|  |  |
| --- | --- |
|  | **“GOOd For You”** |

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**Introduction**

This document represents the cost-benefit analysis for the alternatives. The document gives the detail description of the investment and operating cost followed by NPV ,payback period, ROI , IRR. In addition to it there is Multiple Objective Analysis for the non-financial variables.

**1)Acquisition**

The merger and acquisition have two different perspective. In this document we had tried to analyze both views in accordance to cost benefit ratio , NPV , cashflow and payback period. We have calculated MOA for non-financial variable.

Advantages

* This will allow to increase value of the new entity and helps in cost savings.
* Change in economies by sharing the resources and services.

Disadvantages

* Changing to M&A, employees of small firm might need to develop some more skills
* Company may have to face major difficulties thanks to friction and internal competition
* The return of the share of company that may cause buyouts of other company was less than the return of sector as a whole

Initially we divided into operating and investment cost. The Calculation is based on the time **interval of 5 years**. The summation of investment and operating will give the total cost. The profit is calculated with the help of revenue and margin.

Note: The revenue and margin are the assumptions.

DATA: **Acquisition**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Total** |
| **Investment Cost** |  |  |  |  |  |  |
| Truck | $50,000 |  |  |  |  | $50,000 |
| Inventory(equipment) | $4,000 |  |  |  |  | $4,000 |
| Licensing cost | $500 |  |  |  |  | $500 |
| Training | $1,000 |  |  |  |  | $1,000 |
| Register / POS | $1,000 |  |  |  |  | $1,000 |
| Uniforms / T-Shirts | $500 |  |  |  |  | $500 |
| Paper Products (Plates / Napkins, etc.) | $300 |  |  |  |  | $300 |
| Other Expenses (Like a Chalk Menu) | $2,000 |  |  |  |  | $2,000 |
| Fire Extinguisher | $300 |  |  |  |  | $300 |
| **Operating Cost** |  |  |  |  |  |  |
| Commissary | $14,400 | $14,400 | $14,400 | $14,400 | $14,400 | $72,000 |
| Phone / Internet | $1,200 | $1,200 | $1,200 | $1,200 | $1,200 | $6,000 |
| Fuel | $4,500 | $4,500 | $4,500 | $4,500 | $4,500 | $22,500 |
| Labor | $40,000 | $40,000 | $40,000 | $40,000 | $40,000 | $200,000 |
| Repairs | $3,000 | $3,000 | $3,000 | $3,000 | $3,000 | $15,000 |
| Food / Beverage Restock | $72,000 | $72,000 | $72,000 | $72,000 | $72,000 | $360,000 |
| Paper Product Restock | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 | $30,000 |
| Parking or leasing every week | $30,000 | $30,000 | $30,000 | $30,000 | $30,000 | $150,000 |
| **Total** | **$230,700** | **$171,100** | **$171,100** | **$171,100** | **$171,100** | **$915,100** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Total Operating cost** | **$855,500** |  |  |  |  |  |
| **Total Investment** | **$59,600** |  |  |  |  |  |

This is the total cost for very first year

Total Cost for 5 years

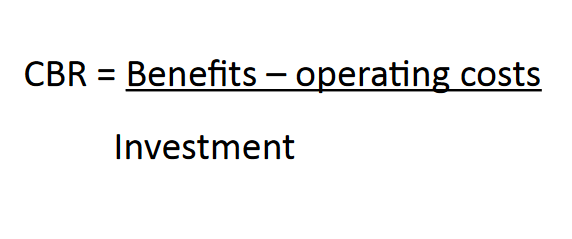
**Profit :** After the sales and voiding out the cost the value obtained is the profit amount generated for solution.

**Profit = Revenue \* Margin**

Total net profit of 5 years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Year 4 | Year5 | Total |
| Margin | 28% | 30% | 30% | 32% | 33% |  |
| Revenue | $645,000 | $678,904 | $699,700 | 737900 | 764000 |  |
|  |  |  |  |  |  |  |
| Benefits |  |  |  |  |  |  |
| Net Profit from Sales | $180,600 | $203,671 | $209,910 | $236,128 | $252,120 | $1,082,429 |

