Pricing Strategy in Pricing Simulation: Universal Rental Car

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ABSTRACT

Using the data provided in the Universal Rental Car simulation, this report summarized the data, analysis, strategy used, and the simulation run process of the Universal Car Rental Simulation.

The car rental market given in the simulation is an Oligopoly market in Florida, the ultimate goal is to maximize cumulative profit in 12 months by setting prices monthly. This paper summarized the market and data given and introduced the premium pricing strategy used which achieved $61.9 million cumulative profit. The report also provided a detailed analysis of market features, explained the reason why premium pricing is adopted and provided a recommendation on possible improvements and situation-associated ideas in a real-life situation.

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INTRODUCTION

In The Pricing Simulation - Universal Rental Car (the simulation) from Harvard Business, players have assumed the role of a district manager who is responsible for rental car price setting at Universal (a Florida rental car company). Florida rental car market is an Oligopoly market having two companies: Universal and its Competitor. It is divided into 3 segments based on geographic location: Tampa, Orlando and Miami. This market also contains some features: weekday and weekend; business customers and leisure customers. Rental car price is set disregarding the business use and leisure use features but is set separately on weekdays and weekends across three different cities (6 individual prices in total) once per month. Fleet size could be changed every 3 months with a maximum fleet size of 38,300 across Florida. The goal of the simulation is to maximize the cumulative profit for Universal in 12 months.

As there are many factors, which include but are not limited to market demand, market structure, customer behavior, fleet size, capacity utilization, seasonality and the Competitor's reaction, affecting the decision of pricing strategy, dynamic pricing has become a necessary competitive method. By analyzing the abovementioned historical data given in the simulation, the premium pricing strategy is chosen to achieve the goal of maximizing profit and achieved a generous cumulative profit of $61.9 million.

DATA

The simulation provides monthly recorded data in the following sections: Price History, Market Demand, Unit sales, Fleet size, Capacity Utilization, Market Research and Net Income. All data are recorded monthly.

Price History records Universal's and the competitor's historical prices on both weekdays and weekends for each city.

Market Demand records the total demand (number of intended orders) of the rental car, total sales (number of total orders) of rental car and number of unfilled orders by customers in three different cities (Tampa, Orlando and Miami) and Florida region.

Market Share records the overall market share for both Universal and the competitor in three different cities (Tampa, Orlando and Miami).

Unit Sales records the historical number of sales of Universal and the competitor on weekdays and weekends in three different cities (Tampa, Orlando and Miami) and the Florida region.

Fleet Size records Universal's number of cars available for rent and daily weekday and weekend orders in three different cities (Tampa, Orlando and Miami) and the Florida region.

Capacity Utilization is calculated by dividing the Universal fulfilled order number by fleet size. The maximum is 100% (unfilled demand is superseded).

Net income shows the monthly financial statement of each city and Florida as a whole market.

ANALYSIS OF DATA

To find a suitable strategy in the simulation, it is important to analyze the market first. The analysis below is based on the historical data from July to October.

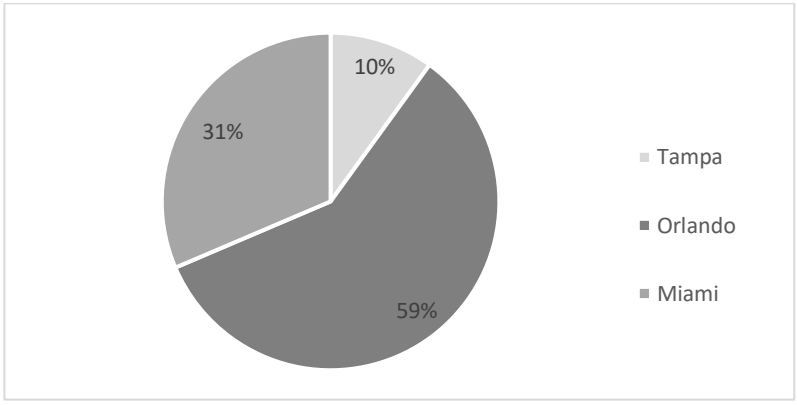
Market Demand

- Market Demand by Cities

From the simulation's historical data, there was a 2.12 million rental car demand in October across Florida which includes 3 cities, Tampa, Orlando and Miami.

