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Individual Case Report for:

Zoëcon Corporation
Insect Growth Regulators

MKTG 5150

Marketing Management

Spring 2023

The Problem

Should Zoëcon commercialize the Strike Roach Ender brand by expanding distribution to the 19-city market area in the Southeast United States?

Recommendation

Zoëcon should not commercialize the Strike Roach Ender brand by expanding distribution to the 19city market area in the Southeast United States. The following analysis provides the rationale for this recommendation.

Economic Analysis

The following paragraphs examine the results from Zoëcon's Strike Roach-Ender test market and extrapolate those results to the 19-city area targeted for commercialization.

Test market results. The test market was conducted in four cities that were "representative of the 19-city market area where the product was sold. At the end of the test, the product was found to be known to 57% of the households in the test market. Of the households that purchased pesticides during the test period, 30% of them tried the new product. The estimated market size was calculated to be approximately 22 million households, based on a predicted $400,000,000 in sales for all consumer pesticides in 1985. The test cities represented 5.3% of the total market size, which equates to 1.17 million households.

Test market sales results. Table 1 presents the sales mix, weighted average price, and unit contribution for two different products Aerosol and Fogger. Aerosol costs $3.14 per unit, whereas fogger costs $2.79. Aerosol costs $1.41 per unit, whereas fogger costs $1.26 per unit. Fogger's unit contribution is $1.53, and Aerosol's is $1.73. The two goods' respective sales mix is 66% and 34%. The product line's weighted average price is $3.02, and the average unit contribution is $1.66. The product line's contribution margin is 55%.

Table 2 contains estimates of unit and dollar sales from initial product trial and repeat purchases using the chain ratio method. The manufacturer's weighted average pricing is shown in the table along with the number of households, buy rate, units per household, and total number of trials and repeat purchases. Based on this data, the table shows the estimated unit and dollar sales as well as the overall unit and dollar sales for the initial trial and subsequent purchases. An estimated 91,260 units were sold during the original trial, and an additional 73,710 units were sold because of repeat sales, for a total of 164,970 units. Total dollar sales from the original trial and subsequent purchases were $498,209, for a total of $275,605 and $222,604 respectively.

Test market income statement. The test market income statement, as shown in Table 3, shows a net loss of $(1,204,150) for the 6-month period ending October 31, 1985. Aerosol sales accounted for $328,818 of the $498,209 total sales for the time period, while fogger sales accounted for $169,319 of those sales. There was a $273,850 gross margin. The period's total marketing costs came to $1,478,000, which was far more than the gross margin and led to the huge net loss.

The TM data seems to offer insightful data on consumer awareness, first impressions, and repeat purchases. The net loss, however, raises the possibility that it may be difficult to turn awareness and the initial trial into recurrent purchases. The TM's substantial marketing costs were evidence that the business was spending a lot of money advertising the good. To address the issues found during the test market, it could be required to reevaluate the marketing plan or product design.

Test market break-even Analysis. Table 4 presents break-even estimates for the test market in units, dollars, and market share. The corporation would need to control more than twice the size of the relevant market, according to the break-even market share estimate of 204%. This is probably a result of the high launch-related fixed costs. In contrast to the estimated 204% break-even market share, the actual market share generated from the test market is 38%. This implies that the business has not yet achieved break-even and may need to think about changing their pricing strategy or lowering their fixed costs in order to increase profitability.

Overall, the test market findings show that the company has not yet attained profitability and that, in order to enhance their financial performance, their strategy needs to be adjusted.

Break-Even Units: 890,361
Break-Even Dollars: $2,687,273
Break-Even Market Share: 204%

Sales projections for commercialization. The process of making the projections for commercialization takes the factors used in the chain ratio method of the 4-City test market to predict sales, expenses, and break-even for the more significant 19-City estimates, as shown in Tables 5 and 6. In this case, the chain ratio approach is used to calculate the sales, expenses, and break-even points for the 19-city estimates, which are based on the outcomes of the test market's four cities. To determine the size of the whole market, the chain ratio technique multiplies a number of variables. The 1985 total market size, the market growth rate, the share of ants and roaches, the share of cities in the market, the share of sales in supermarkets, and the share of sales accounted for by aerosol and fogger goods are all pertinent factors in this scenario. Using these factors, the total market size for the 19-city projections is estimated to be $72,934,000, with an estimated relevant market size for roach products of $200,000,000.

