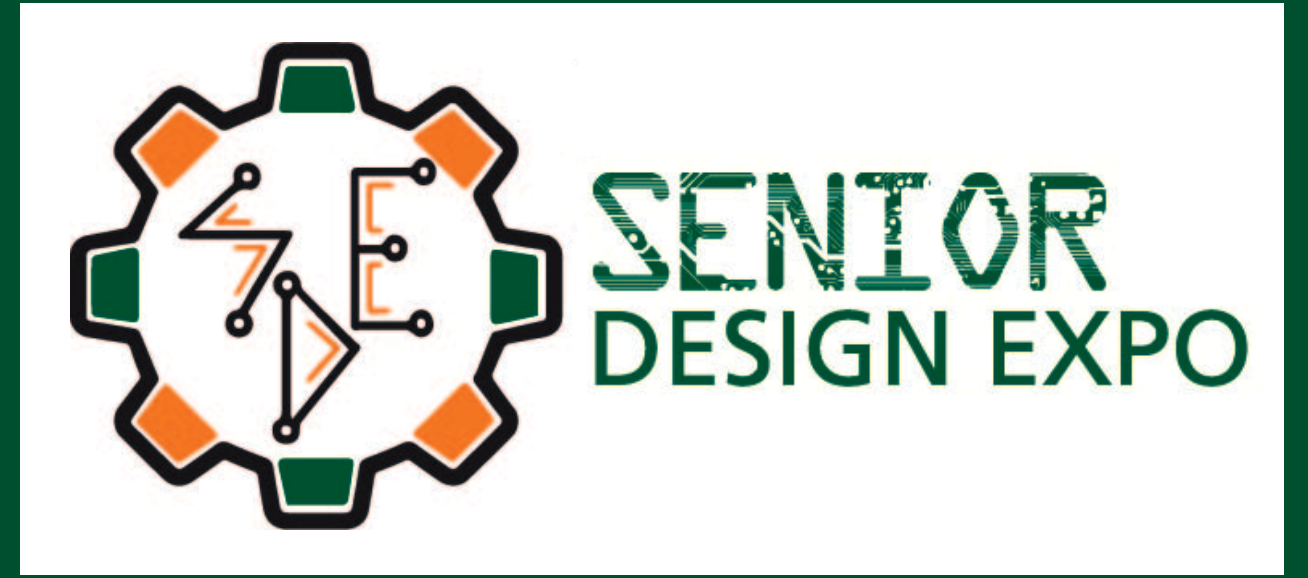


Norwegian Cruise Line: Predictive Modeling

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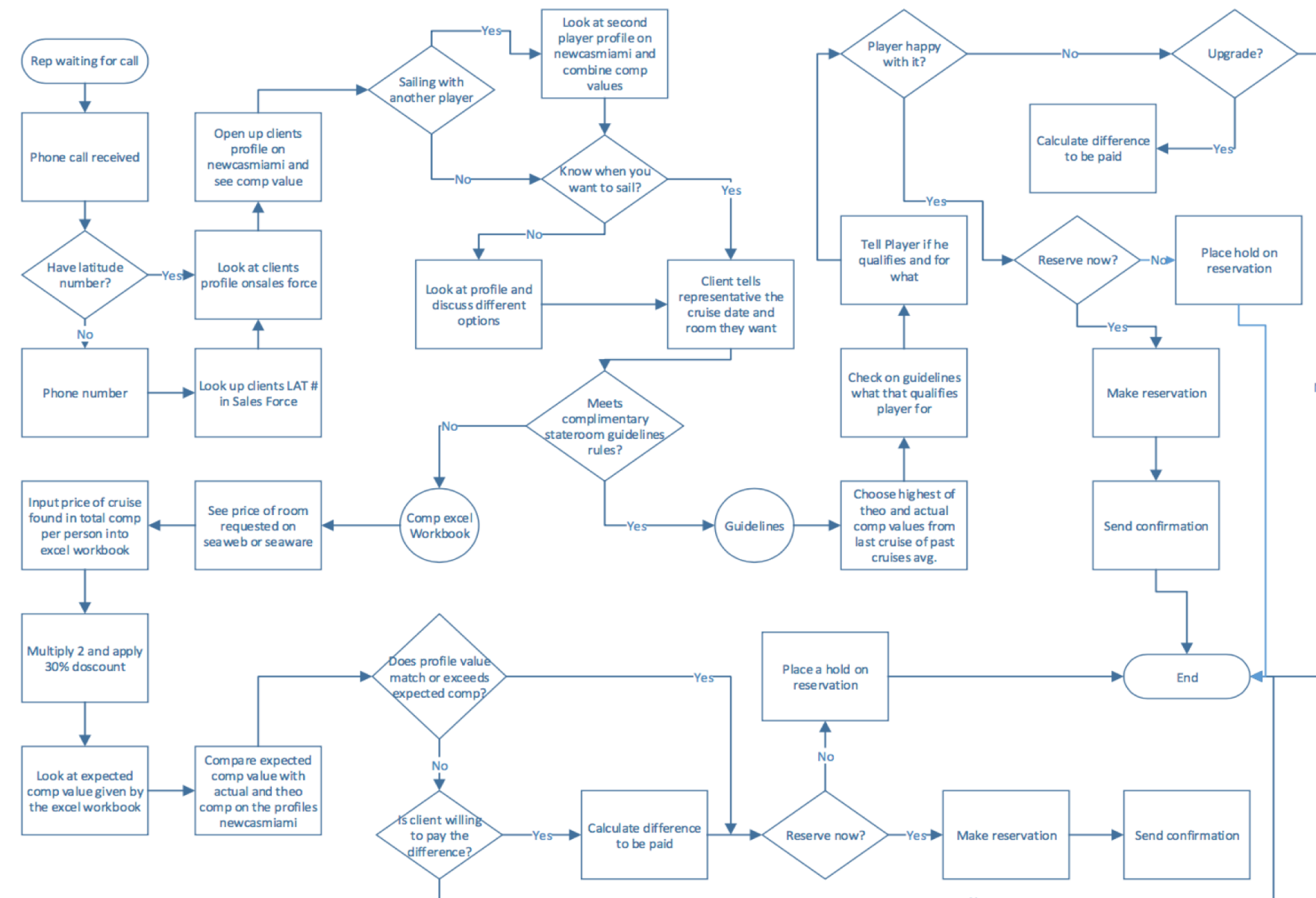
Abstract