Chart 1. indicates the percentage of market share by three cities in Florida in October. Among the three cities in Florida, Orlando is the largest rental car market holding 59% of the total market share as it is a high-traffic area. Tampa has the smallest market size, it only holds a 10% market share. The rest 31% is held by Miami. In this case, the most important price-setting is in Orlando to achieve profit maximization.

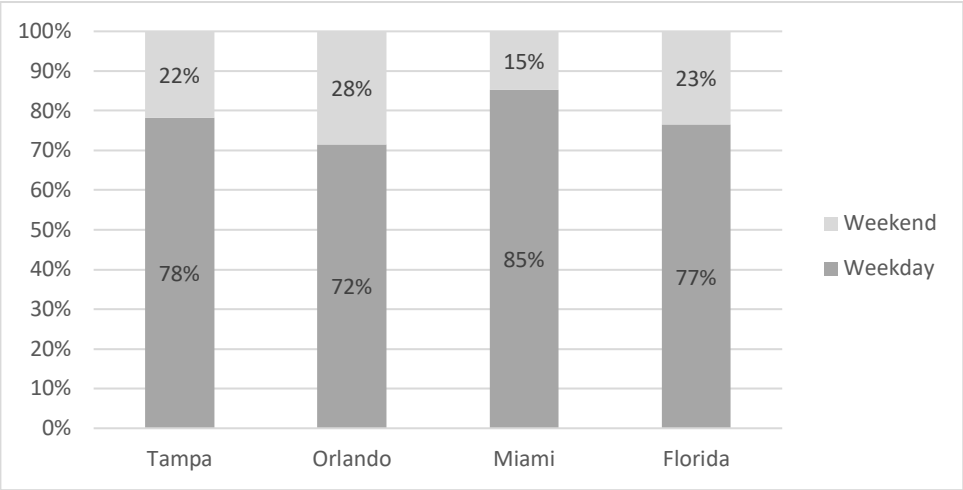
Chart 1. Market Share by Three Cities



- Market Demand by Weekday and Weekend

Chart 2 indicates the percentage of market demand by weekday and weekend in Florida in October. The market demand for weekdays is higher than the weekend in all three cities. In Florida rental car market, 77% of demand is on the weekday, which is much higher than the 23% demand on the weekend. In Orlando, there is 28% of rental car demand on the weekend, which is the highest weekend demand percentage across the three cities. The 15% weekend demand percentage in Miami is the lowest weekend demand percentage of these three cities.

