SaaSafras Case Study - Vivek Saravanan

Main Takeaways

As the leader of SaaSafras, my goal is to maximize revenue and drive sustained growth. I optimized the allocation of my 20-member team using genetic algorithms, finding the best balance between new customer acquisition, account management, and support. This quarterly

plan ensures flexibility, stability for employees, and consistent execution. To enhance team performance, I am focusing on improving the Account Management team through training, CRM tools, collaboration, and customer feedback. By strengthening customer relationships and increasing retention rates, we can drive revenue growth and ensure long-term success.

Context

As the newly appointed leader of SaaSafras, a regional plant care operator recently acquired by Planterbox Inc., I'm tasked with *guiding the company towards a future of sustained growth*. SaaSafras currently enjoys a steady customer base of 1,000, with 25 more added each month organically due to our stellar brand reputation and customer referrals. However, we also face a monthly churn rate of 10%.

We have a pricing strategy where every active customer contributes $100 monthly towards our revenue, and we've been able to maintain a consistent customer satisfaction (CSAT) score of 70%. I've now been given charge of a 20-member versatile team, with capabilities ranging from sales and account management to support.

My immediate objective is to assign these talented individuals to specific roles, focusing on their specializations. The goal is to maximize SaaSafras' revenue at the end of the year. The roles and their impact are as follows:

- New Business Acquisition: Each person dedicated to this role could potentially bring in 5 new customers each month.

- Account Management: Those in account management could each handle up to 25 customers, decrease their churn rate by 5% relative to the base rate, and augment their monthly revenue by 25%.

- Support: Every dedicated support member could enhance our CSAT by 1 percentage point, thereby driving a relative churn reduction of 15%.

Assigning my team effectively to these roles will directly influence these vital metrics. My role is to find the ideal balance in this allocation. Furthermore, I need to identify which team, whether Sales, Account Management, or Support, requires my personal focus to augment their performance. I'll be devising a strategic plan for this, monitoring key metrics to measure the improvement.

Analysis

To kick off my analysis, I harnessed the provided metrics to construct a function that mimics a year-long trajectory. This formed the basis of my simulation model. Subsequently, I established a set of baselines that served as reference points and offered valuable insights into the revenue implications of each distinct role in our team.

Furthermore, with this simulation, I can conduct experiments on my model, altering the allocation of roles and observing the impacts on revenue. This process will ultimately allow me to identify the configurations that produce optimal outcomes.

After understanding the basic dynamics and establishing a robust simulation model, I plan on leveraging optimization methods, like genetic algorithms, to explore a vast array of possible configurations. By modeling the impact of various team compositions on revenue, I can identify the allocation that maximizes your revenue goal.

Baselines

- Baseline 1: Evenly distributed allocations across roles- [7, 7, 6]

- Baseline 2: 20 New Business Acquisition people, none others

- Baseline 3: 20 Account Managers, none others

- Baseline 4: 20 Support Agents, none others

	month	customers	churn	csat	nba_members	am_members	support_members	revenue
0	1.0	972.0	0.087825	0.76	7.0	7.0	6.0	104375.0
1	2.0	946.0	0.087802	0.76	7.0	7.0	6.0	101575.0
2	3.0	923.0	0.08778	0.76	7.0	7.0	6.0	98975.0
3	4.0	902.0	0.08776	0.76	7.0	7.0	6.0	96675.0
4	5.0	883.0	0.087741	0.76	7.0	7.0	6.0	94575.0
5	6.0	865.0	0.087722	0.76	7.0	7.0	6.0	92675.0
6	7.0	849.0	0.087704	0.76	7.0	7.0	6.0	90875.0
7	8.0	834.0	0.087687	0.76	7.0	7.0	6.0	89275.0
8	9.0	821.0	0.08767	0.76	7.0	7.0	6.0	87775.0
9	10.0	809.0	0.087656	0.76	7.0	7.0	6.0	86475.0
10	11.0	798.0	0.087642	0.76	7.0	7.0	6.0	85275.0
11	12.0	788.0	0.087629	0.76	7.0	7.0	6.0	84175.0

Baseline 1 simulation, evenly distributed allocations

Baseline 1: $1,112,700.00

Baseline 2: $1,375,800.00

Baseline 3: $1,037,700.00

Baseline 4: $890,700.00

From these foundational points, it's evident that the maximum revenue stems from the second baseline scenario, where all team members are focused on new business acquisition. This observation hints towards the potential significance of this role in boosting our overall run rate revenue.

