	122,840	55,167
Net Revenue*	465	14,382	239,921	94,434	44,606
Gross Operating Profit*	465	-10,895	76,235	22,238	18,450
Promotional Allowances*	465	4,483	62,474	28,406	11,306
Casino Square Foot	465	56,994	179,753	112,223	34,813

Note. \* in thousands of dollars

**Results**

The results of all models are examined for any violations of the assumptions of linear regression. Scatterplots of the predicted values of each dependent variable and the standardized residuals provide no evidence of nonlinearity or homoscedasticity. Linearity is also tested by evaluating promotional allowances against each dependent variable and there is no evidence of nonlinearity. Histograms of the standardized residuals and normal probability plots are analyzed for each model and there is no indication of a departure from a normal distribution. Variance inflation factors (VIF) are run for each model and no variables within any model are above 2.49. Since the most common cutoff to indicate multicollinearity is a VIF greater than 10, there is no indication of multicollinearity for these models (Hair, Black, Babin, & Anderson, 2010; Norušis, 2005). Correlation between promotional allowances and each dependent variable ranges from .831 to .947.

In all models, the second quarter is not significantly different than the first

quarter so this dummy variable is removed from all models before running final models. The third and fourth quarters are only significantly different than the first quarter for the gross operating profit model, so it is removed from the gross and net revenue models.

**Gross Revenue Model**

The final model is significant,  $F(3, 461) = 1,745.52, p < .0005$ , with 91.9% of the variance (adjusted  $R^2$ ) in gross revenue being accounted for by promotional allowances, casino square footage, and the Pennsylvania dummy variable. Table 2 summarizes the results of the linear regression analysis for the final model. Based on these results, hypothesis one is supported and for each \$1 increase in promotional allowances, gross revenue increases \$4.53. Also, larger casinos generate \$70 in gross revenue for every additional square footage of casino space. The legalization and opening on casinos in Pennsylvania greatly affected Atlantic City casinos with a decrease of \$16.9 million a quarter in gross revenue.

Table 2

*Regression Coefficients for Gross Revenue Model*

	B	Std. Error	t	Sig.
(Constant)	-4,985.66	2,479.65	-2.011	.045*
Promotional Allowances	4.53	.10	46.495	.000**
Square Footage	.07	.03	2.040	.042*
Pennsylvania Dummy	-16,875.67	1,509.25	-11.181	.029*

\*  $p < .05$ , two-tailed test; \*\*  $p < .05$ , one-tailed test

**Net Revenue Model**

The final model is significant,  $F(3, 461) = 1,087.97, p < .0005$ , with 87.5% of the variance (adjusted  $R^2$ ) in net revenue being accounted for by promotional allowances, casino square footage, and the Pennsylvania dummy variable. Table 3 summarizes the results of the linear regression analysis for the final model. Based on these results, hypothesis two is supported and for each \$1 increase in promotional allowances, net revenue increases \$3.53. Larger casinos generate \$70 in increased net revenue for every additional square footage of casino space. Atlantic City casinos had a decrease of \$16.9 million a quarter in net revenue once Pennsylvania casinos opened.

Table 3

*Regression Coefficients for Net Revenue Model*

	B	Std. Error	t	Sig.
(Constant)	-4,985.66	2,479.65	-2.011	.045*
Promotional Allowances	3.53	.10	46.495	.000**
Square Footage	.07	.03	2.040	.042*
Pennsylvania Dummy	-16,875.67	1,509.25	-11.181	.029*

\*  $p < .05$ , two-tailed test; \*\*  $p < .05$ , one-tailed test

## Gross Operating Profit Model

The final gross operating profit model is significant,  $F(5, 459) = 387.85$ ,  $p < .0005$ , with 80.7% of the variance (adjusted  $R^2$ ) being accounted for by promotional allowances, casino square footage, the Pennsylvania dummy variable, and the third and fourth quarter dummy variables. Table 4 summarizes the results of the linear regression analysis for the final model. Based on these results, hypothesis three is supported and for each \$1 increase in promotional allowances, gross operating profit increases \$1.29. Also, larger casinos generate \$40 more in gross operating profit per additional casino square footage. The addition of casinos in Pennsylvania decreases Atlantic City casinos' gross operating profit \$12.2 million per quarter. The third quarter has significantly higher gross operating profit of \$2.1 million as compared to the first quarter. The fourth quarter though has significantly lower profits than the first quarter. Casino gross operating profits are \$4.2 million lower in the fourth quarter.

Table 4

*Regression Coefficients for Gross Operating Profit Model*

	B	Std. Error	t	Sig.
(Constant)	-11,941.19	1,330.05	-8.978	.000*
Promotional Allowances	1.29	.05	24.620	.000*
Square Footage	.04	.02	2.153	.032*
Pennsylvania Dummy	-12,244.13	778.44	-15.729	.000*
Third Quarter	2,103.17	955.82	2.200	.028*
Fourth Quarter	-4,172.23	926.23	-4.505	.000*

\*  $p < .05$ , two-tailed test; \*\*  $p < .05$ , one-tailed test

## Discussion

Results of this study support both alternative hypotheses. Gross revenue, net revenue, and gross operating profit all increase significantly with an increase in promotional allowances. For every \$1 increase in promotional allowances, gross revenues increase \$4.53 and net revenues increase \$3.53. Since all promotional allowances in Atlantic City casinos are booked into gross revenue and backed out to compute net revenue, this \$1 difference between the two is logical. The difference is exactly accounted for by the amount of the promotional allowances. This finding supports previous gaming studies conducted on gross revenue (Lucas & Brewer, 2001; Lucas & Bowen, 2002; Lucas & Santos, 2003; McGowan & Brown, 2009).

