

Solution to LeafLife's Cum. Revenue Growth Maximization Case Study

(submitted by Akshay Danthi)

Problem Statement:

Company Background:

- **GreenThumb Inc.** is a plant care software business that recently acquired **LeafLife**, a regional plant care operator in the Southeastern US.
- **LeafLife** has maintained stable business performance with organic growth and natural churn.
- After the retirement of **LeafLife's** previous CEO, you were selected by **GreenThumb Inc.** to lead the newly acquired business, retaining the **LeafLife** brand name due to its strong appeal.

Team Structure and Current Challenges:

- **LeafLife** has a team of 20 versatile employees who currently handle multiple roles: sales, account management, and customer support.
- While this flexibility has been valuable, it has led to lower productivity. The team members have expressed a strong desire to specialize in one role at a time, and going forward, they will be allowed to focus on a single role each month, with the flexibility to switch roles at the start of each month without loss of productivity.

Business Goals:

- The main objective is to maximize **LeafLife's** cumulative revenue over the next 24 months.
- You are tasked with determining the optimal allocation of the 20 employees across three roles—New Business Acquisition, Account Management, and Support—each month to achieve this goal.

Key Business Metrics:

- **Current Customers:** **LeafLife** has 1,000 active customers.
- **Customer Acquisition:** The business acquires 25 new customers monthly through organic growth.
- **Churn Rate:** Monthly churn is 10%, driven by customers seeking more specialized solutions.
- **Support and CSAT:** A standalone support organization has maintained a steady Customer Satisfaction (CSAT) score of 70% for several years.
- **Revenue:** Every active customer pays a baseline fee of \$100 per month for the core product.

Role-Specific Productivity Metrics:

1. **New Business Acquisition:** Each team member can acquire 5 new customers per month.
2. **Account Management:**
 - Account managers can increase revenue by 20% month-over-month for the accounts they manage, with compounding growth for up to 6 months. After 6 months, the revenue increase caps and remains flat as long as the account manager is assigned.
 - Each account manager can handle up to 25 customers at a time.
3. **Support:**
 - Each support agent can increase the CSAT by 1 percentage point per month.
 - Each 1% increase in CSAT results in a 15% relative decrease in churn, with compounding effects.

Decisions to be Made:

1. **Monthly Role Allocation:** How to allocate the 20 employees each month among New Business Acquisition, Account Management, and Support.
2. **Justification:** Provide reasoning behind the allocation decisions to maximize cumulative revenue over the 24 months.
3. **Bonus Consideration:** If given a magic wand, what is the one core metric you would improve going into year 3? How would you approach enhancing that metric?

Strategy Outline:

- **Customer Acquisition:** Consider balancing the number of team members dedicated to acquiring new customers with the need to retain existing ones.
- **Account Management:** Allocate sufficient resources to maximize revenue growth from existing customers, particularly in the early months to allow for compounded growth.
- **Support:** Maintain or improve the CSAT score to reduce churn, especially in the initial months, to stabilize the customer base and revenue.

Magic Wand Metric:

- If given a choice to improve one metric, consider enhancing the effectiveness of Account Management (e.g., increasing the monthly revenue growth rate or extending the compounding period beyond 6 months). This could significantly boost revenue from existing customers, providing a strong foundation for sustained growth.

Solution:

Players:

1. GreenThumb Inc.: Plant care Software business.
2. LeafLife: Plant care Operator, S.E. US [*Acquired by GreenThumb*]
 - a. Team of 20 Generalists skilled in Sales (New Business Acquisition - **NBA**), Account Management (**AM**) and Support (**S**) seeking Specialization in 1 role.

Current metrics:

Core business metrics:

1. Current Customer Count = 1000.
2. Organic Acquisition Rate = 25 / month.
3. Average Monthly Churn Rate = 10%.
4. Average CSAT = 70%.
5. Baseline ARPU (w/o AM help) = \$100.

Team specific metrics:

1. NBA's customer acquisition rate = 5 / team member / month.
2. Revenue Increase by AM = 20% / month (6-months capped).
3. AM Capacity = 25 customers / team member.
4. CSAT Impact by Support = 1% / team member.

Relationship between CSAT & Churn: 1% increase in CSAT = 15% decrease in Churn Rate

Assume t represents a month between 1 to 24.

Then S(t) would represent the Number of Support staff assigned in month t.

Let's represent the metrics given using the number of NBA staff, AM staff and S staff.

