

## **Analytics to Inform Name Your Own Price Reserve Setting**

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### **ABSTRACT**

ScoreBig.com has a diverse array of information available to it to price inventory. The Name Your Own Price format allows insight into not only the binary information usually available for pricing but also an amount the buyer is willing to pay. This essential aspect of the ScoreBig site has meant that analytics around pricing data has been a key focus of the business from the very beginning. This paper discusses the analytics that are done and provides an example of analytics around Major League Baseball pricing.

### **INTRODUCTION**

In the world of pricing the challenge is always to set the price to capture the maximum revenue – that is not so high that potential customers walk away, and not so low as to leave money on the table. On ScoreBig.com we sell ticket to live events – sports, concerts & theatre and we do so with a model that allows our customers to name their own price for the tickets. This naming of a price by the consumer adds important information to us on what they are willing to pay. We use this and many other sources of pricing information to set our reserve price. In this paper I will describe our business model and why we use a name your own price structure. I will also outline the many sources of data we have available to us to make pricing decisions. I will then discuss some of the analytics we use to determine our reserve prices.

### **THE SCOREBIG BUSINESS MODEL**

The ScoreBig business model is to provide a channel for liquidating unsold inventory for live event providers while not broadcasting a brand-damaging sale price. When daily deal providers like Groupon or Amazon Local sent out 50 % or more off regular price deals to major league sports teams or major music shows it is hard to maintain a brand image of a highly desirable event worth the full price cost of the tickets. However, the truth is that 40% of live event inventory goes unsold. Thus there is a big problem, spanning most teams, shows & performers that requires a solution. Our solution addresses the problem in a few ways. First we do not publishing either a price or a quantity of tickets available. Next our customers need to choose an area of the stadium to sit in and be willing to sit anywhere in that area. Finally the customer has to do some work – they need to name their own price for the tickets. We then compare that price to the reserve price we've set in our system for that event and area of the stadium. If the price is above reserve we accept the offer, if it is below we will either counter offer or decline. If the offer is declined the customer can come back in 24 hours to rebid on that event and section of the stadium. We liken ourselves to the outlet mall for live events – you may have to be flexible on what you're buying and do a little work, but the payoff is often great seats at really low prices.

### **DATA FOR PRICING**

The central element of our site is a reserve price, set for all inventory over all events and seat ratings. That reserve price is set by a combination of algorithms within our system and manual overrides. The algorithms within our system consider a number of factors when setting the price including:

1. Face Value for the tickets (the price set by the event provider at the on-sale date)
2. Current & historical pricing for that event & seat rating across the secondary ticketing market
3. Offer history on this event & seat rating, on this event overall and on this performer.

This data is very large and dynamic – inventory for a given event is changing every second as new inventory is imported into our system from hundreds of ticket sellers. Also offer data is being added every time a new customer makes an offer. In order to not slow our site down considerably we keep a live set of aggregated data in our system that is updated whenever inventory or pricing rules change so that we can minimize the additional calculations needed at the time of the offer.

The manual overrides are managed by a pricing engine that allows pricing team members to override reserve prices depending on business factors such as special promotions, proprietary inventory deals or partner requirements. These allow us to adjust prices up or down overall, for a given subset of events or inventory providers.