Chart 2. Market Demand by Weekday and Weekend

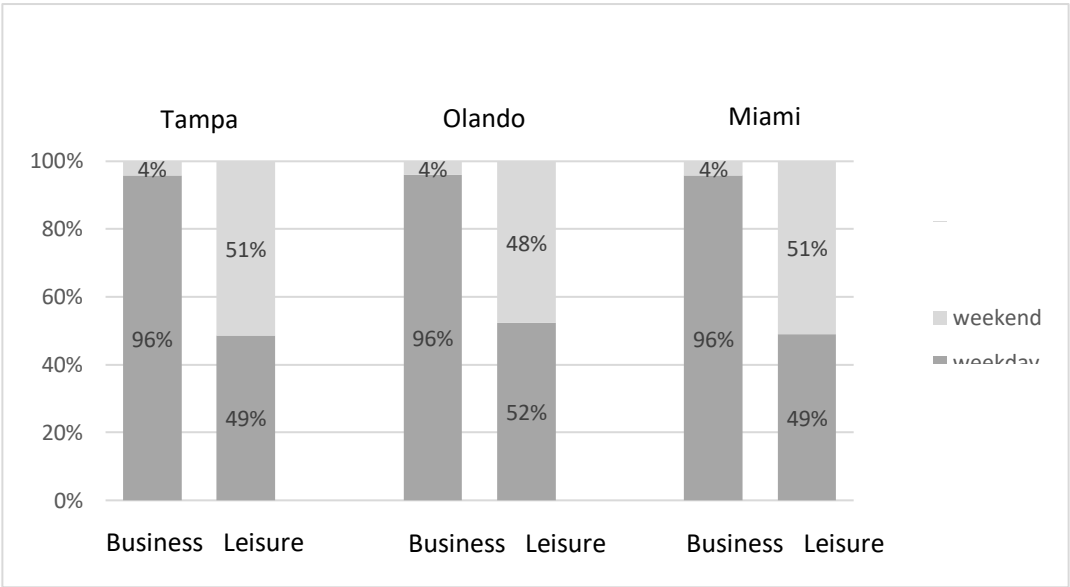


- Market Demand by Business and Leisure

There are two kinds of customers in Florida rental car market, which are classified as business customers and leisure customers. It is important to analyze the market demand regarding business/ leisure features because the price sensitivity for these two types of customers is different. Price sensitivity will be explained in the later section.

Chart 3 indicates the percentage of business customers and leisure customers on weekdays and weekends in each city. There are about 96% of total business customers, and around 50% of the total leisure customer tend to rent a car on the weekday for each city. So The rental car time preference of both business and leisure customers in 3 different cities are almost the same.

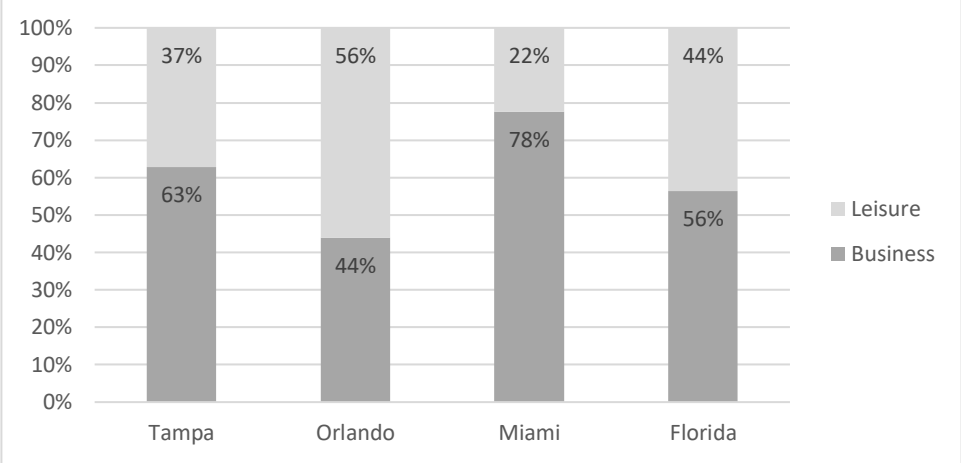
Chart 3. The Percentage of Weekday and Weekend Demand Allocation



It is clear that the leisure demand on the weekend is much higher and the business demand for weekdays is higher. Combining this and the abovementioned analysis, the reason why the coefficient in Breakeven Calculator is the same across three cities only with the difference on weekdays and weekends is clear. It is because the business/ leisure featured demand percentages across cities are similar, and business customers have less sensitivity to price than leisure customers.

Chart 4 indicates the percentage of business customers and leisure customers in each city and Florida region. In Florida rental car market, 56% of customers are business customers, which is slightly higher than the leisure customer 44%. The number of business customers is larger compared to leisure customers in Tampa and Miami. But the Orlando market has a large number of leisure customers, which is even higher than the business customer. Therefore, price sensitivity is the highest in the Orlando car rental market. The weekday and weekend prices charged in Orlando should be lower. In Miami, there is a greater number of business customers than leisure customers because Miami is designated as a business area. Therefore, the whole market in Miami has lower price sensitivity to price change.