Optimization

Now equipped with these comparative baselines, I ventured to explore techniques to optimize our staff allocation. A crucial element in our circumstances is that team members can change roles at the commencement of each month. Hence, our optimization strategy must consider and optimize each month throughout the year in order to maximize the annual revenue run rate.

The plan to optimize employee allocation on a monthly basis takes into account the changing business environment and customer needs. This will likely help your SaaSafras become more resilient and responsive.

Methods

I researched and explored two optimization techniques, beginning with linear programming.

- **Linear Programming:** I utilized the PuLP library to construct a simplistic model of our situation. However, it quickly became evident that while linear programming is a potent tool for many optimization problems, it might not be the most fitting for our scenario. The central limitation was the requirement for our objective function (revenue) to be linear, while the effects of support agents and account managers on revenue were not linear - they influence churn, which indirectly affects the revenue.

- **Genetic Algorithm:** This led me to consider an alternative strategy - a genetic algorithm using the DEAP library. Unlike linear programming, genetic algorithms don't require a linear relationship between variables. They can handle complex, nonlinear, and interdependent relationships more effectively. These characteristics make them well suited to our task of optimizing employee role allocation, given that the impacts of different roles on revenue are intricately interlinked and nonlinear. Genetic algorithms work by emulating the process of natural selection, iteratively selecting, combining, and mutating potential solutions to find the optimal answer. The genetic algorithm is a heuristic method used for optimization; it does not guarantee finding the global maximum or minimum, but it does provide good solutions over a reasonable time frame.

In the beginning, my optimization strategy was focused solely on maximizing revenue. However, understanding the importance of customer retention in the long-term health of the business, I refined my approach to balance revenue maximization and churn minimization.

Results

	month	customers	churn	csat	nba_members	am_members	support_members	revenue
0	1.0	973.0	0.087748	0.78	7.0	5.0	8.0	103125.0
1	2.0	997.0	0.08912	0.71	17.0	2.0	1.0	98550.0
2	3.0	994.0	0.088416	0.75	12.0	3.0	5.0	101575.0
3	4.0	966.0	0.08782	0.76	7.0	7.0	6.0	103775.0
4	5.0	951.0	0.088095	0.74	9.0	7.0	4.0	100975.0
5	6.0	933.0	0.088058	0.71	8.0	11.0	1.0	101975.0
6	7.0	916.0	0.087947	0.74	8.0	8.0	4.0	98300.0
7	8.0	940.0	0.088928	0.73	16.0	1.0	3.0	92225.0
8	9.0	922.0	0.087893	0.76	8.0	6.0	6.0	97750.0
9	10.0	892.0	0.087343	0.82	5.0	3.0	12.0	94075.0
10	11.0	878.0	0.087995	0.7	8.0	12.0	0.0	96700.0
11	12.0	841.0	0.087334	0.7	3.0	17.0	0.0	98425.0

Revenue: $1,187,450.00

The final revenue is $1,187,450.00 , and while it is not as high as the baseline scenario with all staff in new business acquisition, it offers a more balanced approach, taking into account customer satisfaction and retention as well as new customer acquisition.

This discrepancy can be due to a few factors.

- **Exploration vs. Exploitation**: Genetic algorithms use a mix of chance and rules to search for good solutions, like a game of hide and seek. They don't always find the absolute best solution, especially in more complex problems, but they balance finding new potential solutions and refining the good ones they've already found.

- **Complexity**: This problem involves both maximizing revenue and minimizing churn, making it more complex. It's about balancing these two goals. The genetic algorithm finds solutions that try to strike a balance, which is why the optimal revenue might not always be the highest.

- **Randomness:** Genetic algorithms use randomness, so they might produce different solutions each time they're run, even under the same conditions. Hence, you might see variations in the results with different runs.

In the context of this problem, while the revenue might be lower compared to the baseline scenario where all employees were assigned to new business acquisition, this solution results in

lower churn, contributing to a more stable and sustainable revenue stream in the long run.