Based on the estimates in Table 5, sales projections for commercialization can be computed as follows:

Total units sold: 3,102,000 (from Table 5)

Manufacturer's price: $3.02 (from Table 5)

Total sales dollars: $9,368,040 (from Table 5)

Annualized sales dollars: $12,490,720 (from Table 6)

Sales projections. Table 5 presents the results of applying test market sales data to the 19-city market area. By transferring the test market sales data to the 19-city market area, the chain ratio approach was employed to estimate sales from commercialization. Using this approach, we predict that the market area of 19 cities would have $9,368,040 in total sales. This estimate is based on the 22,000,000 households in the market having a predicted purchase rate of 30%, with each household buying an average of 3.5 units at a manufacturer's suggested retail price of $3.02 each. 3, 102,000 units are thought to have been sold in the 19-city market area.

Pro forma income statement. The income statement for the 19-city projection, Table 6, together with the break-even analysis, gives the best picture for analyzing profitability and whether to move forward. The income statement for the 19-city projection displays the anticipated financial outcomes for the marketing of the Roach Ender product line, as well as three cost scenarios (A, B, and C) for marketing expenses. Scenario A suggests a per-person advertising cost of $20 million, while Scenario B assumes $5 million is spent on advertising per city and Scenario C assumes a total advertising cost of $10 million. The income statement also features a break-even analysis for each of the three scenarios. The Roach Ender product line is expected to generate $12,490,720 in sales in the 19-city market area, with a gross margin of $6,869,896 and a cost of goods sold of $5,620,824. Marketing is expected to be the highest expense, with each scenario estimating different advertising costs. While Scenario B predicts a net income before taxes of $1,869,896, Scenarios A and C are both projected to have a negative net income before taxes. To calculate the break-even point for each scenario, a fixed cost estimate is provided, with Scenario A at $20 million, Scenario B at $5 million, and Scenario C at $10 million. The break-even points for Scenarios A, B, and C are $36,363,636, $9,090,909, and $18,181,818, respectively. The break-even units for Scenarios A, B, and C are 12,040,939, 3,010,235, and 6,020,470, respectively. Additionally, the income statement displays the break-even market share for Scenarios A and B, with Scenario A anticipating a 49.86% market share for the ant and roach market, and Scenario B estimating a market share of 12.46% for the same market.

When analyzing the three cost scenarios, scenario A appears to be implausible since it requires an advertising cost of $20 million per person, which surpasses the industry standards by a significant margin. Scenario C also seems impractical since an advertising cost of $10 million would not be sufficient to achieve substantial market penetration. On the other hand, scenario B, which involves an advertising cost of $5 million per city, appears to be the most feasible option since it yields a net income before tax of $1,869,896 and a break-even market share of 12.46% for the ant and roach market.

To summarize, the income statement and break-even analysis in Table 6 suggest that the Roach Ender product line can be profitable in the 19-city market. Among the three cost scenarios, Scenario B appears to be the most feasible, with a per city advertising expenditure of $5 million. It yields a net income before tax of $1,869,896 and a break-even market share of 12.46% for the ant and roach market.

Break-even analysis. The lower portion of Table 6 presents the break-even analysis for commercialization. Table 6 provides break-even estimates for three fixed cost alternatives - Per Capita, Per City, and Rule of Thumb. The Fixed Cost Estimate for these alternatives are $20,000,000, $5,000,000, and $10,000,000, respectively. The Break-Even Dollars are $36,363,636, $9,090,909, and $18,181,818, respectively, while the Break-Even Units are 12,040,939, 3,010,235, and 6,020,470, respectively. The Break-Even Market Share (Ant & Roach) estimates for the three alternatives are 49.86%, 12.46%, and 24.93%, respectively, and the Break-Even Market Share (Roach) estimates are 99.72%, 24.93%, and 49.86%, respectively. The estimates suggest that capturing a significant portion of the market is necessary for Zoëcon Corporation to break-even, especially for the Per Capita alternative. However, the Per City and Rule of Thumb alternatives have more achievable market share estimates. Additionally, comparing the break-even market share estimates with those held by competitors can provide insight into the implications for Zoëcon Corporation's competitiveness if they can capture the estimated market share.

