benihana simulation analysis essay sample

Harvard Business Publishing has created a computer simulation to replicate the operations management decisions facing Benihana. Benihana is a teppanyaki style restaurant franchise that focuses on bringing a theatrical dinning experience to its patrons. The layout of the restaurant consists of two seating areas: the bar and the dining area. The goal of this simulation is to maximize utilization, throughput time and the nightly profit using different batching, bar sizing, hours of operation, as well as advertising strategies. The first five challenges are individual challenges where only one to three factors can be changed to gain affect nightly profit. The sixth and final challenge is to design the best strategy possible. In doing so, you use factors from the previous challenges in order to maximize the overall profit. The first challenge is the most straightforward as you only have one factor to adjust and analyze. Challenge one looks to analyze how batching affects throughput in the dining area.

If you choose to utilize batching you are replicating Benihana’s standard operating policy by sending customers from the bar to the dining room in groups of eight. The maximum number of seats at a dining room table is also eight. Therefore you are batching the process of seating by only filling tables, as there is a sufficient supply to do so. Batching is indeed the most profitable strategy. By batching or “ clumping” multiple groups of customers to meet the maximum of eight, they would be better utilizing the capacity of the restaurant. Instead of sending a group of two to one table and a group of six to another, by batching them you only use one table but still seat the same number of people. Profit is the dependant variable in this challenge and is directly influenced by the number of customers that can be served.

Therefore by maximizing the use of restaurant capacity we will see higher nightly profits. Through the simulation this holds true.

The second challenge that the simulation puts forth is the layout/design of the bar area. The bar area is used to keep customers engaged while they wait to be seated at their dining table. A second and possibly more essential use of the bar is to increasing revenue by selling drinks to the customers. In doing so Benihana raises the overall money spent by each customer.
The simulation provides a slider that can slide horizontally to change the number of bar seats and dining tables. As there is a limited amount of space there is also a limit to the bar size. For every table taken away, the bar would increase by eight seats and vice versa. By increasing the number of bar seats to 79 and tables to 11 I increased nightly profit from $121. 80 to $242. 38. Even though dinners bring in more revenue than drinks, my analysis showed that maximizing the number of dinner tables increased fixed costs. This also increased dinner table utilization. I found that the main use of the bar was to provide a buffer against demand. In doing so the bar is able to retain more customers who would otherwise be considered “ lost” and therefore correlates to increased profits.

Challenge number three consists of changing the amount of dining time across the restaurant. This again affects dining time throughput and overall utilization of the dining area. The dining time is the amount of time a customer takes from when they occupy the table to when they leave the table. The chefs at each table can control dining time. Chefs can perform the cooking quickly or even give verbal cues to customers so that they take less time to eat. There are three specific periods that you can adjust for in the

simulation. Before peak hours, peak hours, and after peak hours. Peak hours are when the restaurant is at its busiest and I hypothesized that using the lowest amount of dining time in this time slot would utilize capacity the most.

My hypothesis was correct and it also helps customer retention substantially over the course of each run. This particular challenge was more difficult in the past because during of peak hours there seemed to be contrasting results. I found that before peak implementing dining time very close to peak hours helped maximize profit. The opposite was true for after peak hours. An explanation for this could be that it is better to build brand loyalty when the restaurant is less busy and provide a better experience. This could lead to less customers leaving without being seated.

The fourth challenge is to analyze how marketing efforts affect operations and profitability. There are three factors that can be influenced on this particular challenge. The three factors include: Advertising Budget, Advertising Campaign, and Restaurant Opening Time. It would seem that this particular challenge is used to smooth out demand across all runs of the simulation. This challenge was hard in the sense that you had to run multiple simulations to find the best resulting increase in demand. As this increase in demand would result in increased profits as mentioned before. The problem however, is that sometimes the expenditure to boost demand did not result in a justified increase. I found that by advertising a significant amount (2. 1x advertising budget) and introducing a happy hour campaign I was able to increase nightly profits. This process allowed us to draw more customers to the bar and increase bar revenue by offering lower cost drinks. By better

developing the complimentary service of having a bar and offering price incentives for drinks, I was attracting more customers to the bar area therefore increasing bar revenue.

Fifth and final challenge for the individual simulations is concerned with utilizing different types of batching systems. The fifth challenge builds a more complex system for the first challenge. Instead of providing a yes or no scenario you are able to choose whether to batch and how to batch for each dining time slot. As I found batching to be beneficial to the restaurant I assumed that not batching would not utilize capacity to its fullest extent. Upon testing this in the simulation it proved true. By matching periods of increased or decreased demand we can analyze the affect of different batching scenarios on throughput and utilization. I found that by using a batching process at all times of the day was the best scenario and holds the batching hypothesis and findings of challenge one to be true. The sixth challenge was a combination of all previous challenges combined into one operations management decision.

At first I believed that in order to maximize profit in the sixth challenge all I had to do was implement my findings from all previous challenges. I would just copy the strategies I had used and then that would result in a maximized profit. Contrary to what I expected this did not ring true. So I had to revisit what I already knew. I knew batching increased utilization of capacity. I also knew that implementing a complimentary service could keep customers engaged, smooth out demand, and increase revenues, as lost customers would decline. It was at this point that I used my findings in previous challenges and tweaked my factors slightly. I found that by slightly

decreasing bar size from 79 seats to 63 seats, increasing dining time from 51 minutes to 68 minutes in post peak time, and increasing advertising budget to 2. 2x instead of 2, I was able to obtain a nightly profit of $708. 64 instead of $676. 59. So by changing parameters just slightly I was able to maximize nightly profits.