

## Improved Variable Pricing for a Major League Baseball Team

*Secretariat evaluated a major league baseball team’s variable pricing strategy and recommended improvements to increase revenue, maximize attendance, and improve the fan experience of buying tickets.*

### SUMMARY

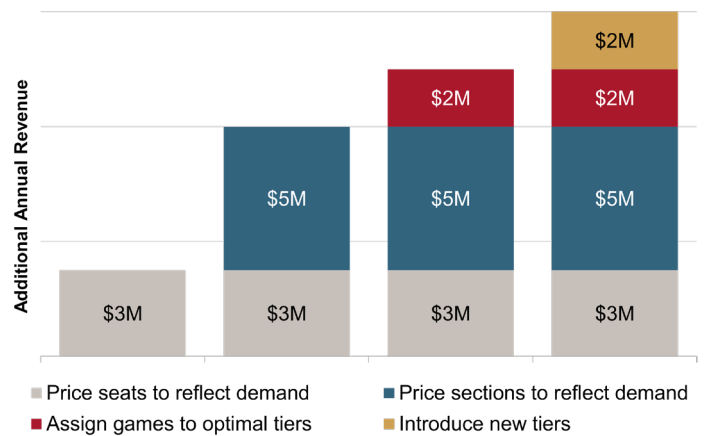
Secretariat evaluated a major league baseball team’s variable pricing strategy and recommended improvements. The team’s objectives were to increase revenue, maximize attendance, and improve the fan experience of buying tickets. We analyzed the team’s historical primary and secondary ticket sales data, then presented findings and an approach to variable pricing that resulted in:

- Millions of dollars of potential additional revenue (see Figure 1);
- Ticket prices based on quantitative demand forecasts;
- Improved utilization of low-demand tickets and a reduction in unsold inventory; and
- More efficient pricing that enables fans to avoid secondary market fees and markups.

### TEAM’S EXISTING VARIABLE PRICING STRATEGY

The team’s existing strategy was to (1) evenly divide 81 home games into a number of pricing tiers based on the team’s qualitative assessment of demand for each individual game, and (2) divide all of the tickets available for each game into several pricing sections based on a qualitative assessment of demand and the layout of seats in the stadium. The team set prices based on historical prices and trends. They acknowledged that their current approach may result in inefficient pricing and a disparity between prices and demand.

### Potential Gains from Improved Pricing



**Figure 1** The revenue gains attributable to four distinct opportunities discussed in this project summary.

### CHALLENGES DUE TO INEFFICIENT PRICING

Inefficient pricing creates multiple challenges for teams and their fans. First, overpriced tickets often go unsold, resulting in empty seats and suboptimal giveaways. Second, underpriced tickets are often captured by brokers who force fans to repurchase at high markups on the secondary market. In addition, StubHub’s buyer fees (10%) and seller fees (15%) create a price distortion on the secondary market, further increasing prices for fans. See Figure 2.

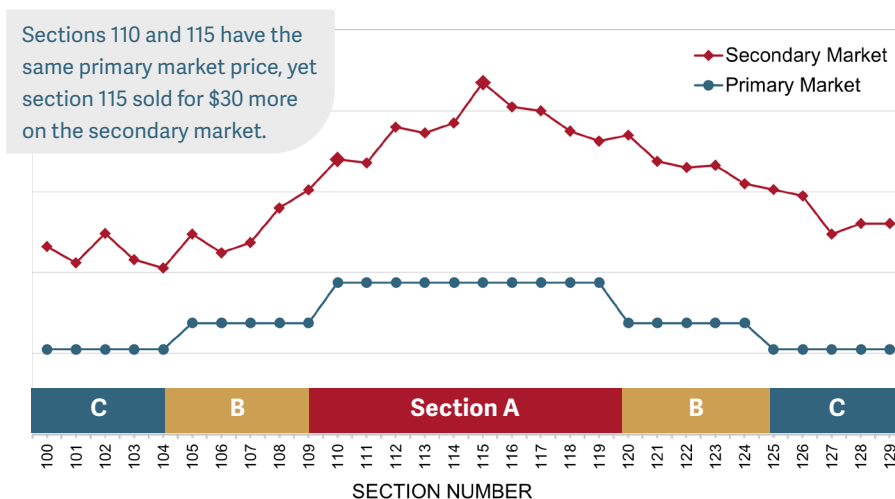
## OPPORTUNITIES FOR IMPROVEMENT

Secretariat identified four distinct opportunities to improve prices so that they better reflect demand.