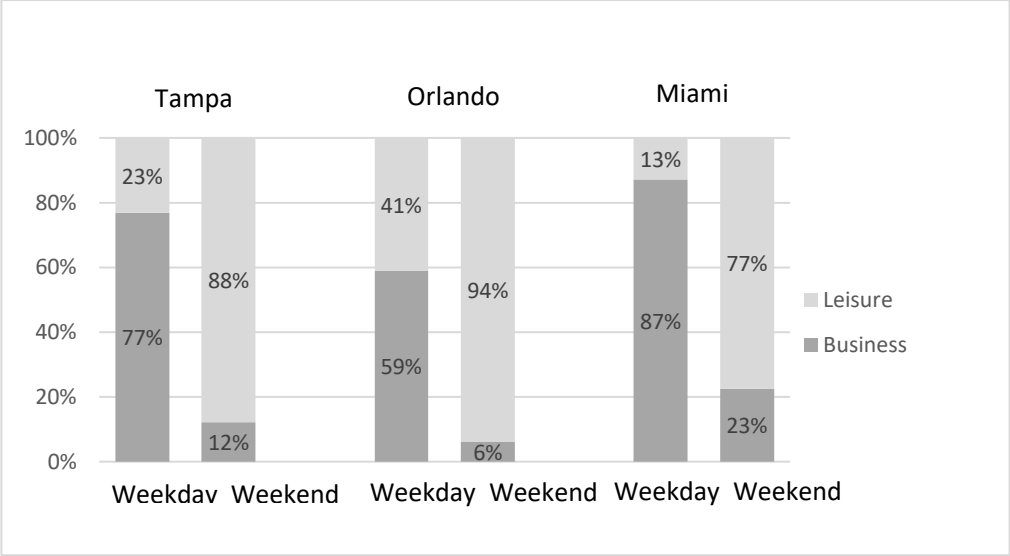
Chart 4. Market Demand by Business and Leisure



Three markets are different in the composition of customers. Chart 5 indicates the percentage of business customers and leisure customers on weekdays and weekends in each city. It is clear that the Miami market is the least price-sensitive market as the percentage of leisure customers is the lowest on both weekdays and weekends. This indicates that the Miami market's purchasing power is the highest among the three cities. Compared to other cities, the price sensitivity in Orlando is the highest on both weekday and weekend markets. Therefore, the

rental price for both weekdays and weekends in Orlando should be the lowest in these three markets.

Chart 5. The Percentage of Business and Leisure Demand Allocation



Historical Price Analysis

Table 1 indicates the historical rental price from July to October on weekdays and weekends in each city. It shows the rental car price is higher on weekdays than on weekends in all three cities. The average historical rental price for both weekdays and weekends in Tampa is higher than in other cities. Both average weekday and weekend prices in Orlando are the lowest in the three cities because it is the most price-sensitive market.

Table 1. Universal Historical Rental Price

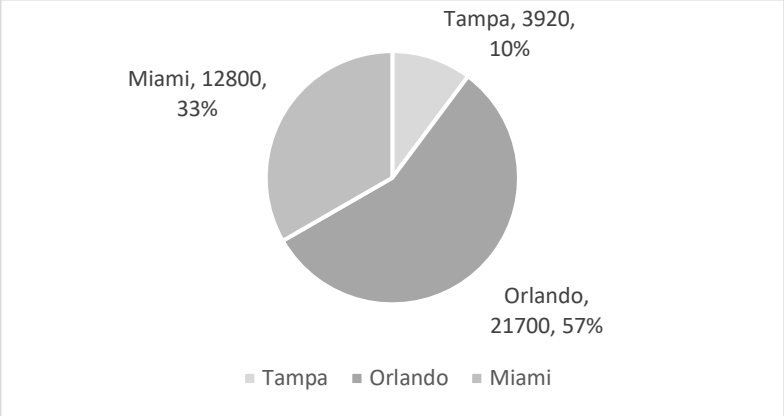
	Tampa		Orlando		Miami	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Jul	$49	$41	$45	$37	$45	$36
Aug	$49	$41	$45	$35	$45	$36
Sep	$49	$41	$45	$33	$45	$36
Oct	$43	$32	$41	$33	$46	$36
Average	$48	$39	$44	$35	$45	$36

The variable costs, vehicle inventory costs and fixed costs per vehicle per month in Miami is the highest compared to Orlando and Tampa. Therefore it is relatively hard to make a high profit in Miami considering the high operating cost.

