**The Flamingo Grill**

**Case Report**

By: Rebecca Johnson

**Executive Report**

**Background**

The Flamingo Grill is an upscale restaurant located in St. Petersburg, Florida. Flamingo’s management team hired advertising firm Haskell & Johnson to recommend how their advertising budget of $279,000 should be allocated across television, radio, and newspaper advertisements.

**Objective**

Maximize the total exposure rating across all media, while reaching at least 100,000 new customers.

**Methodology**

A Linear Mathematical Program was created. The program was then entered into Excel, and solved using Excel solver.

**Results**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Advertising Media** | **Television** | | **Radio** | | **Newspaper** | |
|  | T1 | T2 | R1 | R2 | N1 | N2 |
| **Recommended Number of Ads** | 10 | 5 | 15 | 18 | 20 | 10 |
|  |  |  |  |  |  |  |
| **Max Total Exposure Rating** | 2160 |  |  |  |  |  |

**Recommendation**

I recommend that The Flamingo Grill uses 15 television ads, 33 radio ads, and 30 newspaper ads.

**Rationale**

Following this recommendation will maximize the Total Exposure Rating.

**Managerial Report**

1. **Advertising Schedule**:

|  |  |  |
| --- | --- | --- |
| Media | Number of Ads | Budget |
| Television | 15 | $150,000 |
| Radio | 33 | $99,000 |
| Newspaper | 30 | $30,000 |
| Total | 78 | $279,000 |

**Total Exposure**: 2160

**Total New Customers Reached**: 127,100

2. The shadow price for the budget constraint is 0.0055. So, if an additional $10,000 were added to the advertising budget, total exposure will increase by 55 points.

3. The recommended solution is not very sensitive to the exposure rating coefficients. For example, there is a huge difference in the new customers reached and number of ads suggested in the part 1 and 4 schedules, but the total exposure does not change as drastically.

4. **Advertising Schedule:**

|  |  |  |
| --- | --- | --- |
| Media | Number of Ads | Budget |
| Television | 14 | $140,000 |
| Radio | 28 | $84,000 |
| Newspaper | 55 | $55,000 |
| Total | 97 | $279,000 |

**Total Exposure:** 2130

**Total New Customers Reached:** 139,600

5. I would recommend using the advertising schedule from part 4 instead of the original schedule because more new customers would be reached and the exposure would only decrease by 30 points.

**Appendix**

Please see the attached Excel documents.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Initial Exposure | | | |  | After Initial Exposure | | | |
| **Advertising Media** | **Exposure Rating per Ad** | **New Customers per Ad** | **Cost per Ad** |  | **Advertising Media** | **Exposure Rating per Ad** | **New Customers per Ad** | **Cost  per Ad** |
| Television | 90 | 4000 | $10,000 |  | Television | 55 | 1500 | $10,000 |
| Radio | 25 | 2000 | $3,000 |  | Radio | 20 | 1200 | $3,000 |
| Newspaper | 10 | 1000 | $1,000 |  | Newspaper | 5 | 800 | $1,000 |

Exposure rating and new customers reached decreases after **10 TV ads**, **15 radio ads**, and **20 newspaper ads**.

New Customers Reached > 100,000

**Advertising Budget** = $279,000; (Television ads > $140,000; Radio ads < $99,000; Newspaper ads > $30,000)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Decision Variables:** |  |  |  |  |  |
| T1= number of television ads with a rating of 90 and 4000 new customers | | | | | |
| T2= number of television ads with a rating of 55 and 1500 new customers | | | | | |
| R1= number of radio ads with a rating of 25 and 2000 new customers | | | | | |
| R2= number of radio ads with a rating of 20 and 1200 new customers | | | | | |
| N1= number of newspaper ads with a rating of 10 and 1000 new customers | | | | | |
| N2= number of newspaper ads with a rating of 5 and 800 new customers | | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Objective Function and Constraints** | | |  |  |  |  |  |
| Max | 90T1 + 55T2 + 25R1 + 20R2 + 10N1 + 5N2 | | | | | |  |
| s.t. | T1 < 10 |  |  |  |  |  |  |
|  | R1 < 15 |  |  |  |  |  |  |
|  | N1 < 20 |  |  |  |  |  |  |
|  | 10,000T1 + 10,000T2 + 3,000R1 + 3,000R2 + 1,000N1 + 1,000N2 < 279,000 | | | | | | |
|  | 4,000T1 + 1,500T2 + 2,000R1 + 1,200R2 + 1,000N1 + 800N2 > 100,000 | | | | | |  |
|  | -2T1 + -2T2 + R1 + R2 > 0 | |  |  |  |  |  |
|  | T1 + T2 < 20 |  |  |  |  |  |  |
|  | 10,000T1 + 10,000T2 > 140,000 | | | | | |  |
|  | 3,000R1 + 3,000R2 < 99,000 | |  |  |  |  |  |
|  | 1,000N1 + 1,000N2 > 30,000 | |  |  |  |  |  |
|  | T1, T2, R1, R2, N1, N2 > 0 | |  |  |  |  |  |

**Optimal Solution**: **Budget Allocation:**

T1 = 10, T2 = 5; 10 + 5 = 15 Television ads 15 \* 10,000 = $150,000

R1 = 15, R2 = 18; 15 + 18 = 33 Radio ads 33 \* 3,000 = $99,000

N1 = 20, N2 = 10; 20 + 10 = 30 Newspaper ads 30 \* 1,000 = $30,000

If $10,000 is added to budget: 10,000 \* 0.0055(shadow price) = 55 points

Part 4 Exposure: 90(10) + 55(4) + 25(15) + 20(13) + 10(20) + 5(35) = 2130