**Set Prices for Seats to Reflect Demand.** We identified specific seats within sections of the stadium where primary market prices could be improved to better reflect demand. In particular, seats closer to home plate exhibit higher demand than is reflected in primary prices. See Figure 3. At the extreme, the difference in secondary market prices between numbered sections 110 and 115 is over \$30 per ticket, yet these sections have the same primary market price. With 3 million tickets available per season, small pricing improvements can make a big difference – for example, a mere \$1 improvement on each seat translates to over \$3 million in additional revenue.

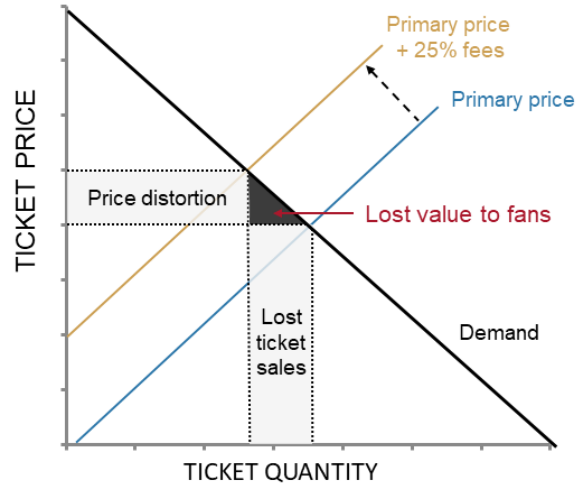
**Set Prices for Sections to Reflect Demand.** We identified specific seats within sections of the stadium where primary market prices could be improved to better reflect demand. In particular, seats closer to home plate exhibit higher demand than is reflected in primary prices. See Figure 3. At the extreme, the difference in secondary market prices between numbered sections 110 and 115 is over \$30 per ticket, yet these sections have the same primary market price. With 3 million tickets available per season, small pricing improvements can make a big differ-

## Demand for Seats within Pricing Sections



**Figure 3** Secondary market prices relative to primary market prices for each numbered section within pricing sections A, B, and C. Section 115 is in the middle of section A, directly behind home plate.

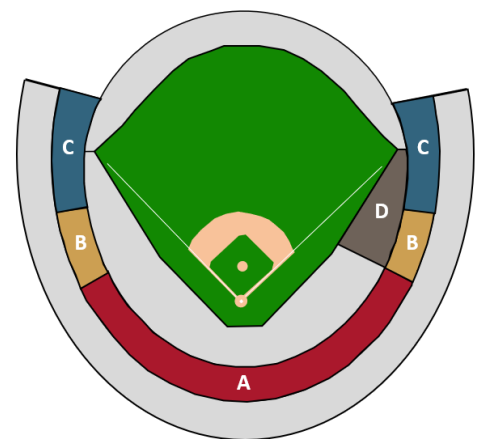
## Distortion from Secondary Market Fees



**Figure 2** The distortion created by secondary market fees. The 25% combined buyer and seller fees raise transaction costs, creating a price distortion, lost value to fans, and lost ticket sales.

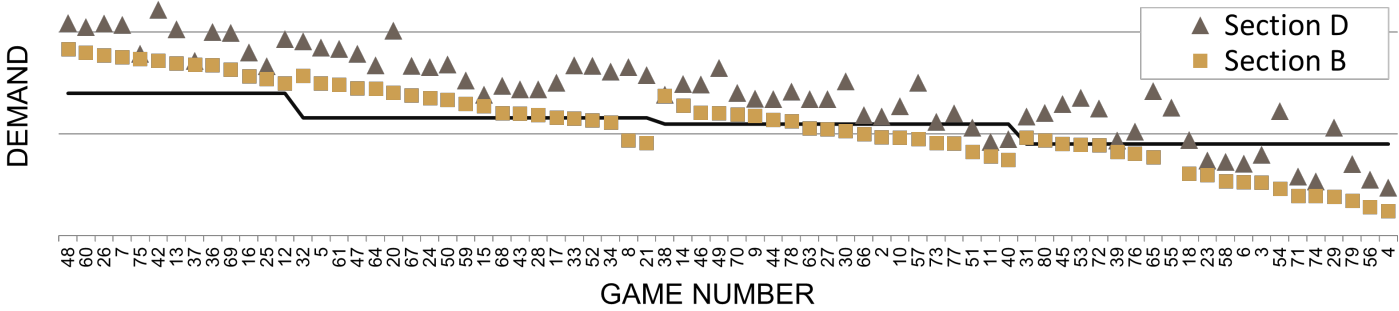
ence – for example, a mere \$1 improvement on each seat translates to over \$3 million in additional revenue.