1. New customers acquired = Organic Growth Rate + Customers Acquired by NBA
= $25 + (5 * NBA(t))$
2. Effective Churn Rate over 24 months =
Average Monthly Churn Rate * (Churn Reduction by CSAT increase by each member)
= $(10/100) * (1 - 0.15)^{CSAT(t)}$

Considering each Support member brings 1 point of increase in CSAT,

$$= (10/100) * (1 - 0.15)^{S(t)}$$

$$= 0.10 * (0.85)^{S(t)}$$

3. Total number of customers acquired over 2 years =
[Current Customer Count (t-1) + Organic Growth Rate +
(Number of NBA team members (t) * 5)] - [Churn(t) * Current
Customer Count (t-1)]

$$= \sum_{t=1}^{24} ([C(t - 1) + 25 + (NBA(t) * 5)] - [[0.10 * (0.85)^{CSAT(t)}] * C(t - 1)])$$

4. Expressing Total Revenue in each month as a function of all team-member contributions,

i. Baseline Revenue in a month = Baseline Revenue + (Baseline Revenue * Customers (t))

Considering that the Revenue increase by each AM is 20%,

$$\text{AM derived revenue per user in a month} = \sum_{n=1}^6 [\$100 + (\$100 * 0.20)]^n$$

$$= \sum_{n=1}^6 [\$100 * (1 + 0.20)]^n$$

$$= \sum_{n=1}^6 [\$100 * (1.20)]^n$$

$$\text{Total Revenue in a month } t = \text{Baseline Revenue per user} + \text{AM derived Revenue per user}$$

$$= [100 * \text{Customers (t)}] + \left[\sum_{n=1}^6 [25 * AM(t) * \$100 * (1.20)]^n \right]$$

Where, 25 * AM(t) represents the number of Account Managers in a month multiplied by the number of customers they handle.

Our goal is to maximize Cumulative Revenue for the next 24 months using given data points.

$$\text{Cumulative Revenue} = \sum_{t=1}^{24} [\text{Total number of customers} * \text{Total revenue}]$$

$$=$$

$$\sum_{t=1}^{24} [[\text{Customers}(t - 1) + 25 + (NBA(t) * 5)] - [[0.10 * (0.85)^{S(t)}] * \text{Customers}(t - 1)] *$$

$$[[100 * \text{Customers (t)}] + \left[\sum_{n=1}^6 [25 * AM(t) * \$100 * (1.20)]^n \right]]$$

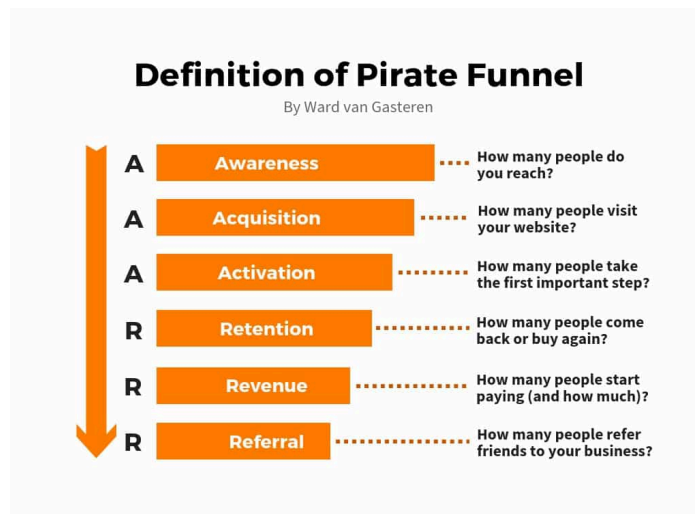
Now, we have expressed Cumulative Revenue as a function of Number of NBA's, AM's S's hired in a month t.

Q1: Decision 1: How many people will work on acquiring new business, Account management, and support each month from month 1 to month 24?

A: From our formula, we see that the Revenue is compounded (by 20%) by the AM staff for each customer. Hence, we must never reduce/trade-off this variable for another variable. However, this is for when the product has acquired enough customers for the AM team to upsell and cross sell to.

Same for new customers gained by NBA team, where each of them pay \$100.

Consider the AARRR Pirate funnel,



We know that a very large initial acquisition will result in lesser churn and a higher number of customers for our AM team to work with.

Similarly, we need a constant number of Support staff to make sure we don't have leakages/churn.

So, I would divide the 24 months into 3 phases, each phase of 8 months:

Phase 1: Aggressive Acquisition, Mild Revenue growth.

Phase 2: Milder Acquisition, Aggressive Revenue growth.

Phase 3: Low Acquisition, More Aggressive Revenue growth.

1. In phase 1, out of the 20 people, I would assign 6 people equally to each team. But there'd be 2 unassigned people who I'd assign to New Business Acquisition, so we have a very large ToFu getting a large number of new customers into our pipeline, who'll then be retained by the Support team, and upsold/cross-sold to by the Account Management team.

Phase 1 split: 8 NBA, 6 AM, 6 S.

We'll have acquired $8 * 5 = 40$ new customers by NBA team.

$$\begin{aligned}\text{Effective Churn Rate} &= 0.10 * (0.85)^6 \\ &= 3.59\%\end{aligned}$$

Net churn count = 1000 * 3.59% = 36 customers lost per month.

$$\begin{aligned}\text{Total Customer Count at end of Phase 1} &= 1000 + 25 + 40 - 36 \\ &= 1029.\end{aligned}$$

- In phase 2: Considering there are 1029 people to handle, now I'd move 2 of the NBA team members into the AM team, to improve the Revenue sourcing from our new and existing customers, to achieve the Revenue compounding effect.