Consumers' Acceptance of IGR-based Insecticides

The success of a new product launch heavily depends on consumer behavior, and this is particularly true for IGR-based insecticides. It is crucial to gauge consumer receptiveness towards this novel concept of insect control. Consumers are increasingly conscious of the harmful effects of traditional insecticides on health and the environment, leading to a rising interest in eco-friendly and safer alternatives. IGR-based insecticides are a promising option as they are specifically targeted towards pests, without causing harm to humans, pets, or beneficial insects. However, consumers may have varying levels of awareness and knowledge regarding IGRs, which can affect their purchasing behavior and acceptance of the product.

Competition: To succeed in the insecticide market, Zoëcon Corporation must navigate through fierce competition from both well-established brands and generic products. Evaluating the market share and pricing strategies of its competitors is crucial for the company to determine its competitive position and pricing strategy. By doing so, Zoëcon can identify gaps in the market and develop a pricing strategy that is both competitive and profitable. It is also important for the company to understand the strengths and weaknesses of its competitors to develop effective marketing and positioning strategies. Ultimately, having a comprehensive understanding of the competitive landscape will enable Zoëcon to make informed decisions that can help it gain a foothold in the market and achieve its business objectives.

Distribution Channels: The availability of SRE in both retail stores and online platforms will be a crucial factor in determining its success. To ensure the widespread availability of their product, Zoëcon Corporation must carefully evaluate their distribution channels and determine whether they have the necessary partnerships and agreements in place. This will involve conducting market research to identify the most effective distribution channels for their target audience and working with retailers and online platforms to ensure that SRE is prominently featured and easily accessible to consumers. Additionally, Zoëcon Corporation may need to develop strategic partnerships with distributors and wholesalers to reach a wider audience and ensure that their product is readily available to customers. By evaluating their distribution channels and implementing effective strategies to ensure the widespread availability of SRE, Zoëcon Corporation can increase their chances of success in the insecticide market.

Regulatory Compliance: Zoëcon Corporation should consider federal and state regulations concerning the use and distribution of insecticides. Changes in these regulations may influence the company's ability to sell and market their products. Therefore, it is important for the company to evaluate the regulatory landscape before launching SRE to ensure compliance with all relevant regulations.

Table 1

4-City Sales Mix and Margin Analysis

	Aerosol	Fogger
Unit Price	$3.14	$2.79
Unit Cost	$1.41	$1.26
Unit Contribution	$1.73	$1.53
Sales Mix	66%	34%
Weighted Avg. Price [1]	$ 3.02	
Weighted Avg. Unit Contribution [2]	$ 1.66	
Contribution Margin [3]	55%	

[1] Weighted Avg. Unit Price = (aerosol unit price * sales mix) + (fogger unit price * sales mix) = (3.14 * .66) + (2.79 * .34)=$3.02

[2] Weighted Avg. Unit Contribution = (aerosol unit contribution * sales mix) + (fogger unit contribution * sales mix) = (1.73* .66) + (1.53* .34)=$1.66

[3] Contribution Margin = weighted avg. unit contribution / weighted avg. unit price (1.66 / 3.02)=54.97%=55%

Table 2

4-City Trial Sales Analysis

Estimation of Dollars and Units Sold

	Initial Trial	Repeat	Total
Households	1,170,000	70,200[1]	
Purchase Rate	6%	30%	
Units per Household	1.3	3.5	
Manufacturer's Weighted Average Price	$3.02	$3.02	
Unit Sales [2]	91,260	73,710	164,970
Dollar Sales [3]	$275,605	$222,604	$498,209

1 Repeat households are 30% of the number that made an initial purchase.

2 1st time units are 6% of the total households x an average of 1.3 purchases per household = (1,170,000*0.06*1.3) = 91,260

Repeat units are the number of households x an average of 3.5 purchases per household.= (70,200*0.30*3.5) = 73,710

3 Dollars are the number of units x the manufacturer's price.= 91,260*$3.02 = $275,605, 73,710*$3.02 = $222,604

Table 3

Zoëcon Corporation
Income Statement
For the 6-Month Period Ending October 31, 1985
(Representing the 4-city test market)

Sales [1]		
Aerosol	$328,818	
Fogger	$169,319	$498,209
Cost of goods sold [2]		
Aerosol	$149,077	
Fogger	$76,288	$224,259
Gross margin		$273,850
Marketing expenses [3]		
Promotion & Advertising	$1,016,000	
Setup/Auditing	$377,000	
Marketing Research	$65,000	
Miscellaneous	$20,000	$1,478,000
Net income before tax		$1,204,150