**Assign Each Game to the Optimal Tier.** We identified a large opportunity to improve pricing efficiency by accurately forecasting demand and assigning each game to the optimal tier. Based on the stadium capacity and price differences in tiers, reassigning one game to its optimal tier represents a \$200,000 opportunity. Optimally assigning ten additional games represents an opportunity of \$2 million per season. See Figure 5.



Pricing sections discussed in this project summary

## Demand for Sections B and D



**Figure 4** Average secondary prices compared to primary prices in pricing sections B and D for individual games within a single season. Sections B and D had the same primary market prices, yet section D consistently exhibited higher demand.

**Introduce More Tiers for Games.** We identified an opportunity to increase efficiency by introducing more tiers to account for the variation in demand. As one example, We proposed a new tier for the top five games with an average price increase of \$10. See Figures 5 and 7. A \$10 average price increase on all tickets in the stadium for five games represents an opportunity of over \$2 million per season.

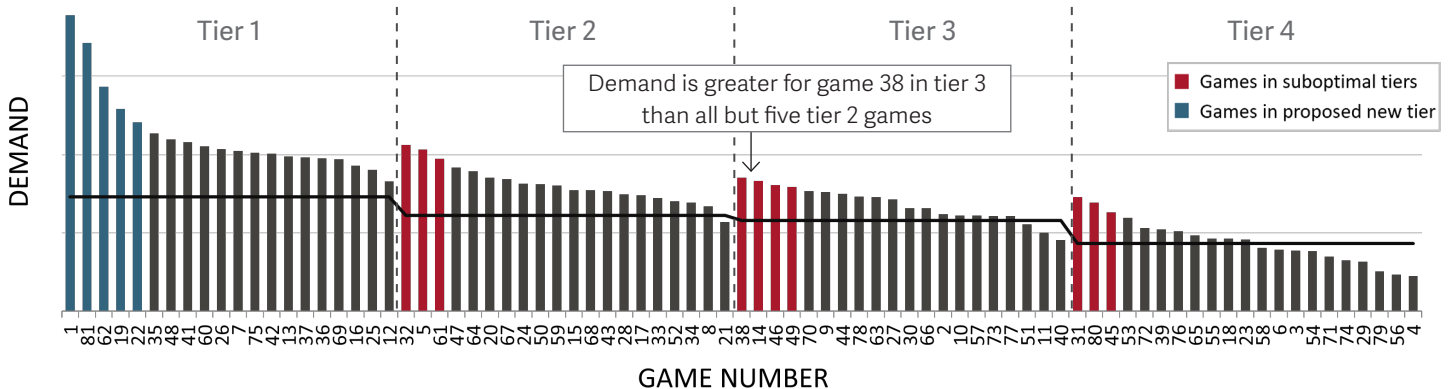
## SECRETARIAT'S METHODOLOGY TO IMPROVE PRICING

Successful pricing improvement in sports can be challenging because it requires rigorous quantitative analysis and a thoughtful consideration of potential fan responses. Secretariat develops customized strategies and tactics to improve prices based on each team's unique objectives and circumstances. We recognize the

challenges that professional sports teams face when setting prices, including intense scrutiny from the media and fans. Secretariat's methodology to improve primary ticket prices begins with a thoughtful analysis of the team's objectives. We develop predictive models that incorporate data on opponent, timing, and external factors such as other local sporting events. We forecast demand for games and seats, identifies clusters of tickets with similar demand, assigns games to tiers and seats to pricing sections, and determines prices based on a combination of forecasted demand and team objectives. See Figures 6 and 7.

Maintaining positive fan and media perception is essential for sports teams. Secretariat proposes novel mechanisms to implement price changes and effectively communicate to the public. For example, (1) combine

## Variation in Demand by Game and Tier



**Figure 5** Demand relative to primary price for each game during a season, sorted by tier, then by demand. If game assignment to tiers were perfect, the bars would be descending from left to right. Each bar that is not sorted in descending order represents an opportunity to assign that game to a more optimal tier. The bars in red show ten examples of games in suboptimal tiers.

low-demand tickets with promotional activities, (2) implement price changes in the form of fees and service charges, and (3) justify overall price increases by highlighting investment in stadium technology and infrastructure that improves the fan experience.