Economy of Scale

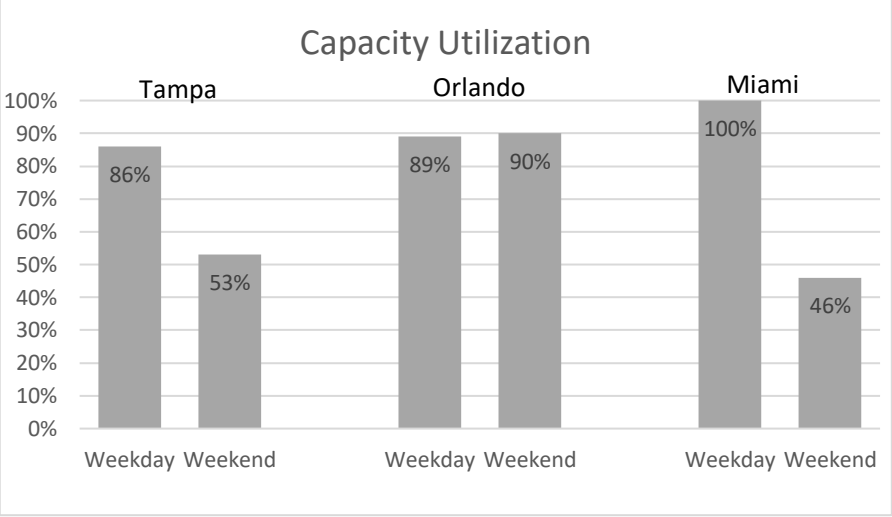
By analyzing the historical fleet size, it is obvious that Universal has been allocating the fleet amount to fulfill 3 cities' demands according to the market size. Chart 6 indicates the percentage of fleet size in each city.

Chart 6. Percentage Of Fleet Size In Each City



As shown from historical data, the demand in the Miami market is higher than supply on the weekday in some months, which means there are unfilled orders (in July and October). In the other city Orlando, there is an obviously higher capacity utilization on weekends than in other cities because of the higher weekend demand.

Chart 7. Capacity Utilization in Each City



- Seasonality

By analyzing the historical demand from July to October, it is founded that the demand for a rental car in each month is different, but there is no seasonality trend found because there is neither sufficient data trend nor sufficient evidence. To forecast future demand, there will be a higher leisure demand for Christmas in December, but the market demand can not be forecasted accurately.

Competitor Behavior:

It is important to notice the competitor's response while pricing especially when there is only one competitor in this simulation holding 51% of the market share in October.

Looking at the historical price in the simulation from July to October across three different cities, it is revealed that the competitor always sets a lower price in the rental car market. Table 2 shows the price difference between the competitor and Universal from July to Oct in each city. The price difference is calculated by the competitor's rental car price minus Universal's price. It shows that the competitor always had a lower price on both weekdays and weekends. As there are only 4 months of historical data and there are no trends shown in the price difference, the competitor's pricing strategy is unknown. However, there is a possibility that the competitor's main goal is not to maximize profit.

Table2. Price Difference Between the competitor and Universal

	Tampa		Orlando		Miami	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Jul	-1	-7	-1	0	0	-3
Aug	-4	-10	-4	-2	1	-3
Sep	-4	-12	-6	-4	-2	-3
Oct	1	-4	-3	-1	-3	-3

Table 3. shows the market share of both the competitor and Universal. It could be founded that the competitor always holds about half of the market share in each city. The competitor market share in Tampa is the highest. There is no exact evidence showing the ultimate goal of the competitor. But the competitor's market share in Tampa increased from 57% to 59% then dropped to 56%; the market share in Orlando increased from 50% to 54% then dropped to 51%;

the market share in Miami dropped from 47% to 45% then increased to 50%. It is reasonable to anticipate that the competitor's goal is to keep its market share in the range of 50%-56%.

