

Case Study Analysis for New Tool Investment

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Objective:

The sales team has identified a new tool that will improve conversion (sales/opportunities) by 5% relatively but will add \$200k/month in costs. Should we invest in this tool?

Approach:

Customer Acquisition Cost (CAC) and Break-even analysis to evaluate the impact on sales, revenue, and profit.

Data Sources:

- ☐ - Monthly marketing spend
- ☐ - Opportunities generated
- ☐ - Sales achieved

Key Metrics:

- ☐ - Total marketing spend
- ☐ - Average conversion rates
- ☐ - Sales figures

Marketing Analytics

❏ Overview of Total Spend and Monthly Spend:

- The total spend for each month varies, with the highest spend in November (\$3,957,240) and the lowest in September (\$1,384,596).
- The additional \$200,000 per month significantly impacts the total cost
- The additional cost of \$200,000 raises the total monthly spend by around 12.49% on average.

❏ Average Monthly Cost Analysis

Average Cost Without Additional \$200K:

- The average monthly cost without the additional \$200K is \$2,142,419
- This represents the baseline spending required for marketing activities across the year

Average Cost With Additional \$200K:

- The average monthly cost with the additional \$200K is \$2,342,419.

Percentage Increase in Average Cost:

- The percentage increase in the average monthly cost due to the additional \$200K is 9.34%.

Analysis of Total Opportunities and Average Opportunities per Month

❑ Total Monthly Opportunities

- The total number of opportunities generated each month varies significantly, ranging from a low of 13,274 in July to a high of 34,567 in December.

$$\text{Average Opportunities per Month} = \frac{\text{Total Opportunities (Sum for all months)}}{\text{Number of Months}}$$

➤ Average Opportunity per Month (Before Implementing the New Tool): 19216

➤ Average Opportunity per Month (After Implementing the New Tool): 19216

Assumption: The new tool does not generate additional opportunities but improves the conversion rate of existing opportunities.

Given the assumption, the average number of opportunities remains the same as before, which is: 19216

Methodology

- Calculate current conversion rates
- Estimate improved conversion rates with the new tool
- Calculate additional sales and revenue projections
- Analyze costs, including CAC with and without the new tool
- Conduct profit/loss analysis for different revenue scenarios
- Perform scenario analysis for break-even calculation

Analysis of Sales Data

❑ Total Sales and Averages

Total Sales per Month:

- Total sales fluctuate throughout the year, with the lowest in March (3,992) and the highest in December (11,395).

$$\text{Avg Sales without new tool} = \frac{\text{Total Sales}}{\text{Number of Months}}$$

Average Sales per Month Without the New Tool: 6042

Conversion Rate Analysis

❑ Old Conversion Rate:

$$\text{Old Conversion Rate} = \frac{\text{Avg Sales without new tool}}{\text{Avg Opportunities per Month}}$$

- Avg Sales without new tool = 6,042
 - Avg Opportunities per Month = 19,215.5
 - Old Conversion Rate = $(6,042 / 19,215.5) \times 100 \approx 31.45\%$
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❑ Improved Conversion Rate by 5%:

$$\text{Improved Conversion Rate} = \text{Old Conversion Rate} + (5\% \times \text{Old Conversion Rate})$$

- Improved Conversion Rate = $31.45\% + (0.05 \times 31.45\%) \approx 33.02\%$
 - The new tool improves the conversion rate from 31.45% to 33.02%, resulting in additional sales per month.
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❑ Average New Sales with the Tool:

$$\text{Avg New Sales with tool} = \text{Avg Opportunities per Month} \times \text{Improved Conversion}$$

- Avg New Sales with tool = $19,215.5 \times 0.3302 \approx 6,345$
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❑ Additional Sales per Month

$$\text{Additional Sales per Month} = \text{Avg New Sales with tool} - \text{Avg Sales without new tool}$$

- Additional Sales per Month = $6,345 - 6,042 \approx 302$

Customer Acquisition Cost (CAC)

Customer Acquisition Cost (CAC) helps determine how much it costs to acquire a new customer through all marketing channels.

❑ CAC Without the New Tool:

➤ Formula

$$\text{CAC without new tool} = \text{Avg Cost without \$200K per Month} / \text{Avg Sales without new tool}$$

Given Data:

- Avg Cost without \$200K per Month = \$2,142,419
 - Avg Sales without new tool = 6,042
 - CAC without new tool = $2,142,419 / 6,042 \approx \354.56
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❑ CAC With the New Tool:

➤ Formula

$$\text{CAC without new tool} = \text{Avg Cost without \$200K per Month} / \text{Avg Sales without new tool}$$

➤ Given Data:

- Avg Cost with \$200K per Month = \$2,342,419
- Avg New Sales with tool = 6,345
- CAC with new tool = $2,342,419 / 6,345 \approx \369.20

Change in CAC

$$\text{Change in CAC} = \frac{\text{New CAC} - \text{Old CAC}}{\text{Old CAC}} \times 100$$

$$\text{Change in CAC} = ((369.20 - 354.56) / 354.56) * 100 \approx 4.13\%$$

❑ Impact on CAC:

- The CAC increases by approximately 4.13% with the implementation of the new tool.
- The analysis indicates that the Customer Acquisition Cost (CAC) has increased from \$354.56 to \$369.20 with the implementation of the new tool, reflecting a 4.13% rise.
- This increase in CAC suggests that acquiring new customers has become more expensive, which is not an encouraging sign. Although we do not have the revenue data for each sale to fully assess the impact on profitability, the rise in CAC alone implies that the new tool may not be a worthwhile investment

Break-Even Analysis and Assumptions for Revenue per Sale

- The break-even analysis helps us understand the revenue per sale needed for the new tool to become a worthwhile investment, By calculating the break-even revenue and examining various revenue scenarios, we can assess whether the new tool will be profitable.