1 See Table 2 for the computation of sales dollars and units. Total sales were $498,209. Aerosol = $498,209 * 0.66 = $328,818. Fogger = $498,209 * 0.34 = $169,319

2 Cost of goods sold = units from Table 2 * unit cost. Total COGS = 164,970 * $1.36(Weighted Average COGS from CGT-6) = $224,359. Aerosol COGS = $224,359 * 0.66 = $149,077, Fogger COGS = $224,359 * 0.34 = $76,288

3 See case Exhibit 4 for marketing expenses details.

Table 4

4-City Break-Even Analysis

Break-Even Item	Estimates
Expenses [1]	$1,478,000
Break-Even Dollars [2]	$2,687,273
Break-Even Units [3]	890,361
Break-Even Market Share [4]	204%
Market Share Earned[5]	38%

1 Expenses in the first column reflect actual expenses; however, in the second column, only the expense not considered to be one-time expenses are included, and still, the break-even market share is 70.13%.

2 Break-Even Dollars = total fixed costs/contribution margin (see Table 2) = $1,478,000/0.55 = $2,687,272.72 = $2,687,273

3 Break-Even Units = total fixed costs / (weighted avg. unit price minus weighted avg. unit cost) [see Table 2 for details] = $1,478,000/ (3.02-1.36) = 890,361.4458 = 890,361

4 Break-Even Market Share = break-even dollars divided by relevant market dollar size [see Table 2 for details] = $2,687,273/$1,317,792

5 Earned market share = total dollar sales divided by estimated market size = $496,506/1,317,792

Table 5

19-City Projections Financial Analysis

Estimation of Dollars and Units Sold [1]

	Initial Trial	Repeat	Total
House Holds	22,000,000	1,320,000[2]	
Purchase Rate	6%	30%	
Units per Household	1.3	3.5	
Manufacturer's Price	$3.02	$3.02	
Dollars	$5,182,320	$4,815,720	$9,368,040
Units	1,716,000	1,386,000	3,102,000

[1] Estimated dollars and units sold to use the same calculations as Table 2.

[2] Six percent of the 22,000,000 households engaging in the initial trial.

Table 6

Zoëcon Corporation
***Pro Forma* Income Statement**
For the 12-Month Period Ending December 31, 1986
(Representing the 19-city projections)

Sales [1]				
Aerosol	$ 8,243,875			
Fogger	$4,246,845	$ 12,490,720		
Cost of goods sold [2]				
Aerosol	$ 3,709,744			
Fogger	$1,911,080	$ 5,620,824		
Gross margin		$ 6,869,896		
Marketing expenses [3]				
A-Promotion & Advertising (per capita)		$ 20,000,000		
B-Promotion & Advertising (per city)			$ 5,000,000	
C-Promotion & Advertising (ROT)				$10,000,000
Net income before tax		$ 13,130,104	$1,869,896	$ 3,130,104

1 See Table 5 for the computation of sales dollars and units. Test market sales have annualized by dividing with 0.75.
2 Cost of goods sold = units from Table 5 * unit cost.
3 Marketing Expense A (per capita) was derived by advertising spend derived from exhibit 6 in case/5.3% of market = $1,016,000/0.053 = $19,169,811 rounded to $20,000,000
Marketing Expense B (per city) was derived by was derived by (advertising spend/Number of cities in market)*total cities = ($1,016,000/4) * 19 = $4,826,000 rounded to $5,000,000

Break-Even Analysis

	Fixed Cost Alternatives		
Break-Even Metric	Per Capita	Per City	Rule of Thumb
Fixed Cost Estimate	$20,000,000	$5,000,000	$10,000,000
Break-Even Dollars	$36,363,636	$9,090,909	$18,181,818
Break-Even Units	12,040,939	3,010,235	6,020,470
Break-Even Market Share (Ant & Roach) [1]	49.86%	12.46 %	24.93 %
Break-Even Market Share (Roach) [2]	99.72 %	24.93 %	49.86 %

1 Total Market is $400,000,000. Estimate is derived via the chain ratio method:
Total Market = $400 Mil (1985 Total) * 1.1(mkt growth rate %) * 40% (ant & roach %) * 80% (19 cities) * 70% (supermarket %) * 74% (aerosol & fogger %) = $72,934,000

2 Relevant Market is $200,000,000, derived using the chain ratio method: Relevant market = Total market * 50% (Roach-only estimate).