Phase 2 split: 6 NBA, 8 AM, 6 S.

We'll have acquired $6 * 5 = 30$ new customers by the NBA team.

$$\begin{aligned}\text{Effective Churn Rate} &= 0.10 * (0.85)^6 \\ &= 3.59\%\end{aligned}$$

Net churn count = 1029 * 3.59% = 37 customers lost per month.

$$\begin{aligned}\text{Total Customer Count at end of Phase 1} &= 1029 + 25 + 30 - 37 \\ &= 1047.\end{aligned}$$

- In phase 3: Now that we have enough customers (1047) to source revenue from, I'd split the members into 4 for NBA, 8 for AM (for aggressive revenue improvement), 6 for Support team.

We'll have acquired $4 * 5 = 20$ new customers by the NBA team.

$$\begin{aligned}\text{Effective Churn Rate} &= 0.10 * (0.85)^6 \\ &= 3.59\%\end{aligned}$$

Net churn count = 1029 * 3.59% = 37 customers lost per month.

$$\begin{aligned}\text{Total Customer Count at end of Phase 1} &= 1047 + 25 + 20 - 37 \\ &= 1055.\end{aligned}$$

3. Bonus: If you had a magic wand, what is the one variable you would try to improve going into year 3? How would you approach moving that variable? ○ By “variable” here, we mean one of your team members core metrics (customer acquisition, CSAT, revenue increase, relative churn decrease etc).

A: Magic Wand Improvement

If I could improve one variable, I would increase the monthly revenue growth rate for Account Managers from 20% to 25%. This would significantly boost revenue.

$$\begin{aligned}
 \text{Cumulative Revenue} &= \sum_{t=1}^{24} [\text{Total number of customers} * \text{Total revenue}] \\
 &= \\
 &\sum_{t=1}^{24} [[\text{Customers}(t - 1) + 25 + (\text{NBA}(t) * 5)] - [[0.10 * (0.85)^{S(t)}] * \text{Customers}(t - 1)] * \\
 &\quad [[100 * \text{Customers}(t)] + [\sum_{n=1}^6 [25 * \text{AM}(t) * \$100 * (1.25)]^n]
 \end{aligned}$$

We see that the largest compound effect we have here is the 0.2 (i.e. 20% increase in Revenue). Hence, that is the variable I'd focus the most to increase Cumulative Revenue over the next 24 months.

Simulation by plugging in our values for each phase:

Month	Total Customers	Monthly Revenue	Cumulative Revenue
1	1,000.0	\$100,000.00	\$100,000.00
2	1,046.2	\$104,620.00	\$204,620.00
3	1,092.6	\$109,260.00	\$313,880.00
4	1,139.3	\$113,930.00	\$427,810.00
5	1,186.1	\$118,610.00	\$546,420.00
6	1,233.0	\$123,300.00	\$669,720.00
7	1,280.0	\$128,000.00	\$797,720.00
8	1,327.1	\$132,710.00	\$930,430.00
9	1,365.1	\$136,510.00	\$1,066,940.00

10	1,403.3	\$140,330.00	\$1,207,270.00
11	1,441.6	\$144,160.00	\$1,351,430.00
12	1,480.0	\$148,000.00	\$1,499,430.00
13	1,518.5	\$151,850.00	\$1,651,280.00
14	1,557.0	\$155,700.00	\$1,807,000.00
15	1,595.6	\$159,560.00	\$1,966,560.00
16	1,634.2	\$163,420.00	\$2,130,980.00
17	1,669.8	\$166,980.00	\$2,297,960.00
18	1,705.4	\$170,540.00	\$2,468,500.00
19	1,741.0	\$174,100.00	\$2,642,600.00
20	1,776.7	\$177,670.00	\$2,820,270.00
21	1,812.4	\$181,240.00	\$3,001,510.00
22	1,848.1	\$184,810.00	\$3,186,320.00
23	1,883.8	\$188,380.00	\$3,374,700.00
24	1,919.5	\$191,950.00	\$3,566,650.00

Results at end of each phase:

- **Month 8 (end of aggressive NBA Growth phase: NBA=8, AM=6, S=6):**
 - **Total Customers:** 1,327.1
 - **Monthly Revenue:** \$132,710.00
 - **Cumulative Revenue:** \$930,430.00
- **Month 16: (reducing NBA growth with aggressive AM Growth: NBA=6, AM=8, S=6)**
 - **Total Customers:** 1,634.2
 - **Monthly Revenue:** \$163,420.00
 - **Cumulative Revenue:** \$2,130,980.00
- **Month 24: (reducing NBA growth with aggressive AM Growth: NBA=4, AM=8, S=6)**
 - **Total Customers:** 1,919.5
 - **Monthly Revenue:** \$191,950.00
 - **Cumulative Revenue:** \$3,566,650.00