Table 3. Market Share percentage of the Competitor and Universal

	Tampa		Orlando		Miami	
	Comp	Univ	Comp	Univ	Comp	Univ
Jul	57%	43%	50%	50%	47%	53%
Aug	59%	41%	52%	48%	45%	55%
Sep	59%	41%	54%	46%	46%	54%
Oct	56%	44%	51%	49%	50%	50%

Pricing Strategy

There are a lot of pricing strategies that could be used by a business with its developing goal. In this simulation, the purpose is to maximize cumulative profit for Universal. As there are only 11 months to change price and the total fleet size is not able to be increased, the market share is not a fundamentally important factor to focus. The relationship between profit and market share is unclear in this simulation, the increase in market share may gain profit while it is possible to have negative profit growth. This means lowering the price to gain more market share is possible to result in negative financial growth. Furthermore, by analyzing the historical data, the goal of the competitor might be competing for a specific market share range. This means it is relatively safe to set a higher price as setting a lower price would lead to market share competition and even a price war. Therefore, the premium pricing strategy is chosen to be used. The premium price strategy is to set a higher price and take the risk of losing market share. As the competitor rarely changes their price and shows the intention to compete for market share in the historical period, setting a higher price will possibly gain more profit.

Price Setting, Adjusting and Final Result

To maximize the profit, the price is set higher than the competitor's price based on an analysis of the historical price in each city. The rental price is higher on the weekday as the major demand is from business customers, and the rental price is lower on the weekend as the major demand is from leisure customers. The price sensitivity of demand was taken into consideration

when setting the price. Both weekday and weekend price in Orlando is the lowest because it is the most price-sensitive market.

Since Universal's competitor set lower pricing with an unclear business goal (with a possibility to gain market share), customers would possibly choose to rent a car from the competitor with a lower price first. The rental price on both weekdays and weekends in each city is adjusted each month by taking into account: monthly demand, unfilled orders, capacity utilization, etc. without compromising profitability. Fleet sizes are reduced and shifted to achieve higher fleet utilization.

It is important to note that changing strategy in the simulation according to the competitor's behavior is highly possible at the initial stage and the ongoing stage. However, the competitor did not change their price when Universal set a higher price, and Universal's profit is showing a growing trend after setting a higher price. This phenomenon indicates that the premium pricing strategy is effective in gaining profit and this is the reason why the premium pricing strategy is not changed in the simulation.

Chart 8 indicates the Universal car rental's cumulative pre-tax profit changes in months. After the run of the simulation, The Universal rental car business has a Lower market share and unit sales but a much higher cumulative profit. The cumulative profit is $61.9 million, which is 20.6 times higher than the cumulative profit of $3.0 million in October. The final market share is 40.8%, which is decreased by 8% from October's record. The cumulative unit sales are 12.4 million, and capacity utilization reached 80%.

Chart 8. the Universal Rental Car Cumulative Profit Changed in Months

CONCLUSION AND ASSOCIATED THINKING

In conclusion, this paper analyzed the historical data from the simulation and explained the premium pricing strategy utilized to attempt the goal of profit maximization. The result suggests that the premium pricing strategy is successful as it achieved a $61.9 million cumulative profit which is 20.6 times higher than the cumulative profit of $3.0 million in historical data.

The pricing strategy used in this simulation is only suitable in this scenario with many constraints. In the real-world case, many other factors may affect the pricing strategy to achieve profit maximization. For example, the number of competitor(s), the possibility of putting more cars in use, the difference in service quality among competitors, the price of each company might differ not only on weekdays and weekends but also on holidays and so on. Furthermore, there are many other ways to capture market share other than dropping price, for example, the company can offer discount prices depending on the rental number of a customer, can publish a more effective advertisement on various media and focus on improving the service quality.

Moreover, there are only 12 months in the simulation, and the pricing strategy used is to maximize profit. But in the long run, the firm should consider the competition environment, and the core competition force and not increase prices often, especially in large percentage change. The pricing intention should not only be profit maximization but also the goal of a certain market share retained. The business should find a balance point between gaining profit and market share. Because market share is important for business growth, maximizing business profit without controlling market demand, especially in the service industry might lead the business even if the industry has a short business life. In conclusion, maximizing profit is the final goal of a business, the strategy or method to achieve this goal is numerous and definitely should not be limited to increasing the price.