ASA DataFest Duke 2016

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Abstract

We worked to develop a solution to enable Ticket-Master to improve their relationship with their customers. We develop a model that would enable Ticketmaster to identify their most "valuable" customers and engage with them using a personalized recommendation system. The main strength of the model is that it enables Ticket-Master to identify high value customers on an individual level and enable tailored marketing approaches.

Customer Segmentation

We utilized a "Buy 'Til You Die" Bayesian Marketing Mixture Model to segment the customers into appropriate cohorts. The model uses a customer's purchasing history, particularly his "recency" (when the last transaction occurred) and "frequency" (how many transactions he made in a specified time period), and estimates the future purchasing behavior for the customer.

Using this model, we predicted the expected number of future ticket sales for each customer in the dataset for the next six months. With these predictions, we segmented the customer base into high-values customer (those with more than 50 expected purchases) medium-value and low-value (presumably one-time buyers).

Customer Insight

Once we determined the customer segment, we sought to understand common purchasing patterns among the customers. Using the data, we created an overall global network of customer preference behaviors as an undirected graph. Each node in the graph is a primary act, and the connections between the nodes represent a customer's next immediate ticket purchase for another artist. The more connected artists are, the more customers bought tickets for both of those artists. Artists that weren't connected to other artists by customers aren't shown on the graph. Based on this graphical network, we are able to visualize customer preferences in a given geographic region.

Marketing Insight

Using the predictions from our customer segmentation model and information gleaned from customer insights, we developed a recommendation system that would enable Ticket Master to assess purchase patterns for each customer in their database. Using this information, we are able to tailor marketing to customers based on their past purchasing behavior, artist preferences, incorporating information learned from global customer preferences. This would enable Ticket Master to make optimal recommendation on personal basis for each customer. In this way, Ticket Master can engage with their customers on a more personal level, improving customer relations and user experience, which could equate to increased sales.