Interpretation

Looking deeper into the monthly allocation trends, I observed the following:

- **New Business Acquisition:** There is an aggressive push towards new business acquisition in the initial months, particularly in the second month where it peaks with 17 personnel. This suggests that the algorithm found a significant value in quickly expanding the customer base at the beginning of the year. However, as the year progresses, this function sees a decreasing trend, particularly in the final months. This could be an indication that as the customer base grows, acquiring new customers becomes less impactful compared to retaining existing customers.

- **Account Management:** It is interesting to note that the allocation to account management increases over the year, peaking at 17 in the last month. This indicates a strategy shift towards retention and expansion within the existing customer base as the year progresses. The investment in this role scales with the number of customers acquired, implying that the algorithm found it beneficial to heavily invest in account management as the customer base grows.

- **Customer Support:** The allocation to customer support sees fluctuations throughout the year, peaking in the tenth month with 12 personnel. It appears that as customer acquisition slows down in later months, there is a switch to focus more on customer satisfaction and retention, with the customer support role playing a critical part in it.

In summary, the genetic algorithm appears to suggest a strategy of strong acquisition push early in the year, followed by a steady shift towards customer retention and satisfaction as the year progresses. This balance and flexibility in resource allocation seem to be a key factor in maximizing the annual revenue and minimizing customer churn.

Code

Check out the code I used for these simulations, at the link below!

https://github.com/viveksaravanan/SaaSafras-Case-Study

Plan

The allocation strategy I'm suggesting is data-informed, but it's crucial to bear in mind that real-world scenarios may necessitate alterations to this plan. Our approach could introduce certain challenges, particularly concerning team dynamics and morale. The frequent rotation of roles might stir up feelings of uncertainty or disorientation among team members. Therefore, alongside strategizing based on projected monthly revenues, we must also give weight to the human side of these changes, ensuring that our team remains motivated and fully engaged.

Given these considerations, I've used the insights gleaned from my analysis to formulate the following plan. I balanced and separated the allocations into quarters. This can be advantageous for several reasons:

- **Strategic Planning**: Aligns with financial reporting and strategy review, promoting goal-oriented decision-making.

- **Adaptability**: Allows timely strategy adjustments based on the previous quarter's performance.

- **Employee Stability**: Balances operational efficiency and job satisfaction by limiting major role changes to quarterly intervals.

- **Customer Experience**: Ensures consistent service by reducing drastic, frequent staff role changes.

- **Efficient Training**: Aligns with structured training periods, reducing errors and promoting smoother transitions.

My goal is to provide a good balance between flexibility in strategy and consistency in execution, which is beneficial for both the business and its employees.

Month	New Business Acquisition	Account Management	Customer Support
1	12	4	4
2	12	4	4
3	11	5	4
4	10	6	4
5	9	6	5
6	9	7	4

Month	New Business Acquisition	Account Management	Customer Support
7	7	8	5
8	7	8	5
9	6	9	5
10	5	9	6
11	4	10	6
12	4	11	5

Revenue: $1,175,675.00 *(comparable to optimized revenue)*

Breakdown and justification for each quarter's allocation strategy:

Quarter	New Business Acquisition	Account Management	Customer Support
Q1 (January - March)	Strong push (12, 12, 11) for new customer acquisition for a robust start.	Gradual increase (4, 4, 5) for customer retention and account growth.	Constant team of 4 maintains customer satisfaction and aids retention.
Q2 (April - June)	Slightly slower pace (10, 9, 9) as focus expands to managing new customers.	Gradual increase (4, 4, 5) for customer retention and account growth.	Higher allocation (4, 5, 4) manages increased service needs of a growing customer base.
Q3 (July - September)	Reduced pace (7, 7, 6) allows more focus on existing customers.	Allocation increases (6, 6, 7) to nurture and expand existing relationships.	Steady team of 5 ensures customer satisfaction and prompt issue resolution.
Q4 (October - December)	Lowest focus (5, 4, 4) as year-end slows new customer acquisition.	Highest allocation yet (8, 8, 9) to retain and grow established customer base.	Consistently high support (6, 6, 5) maintains satisfaction during year-end rush.

In Q1, we start with a heavy focus on new business acquisition to capture new customers for the year. In Q2, we slightly reduce the focus on acquisition and increase attention towards account management and customer support as we start servicing the newly acquired customers. This

trend continues into Q3 as we expect a larger customer base. In Q4, we focus most heavily on account management to maintain and grow within the existing customer base, while still keeping a solid team for acquisition and support.