In this study we have developed a new method for NCL's Casinos at Sea team to approach compensating customers on their future trips. By eliminating steps and tools from their old process and congregating everything into one simple and easy to use tool. Through this removing much of the room for error in compensation, and making the process less tedious for agents.

Introduction

At the start of this project we were presented with NCL's current process for approaching compensating their casino players, and were asked to help make it more accurate, while also making it less manual and subjective.

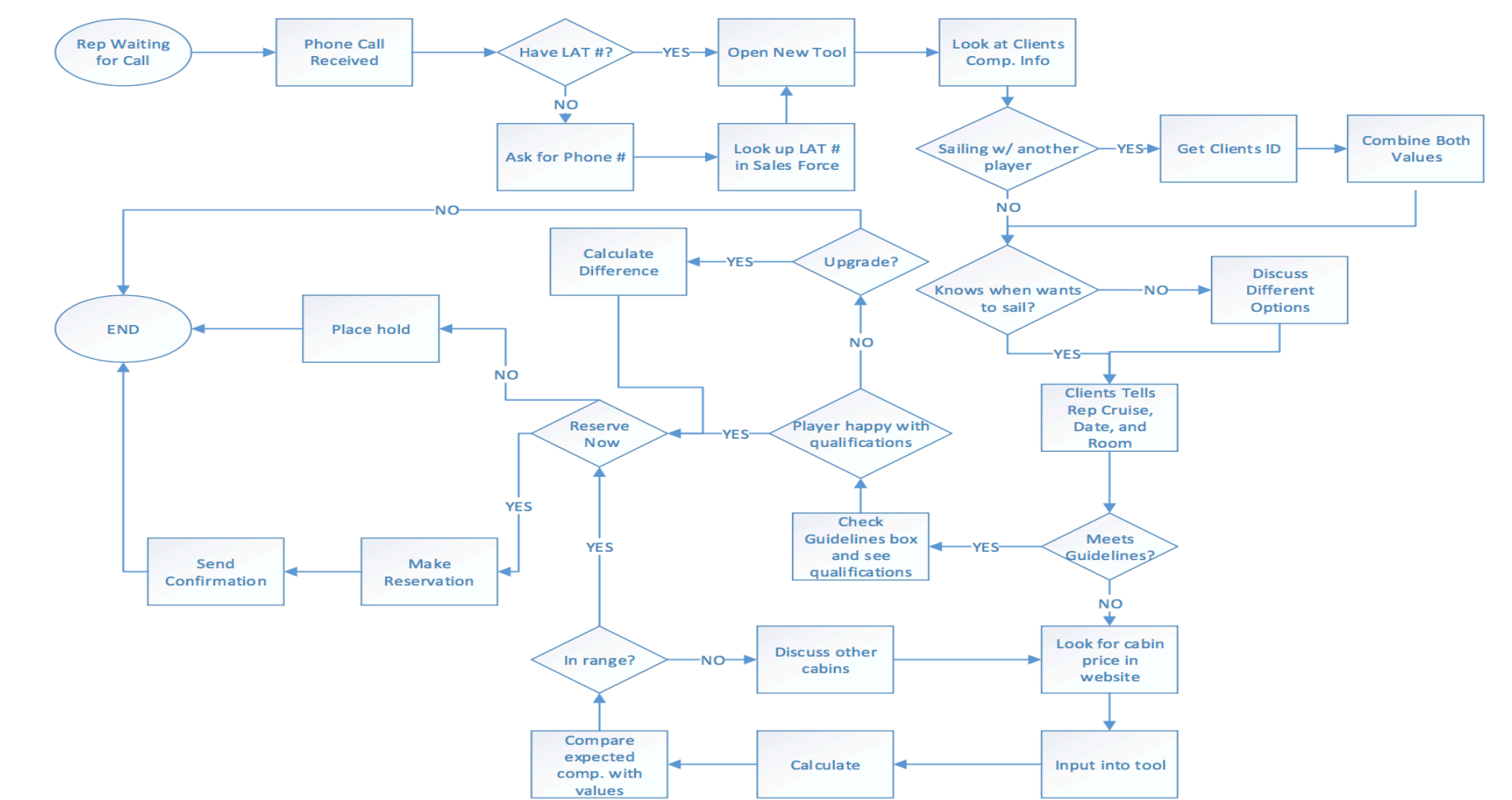
We then proceeded to go visit the casino team, and shadow their agents to observe and map the way in which calls were being handled. Our findings of the current process flow can be found in the figure below.