Most of the previous studies evaluate the increase in slot play only. This study allows an analysis of all revenue. As customers redeem promotional allowances they may be spending money in more areas than just the one in which they use the complimentary. When marketing wants to run a new promotion, they should do a cost/benefit analysis. In this type of analysis, it is typical to include indirect revenue increases due to the promotion. Generally finance or marketing personnel estimate what this indirect revenue is based on existing spend. With these results casino management has a better estimate of the total increase in revenue. This is the only study known which evaluates the effect of promotional allowances on total direct and indirect revenue so management can make a decision that while the promotion may not be increasing gaming



revenue it may be increasing total revenue which is an indication that the promotion is successful.

This is the first known study which tests the relationship between promotional allowances and gross operating profit. Results show that a \$1 increase in promotional allowances leads to an increase in gross operating profits of \$1.29. If a casino is increasing its net revenue \$3.53 and increasing gross operating profit \$1.29, casino management is keeping 36.5% of the additional revenue they earn. During the period analyzed, Atlantic City casinos' gross operating profits were 23.5% of net revenue. If management is earning 36.5% of the revenue due to an increase in promotional allowances, they are retaining more of the additional revenue than their average. This is most likely attributed to the high level of fixed costs in the slot department. As slot revenue increases, more for each dollar is retained by the casino since they do not need to increase staff. Management should not just continue to increase promotional allowances based on these results though. The larger percentage of revenue being retained by the casinos will only continue until management needs to increase the level of staffing which will occur since the fixed personnel can only handle so much in additional revenue before more staff will need to be added.

Most of the previous studies on casino promotions only evaluate a particular promotion (Lucas & Brewer, 2001; Lucas & Bowen, 2002; Lucas & Santos, 2003; Lucas, Dunn, & Singh, 2005). In the gaming industry it is not uncommon to have promotions or amenities that are loss leaders in the hopes that customers will come in to take advantage of those and spend more in total. Loss leaders are products that are sold at or below cost or completely given away for free to promote customers to spend more time or money in other areas than they would without that additional product. While many companies Las Vegas Sands and Caesars Entertainment are reevaluating their individual promotional allowances and loss leader departments and trying to convert them to profit centers, having some loss leaders may still be beneficial to casinos (Las Vegas Vegas.com, 2012; Stutz, 2011). This study evaluates promotional allowances as a whole instead of individual promotions and finds that overall Atlantic City marketing plans for complimentary have a significant positive effect on gross revenue, net revenue and gross operating profit. While there may be loss leaders promotions within the list of complimentary, the overall marketing plan is successful. Casino management can now look at individual promotional allowances and evaluate the loss leaders by making one change at a time and testing the effect of that individual change.

Casino management often has heated discussions on whether marketing promotions are beneficial and if so to what extent they are increasing revenue and not just moving money from one event to another or from one day to another. These results give Atlantic City finance and marketing management an empirical answer to that question or a least a reasonable starting point for discussion.

### **Limitations and Recommendations for Further Research**

Like any research, this study has limitations. One limitation of this study is that quarterly data is analyzed. If daily or monthly information is used, different results may occur. Fluctuations may be noticed that are hidden in the quarterly data. If daily information is analyzed care should be taken in interpreting the results. Customers may be spending the same amount of money over a trip or a month but spending more on the day they used the complimentary and less on other days. Customers may also be spending less on the day they used the complimentary but more other days. Further research on monthly information will help adjust for

this movement of revenue. Also if casinos give customers complimentary based on all spend and track this information by customer, additional research could be done by customer by trip as long as all revenue the customer generates is captured and not just the gaming revenue.

Using quarterly data also has a limitation in that some promotions may return value over longer periods of time than just a quarter. Similar to using daily information, promotions that hope to bring a longer term increase in customer spend may not be able to be study without analyzing individual customers over longer periods that just the quarter.

Another limitation is that the dataset only includes Atlantic City casinos so it may not be generalizable to other jurisdictions and customer bases. The study could be replicated in other jurisdictions to further support the results in similar jurisdictions or to support or find differing results in jurisdictions such as Las Vegas which has a different customer base than Atlantic City.

This study could be further expanded to include additional variables to take into account the U.S. recession that occurred between 2007 and 2009. Management's reaction to the recession could have caused a change in promotional allowances that did not equate with the same change in revenue. A future study can also be conducted to analyze individual properties effectiveness with promotional allowances instead of the entire market as a whole.

Future research could also be conducted to understand the causal relationship between promotional allowances and the various dependent variables. Since regression does not explain causation just that a relationship exists, another method could be employed to understand if promotional allowances cause an increase in revenue and gross operating profit. Additional variables could be added and structural equation modeling could be run to potentially find a casual relationship.

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