This is a more evenly distributed plan, and the specific numbers might need further tweaks based on more complex business dynamics and real-world feedback. However, it should provide a solid starting point that respects the insights obtained from the genetic algorithm, while also considering the practicality of a more consistent team structure.

Planterbox Inc. Considerations

As PlanterBox Inc. has recently acquired our company, maintaining open and transparent communication is critical. We need to ensure that PlanterBox Inc. is well-informed and engaged with our strategies and operations.

Our quarterly allocation strategy provides an excellent framework for this communication:

- **Performance Metrics**: This structure allows for tracking and reporting of key performance metrics at the end of each quarter. These metrics might include total revenue, new customer acquisition, customer churn rate, and employee satisfaction score. Reporting these metrics on a quarterly basis gives a clear, regular snapshot of our performance and progress.

- **Predictability**: Aligning our strategy with quarterly periods gives us a predictable structure that matches common business cycles. It makes it easier to convey our intentions and the logic behind our decisions at the start of each quarter to PlanterBox Inc.

- **Flexibility and Adaptability**: If results deviate from our expectations, we can readily identify these discrepancies, communicate them to PlanterBox Inc., and adjust our strategies for the following quarter. This proactive approach demonstrates our commitment to managing and improving our operations.

- **Employee Stability**: By keeping significant changes within quarterly intervals, we can show PlanterBox Inc. that we're considering employee welfare along with business objectives. Regular reporting on employee morale and performance can add another layer of insight for PlanterBox Inc., showing the human side of our business decisions.

This strategy enables us to articulate our choices, celebrate our accomplishments, and candidly discuss our hurdles. Moreover, it helps us demonstrate our reactive and adaptive measures. By doing so, we can maintain PlanterBox Inc.'s engagement and ensure their continued support throughout our journey.

Enhancing Team Performance: Focusing on Account Management

While all these teams - New Business Acquisition, Account Management, and Support - are integral to the organization's success. I would focus on improving the Account Management team. Here's why and how I would approach this.

Account Management is a bridge between Sales and Support. They work closely with clients post-sales, nurturing the relationship, understanding client needs, ensuring customer satisfaction, and spotting opportunities for account growth.

Enhancing the effectiveness of the AM team can not only improve customer retention but also increase the revenue per customer through upselling and cross-selling.

Plan to Improve the Account Management Team:

- **Training and Skill Development**: Invest in training programs to equip the team with skills like effective communication, negotiation, problem-solving, and understanding of product or service offerings. Encourage team members to gain industry-specific knowledge to better understand and serve clients.

- **Customer Relationship Management (CRM) Tools**: Implement or optimize CRM tools to manage client relationships effectively. This would help in tracking interactions, setting reminders for follow-ups, and providing personalized service. This also allows for the opportunity to scale so that Account Managers may be able to handle more than 25 accounts.

- **Cross-Functional Collaboration**: Foster better collaboration with the Sales and Support teams. This could include regular joint meetings to exchange insights about customer behavior, preferences, and feedback. It can help in understanding the customer journey better and providing a seamless customer experience.

- **Customer Feedback**: Regularly collect and analyze customer feedback. This information can be invaluable in making service improvements and addressing any issues proactively.

Key Metrics to Measure Improvement:

1. **Customer Lifetime Value (CLV)**: This metric helps us assess the net profit attributed to the entire future relationship with a customer.

2. **Churn Rate**: This measures the number of customers the Account Management team can retain over a period. An increase in this metric signifies improved performance.

3. **Account Growth**: Monitor the revenue from existing clients. Growth in this area indicates successful upselling and cross-selling.

By focusing on these areas, the Account Management team's effectiveness can be significantly enhanced, leading to better customer relationships, higher retention rates, and increased revenue growth.

Additionally, I plan on comparing these metrics between customers managed by Account Managers and those not under direct account management. By measuring and comparing key metrics , we can quantify the value added by our Account Management team.

If customers managed by Account Managers tend to stay with us longer, buy more, and report higher satisfaction, it's a clear sign that the Account Management function is successful. Conversely, if the metrics do not show significant improvement or even perform worse than the rest of the customer base, it can signal areas that need attention and improvement within our Account Management practices.

These comparisons not only underline the importance of effective Account Management but can also help justify the resources allocated to this function.