## ANALYTICS FOR PRICING

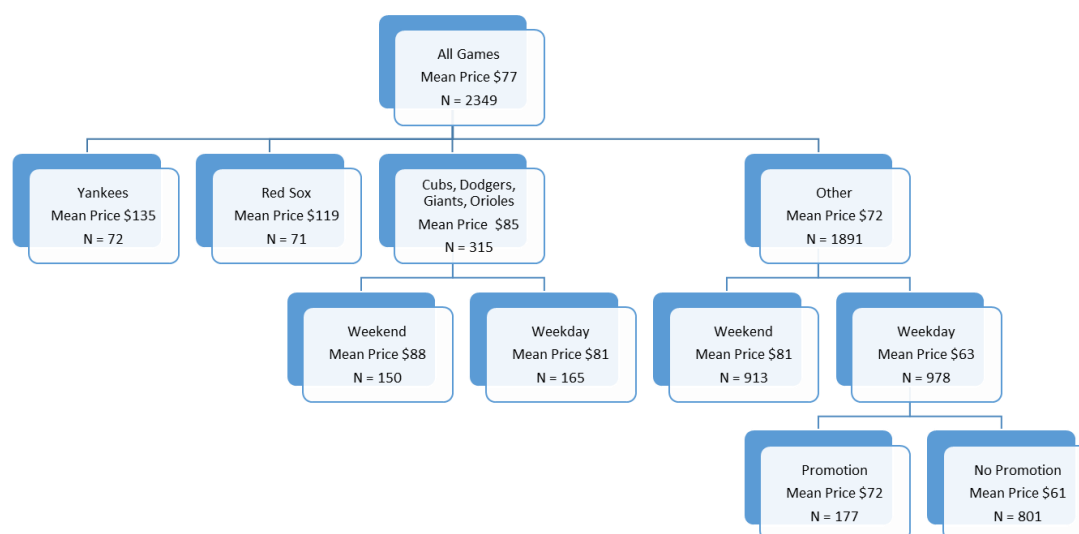
We use a lot of analytics to continue to refine our reserve price setting and associated guidance. We use a variety of predictive models to model the factors that affect a customer successfully getting their tickets (and us our sale). These models take into account factors like the bid guidance given, the reserve price in place at the time, time to event, and market prices. At present the majority of our modelling is done offline and represented in pricing equations through set parameters. As we evolve our pricing system into a more robust calculation environment we plan to embed more models into the calculations themselves so that parameters are reset automatically as pricing patterns change.

## ANALYTICS EXAMPLE

Unfortunately these are models we can't share as they are intrinsic to our business model. However, we also use modelling to continue to determine the key influence factors on live event pricing. A fun example of such a model is one that was built to determine the impact of promotions (e.g. bobbleheads, collectables, garden gnomes & fireworks) on Major League Baseball prices.

To do this study we looked at all US-based games for 2015 and market prices at March 10th, 2015 (i.e. before the season starts) – 2349 games. As a response variable we used the average ticket price of ticket available on the resale market on March 10th. We considered a number of variables but the final model set was Opponent, Weekday vs Weekend, and Promotions. We looked at individual promotion types but the data was too sparse for meaningful conclusions. We did not consider Home Team – there is definitely a market by market difference in game prices based on the appeal of the team in that market and the overall ability to pay – but this model was more about factors that change from game to game within a particular team's schedule.

The resulting model is shown in Figure 1.



**Figure 1: Decision Tree for MLB Pricing**

Perhaps not surprising that opponent is the number one factor by far. New York Yankees were number

one at an average of \$135, Boston Red Sox at number 2 at \$119, a group of 4 teams came in 3rd averaging \$85 (the Chicago Cubs, Los Angeles Dodgers, San Francisco Giants and Baltimore Orioles), with the rest of the teams averaging \$71. For the 3rd place group there was a \$7 difference between weekdays (Mon – Thurs) and Weekends (Fri/Sat/Sunday). The same Weekday/Weekend difference shows for the other teams but is more pronounced at an \$18 difference. A weekend game in group 4 is equivalent to a weekday game for the 3rd place group. Interestingly, promos came into play only for the weekday games for that 4th group. It showed that adding a promo could increase prices by about \$11 from \$61 to \$72.

## CONCLUSION

Analytics is a core element of our business at ScoreBig.com – it drives our pricing models, provides insights for ourselves and partners, and is also the basis of an evolving public relations initiative where we share our more general insights with media. Since ScoreBig requires our customers to take the initiative in naming their own price we will naturally be attracting more analytical customers. We already share information around prices in our bidding guidance, but we have plans in the future to surface more pricing information such as market prices & pricing trends for events.

## CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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