Secretariat’s methodology will enable the team to set improved prices for 2016 tickets and accomplish its three objectives: increasing revenue, maximizing attendance, and improving the fan experience of buying tickets. Figure 7 illustrates the results of one component of Secretariat’s methodology, where each game has been assigned to an optimal tier based on forecasted demand. We implement a similar process to assign seats to pricing sections and determine improved prices for each section.

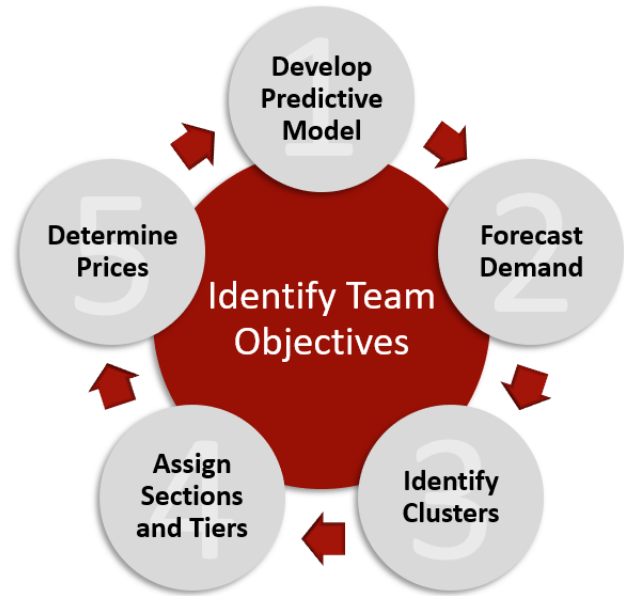


Figure 6 Variable Pricing Methodology

### Assign Prices Based on Demand Forecasts

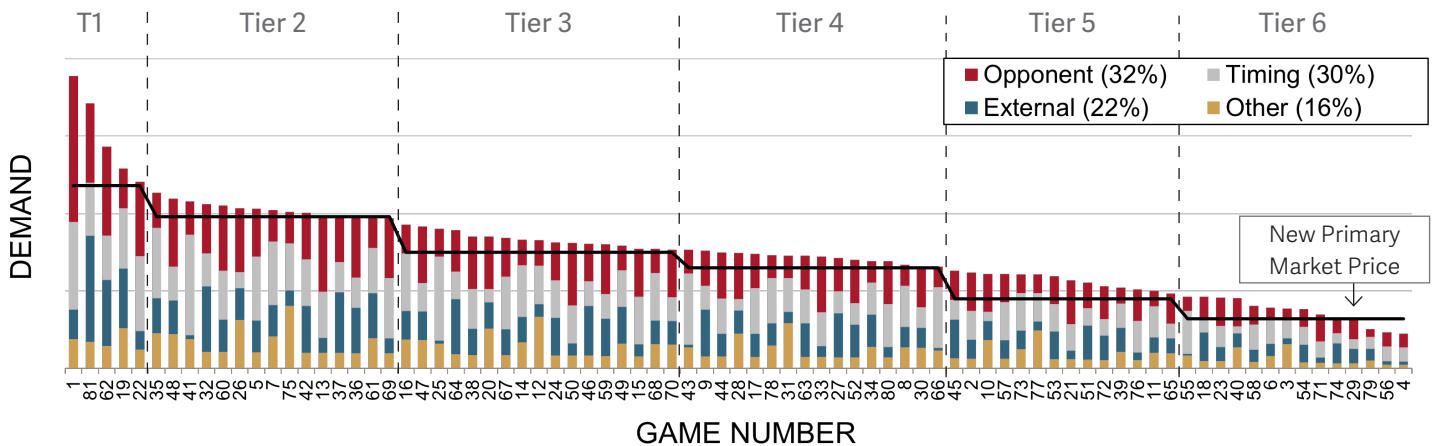


Figure 7 Forecasted demand and tier assignment based on Secretariat’s variable pricing methodology.

All figures described herein are for illustrative purposes only and have been altered to maintain client confidentiality.

## We would like to hear from you

Whether you are interested in speaking to one of our experts or learning more about our exciting careers, we look forward to hearing from you.

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