If Avg Revenue Per Sale	Old Total Revenue (w/o New Tool)	Old Profit/Loss (w/o New Tool)	New Total Revenue (with New Tool)	New Profit Loss (with New Tool)	Profit Growth (Old Profit/loss - New Profit/Loss)
100	\$604,247.17	-\$1,538,171.83	\$634,459.53	-\$1,707,959.48	-\$169,788
300	\$1,812,741.50	-\$329,677.50	\$1,903,378.58	-\$439,040.43	-\$109,363
500	\$3,021,235.83	\$878,816.83	\$3,172,297.63	\$829,878.63	-\$48,938
700	\$4,229,730.17	\$2,087,311.17	\$4,441,216.68	\$2,098,797.68	\$11,487
900	\$5,438,224.50	\$3,295,805.50	\$5,710,135.73	\$3,367,716.73	\$71,911
1100	\$6,646,718.83	\$4,504,299.83	\$6,979,054.78	\$4,636,635.78	\$132,336
1300	\$7,855,213.17	\$5,712,794.17	\$8,247,973.83	\$5,905,554.83	\$192,761
1500	\$9,063,707.50	\$6,921,288.50	\$9,516,892.88	\$7,174,473.88	\$253,185
1700	\$10,272,201.83	\$8,129,782.83	\$10,785,811.93	\$8,443,392.93	\$313,610
1900	\$11,480,696.17	\$9,338,277.17	\$12,054,730.98	\$9,712,311.98	\$374,035
2100	\$12,689,190.50	\$10,546,771.50	\$13,323,650.03	\$10,981,231.03	\$434,460
2300	\$13,897,684.83	\$11,755,265.83	\$14,592,569.08	\$12,250,150.08	\$494,884
2500	\$15,106,179.17	\$12,963,760.17	\$15,861,488.13	\$13,519,069.13	\$555,309
2700	\$16,314,673.50	\$14,172,254.50	\$17,130,407.18	\$14,787,988.18	\$615,734
2900	\$17,523,167.83	\$15,380,748.83	\$18,399,326.23	\$16,056,907.23	\$676,158
3100	\$18,731,662.17	\$16,589,243.17	\$19,668,245.28	\$17,325,826.28	\$736,583
3300	\$19,940,156.50	\$17,797,737.50	\$20,937,164.33	\$18,594,745.33	\$797,008
3500	\$21,148,650.83	\$19,006,231.83	\$22,206,083.38	\$19,863,664.38	\$857,433
3700	\$22,357,145.17	\$20,214,726.17	\$23,475,002.43	\$21,132,583.43	\$917,857
3900	\$23,565,639.50	\$21,423,220.50	\$24,743,921.48	\$22,401,502.48	\$978,282
4100	\$24,774,133.83	\$22,631,714.83	\$26,012,840.53	\$23,670,421.53	\$1,038,707
4300	\$25,982,628.17	\$23,840,209.17	\$27,281,759.58	\$24,939,340.58	\$1,099,131

- The table presents various scenarios with average revenue per sale ranging from \$100 to \$4,300.
- For each scenario, we compare the old and new total revenue, profit/loss, and profit growth.

$$\text{Break Even Revenue} = \frac{\$200,000}{\text{Additional Sales}}$$

Calculation: $\$200,000 / 302 \approx \661.98

It indicates that each sale needs to generate at least \$661.98 in revenue for the new tool to be cost-neutral.

Key Insights

❑ Loss Threshold

- When the average revenue per sale is below \$700, the new tool results in a net loss, with the highest loss at \$100 per sale (\$-1,707,959.48).
- The break-even point is around \$700 per sale, where profit growth becomes positive (\$11,487).

❑ Profitability

- As the average revenue per sale increases above \$700, the new tool begins to generate profit.

❑ Revenue Impact

- The higher the revenue per sale, the more substantial the profit growth. For example, at \$2,300 per sale, the profit growth is \$494,884.

Assumptions & Conclusion

❑ Assumptions

- This analysis assumes that each sale generates consistent revenue across different scenarios.
- The primary assumption is that the new tool improves the conversion rate but does not alter the number of opportunities generated.

❑ Conclusion

- Given the increase in Customer Acquisition Cost (CAC) by 4.13%, the new tool results in a higher acquisition cost per customer. Without knowing the exact revenue per sale, it is challenging to determine the tool's profitability conclusively. However, based on the break-even analysis:
 - If the average revenue per sale is below \$661.98, the new tool is not a worthwhile investment as it leads to net losses.
 - If the average revenue per sale is above \$700, the tool starts generating profit, with increasing profitability at higher revenue levels.

Thank you!!