Methods | Design | Analysis

After understanding and observing their current process we found that there was room for standardization in order to significantly reduce the complexity of their flow by creating a model and an all-in-one simple to use tool for agents to calculate compensation values. We then proceeded with the following steps:

- Clean and reorganize data set given to us by NCL in order to begin testing
- Develop a model to more accurately predict a customer's future value to casino
- Create an all-in-one tool integrated with model, allowing for agents to quickly and more accurately calculate compensation values



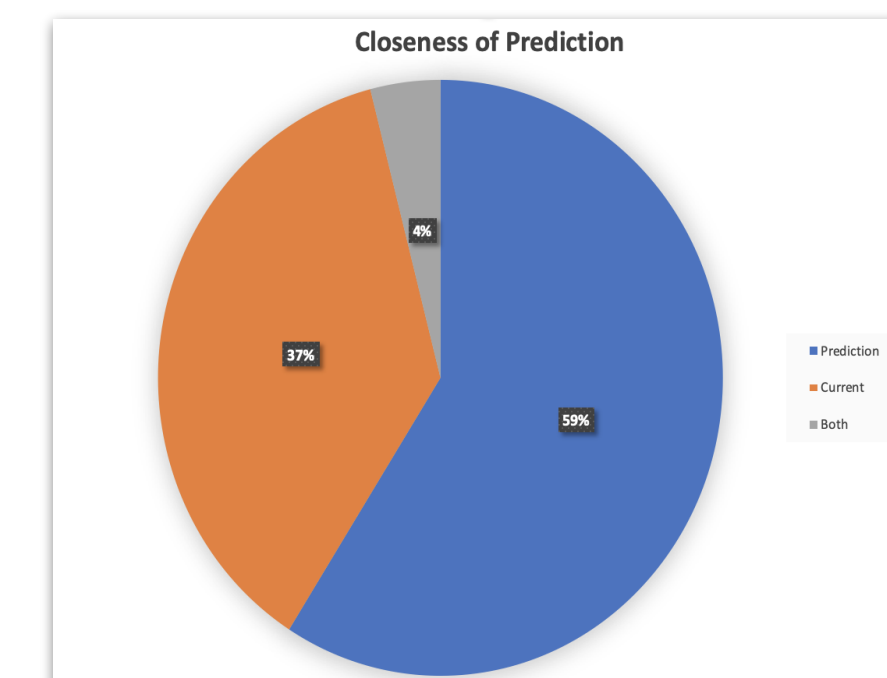
Conclusion

After running the tests shown in the results section, and creating a new flow of the process we are able to conclude that through using our tool their can be significant improvements in the allocation of money towards customers, as previously NCL was overcompensating plenty of their customers. Furthermore, there is also room for improvement from the process end as agents through our new tool no longer have to be flipping between different windows and tools, but instead have an all-in-one solution through out newly developed tool. Overall the added benefits our solution provides is an easy to use new tool which will more accurately predict future customer compensation values, and also simplify the learning curve for new agents in the team.

Results

Created a model which is personalized to each customer with 4 or more sailings and their unique behavior. Ran a test with both the old and new model using 100 random customers from the data set to predict their value in a future sailing, and got the following results:

	Current Method	Predictive Model	True Value
Total Comp. Allocated	\$334,824.44	\$242,482.57	\$239,277.07
% Comp Allocated	140%	101%	100%
Avg. Comp per Client	\$3,348.24	\$2,424.83	\$2,392.77
Avg. Overcomp per client	\$955.47	\$32.05	



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