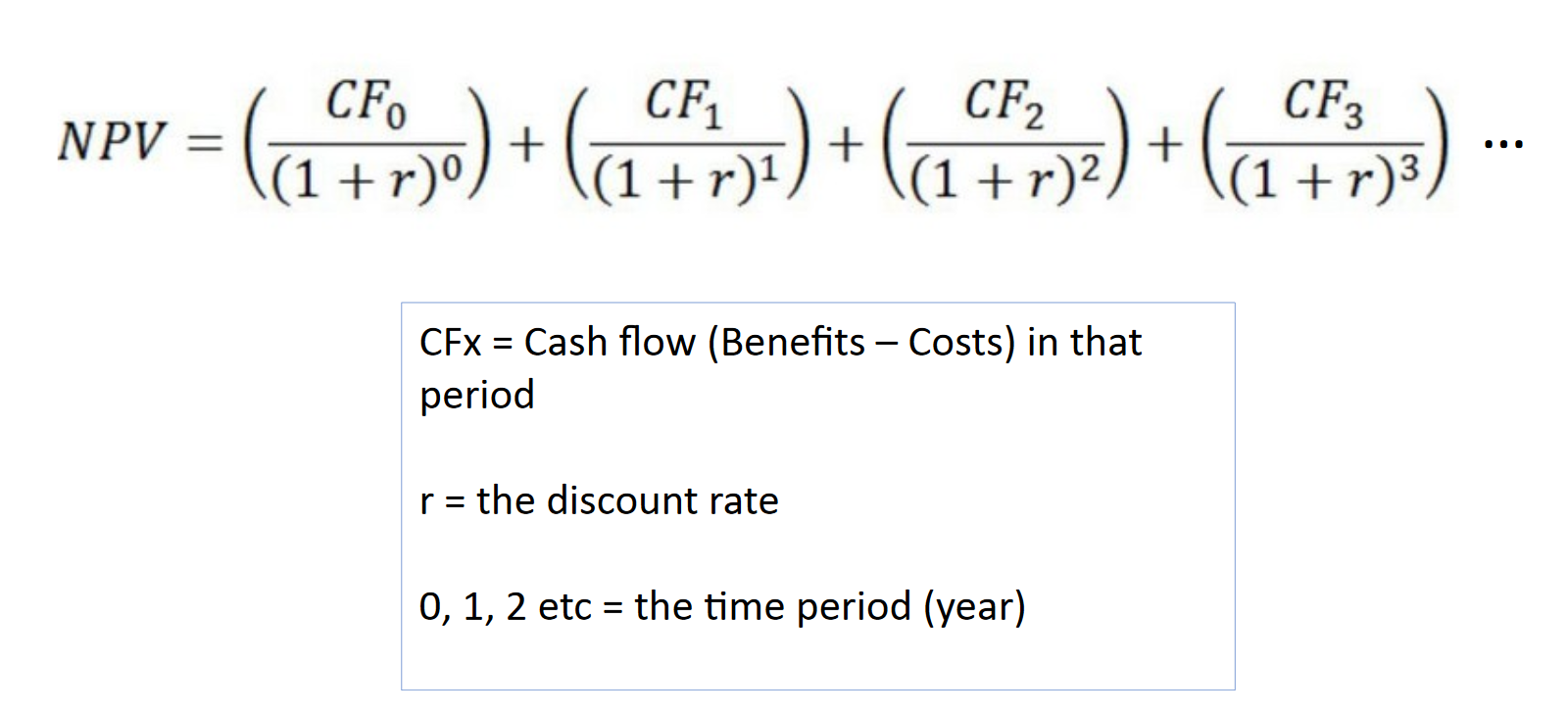
**Cost Benefit Ratio :** This ratio is the basic of thinking how benefits relates to the cost.



CBR = (1082429 -855100 )/ 59600

= **3.81**

**Net Present value:** This determines what will the cashflow and after what time the pay will be back(payback period).

The formula used for calculation is

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NPV |  |  |  |  |  |  |  |  |
|  | Year1 | year2 | year 3 | year 4 | year 5 | Total |  |  |
| Cost | $230,700 | $171,100 | $171,100 | $171,100 | $171,100 | $915,100 |  |  |
| Benefits | $180,600 | $203,671 | $209,910 | $236,128 | $252,120 | $1,082,429 |  |  |
| Cashflow | -$50,100 | $32,571 | $38,810 | $65,028 | $81,020 | $167,329 |  |  |
| Cumulative | -$50,100 | -$17,529 | $21,281 | $86,309 | $167,329 |  |  |  |
| Discounted | 10% | 10% | 10% | 10% | 10% |  |  |  |
| Discounted Amount | -$50,050 | $32,506 | $38,694 | $64,769 | $80,616 | **$166,535** |  | **NPV** |
| Cumulative (Discounted) | -$50,050 | -$17,544 | $21,150 | $85,919 | $166,535 |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  | Payback | |  |  |  |  |  |

Net Present Value = **$ 166,535**

**Payback period:** A common way that companies think about projects is when the project will break-even – i.e. start to generate positive return.

The pay back is year – **3 year**

**Return of Investment:** ROI tries to directly measure the amount of return on a particular investment, relative to the investment’s cost.

ROI = Estimated net benefits / Estimated Cost of solution

=1082429 / 915100

= **1.18%**

**Internal Return Rate (IRR) :**The Internal Rate of Return (IRR) is the discount rate that makes the NPV of a project zero.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Options:** | | | |
|  | # of Periods | | 5 | |
|  | **Adjust Cash Flow Below as Needed** | | | |
|  |  |  |  |  |
|  | **Year** | **Cash Flow** |  |  |
|  | 0 |  |  |  |
|  | 1 | (-$50,100) |  |  |
|  | 2 | (-$17,529) |  |  |
|  | 3 | $21,281 |  |  |
|  | 4 | $86,309 |  |  |
|  | 5 | $167,329 |  |  |
|  |  |  |  |  |
|  | IRR | 54.69% |  |  |

**Merger**

This will be the equal partnership between two companies. The below data shown and calculated is according to one company participation.

DATA: **Merger**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Total** |
| **Investment Cost** |  |  |  |  |  |  |
| Truck | $30,000 |  |  |  |  | $30,000 |
| Inventory(equipment) | $2,500 |  |  |  |  | $2,500 |
| Licensing cost | $500 |  |  |  |  | $500 |
| Training | $500 |  |  |  |  | $500 |
| Register / POS | $500 |  |  |  |  | $500 |
| Uniforms / T-Shirts | $500 |  |  |  |  | $500 |
| Paper Products (Plates / Napkins, etc.) | $160 |  |  |  |  | $300 |
| Other Expenses (Like a Chalk Menu) | $1,200 |  |  |  |  | $2,000 |
| Fire Extinguisher | $160 |  |  |  |  | $160 |
| **Operating Cost** |  |  |  |  |  | $0 |
| Commissary | $8,400 | $8,400 | $8,400 | $8,400 | $8,400 | $42,000 |
| Phone / Internet | $600 | $600 | $600 | $600 | $600 | $3,000 |
| Fuel | $2,350 | $2,350 | $2,350 | $2,350 | $2,350 | $11,750 |
| Labor | $21,000 | $21,000 | $21,000 | $21,000 | $21,000 | $105,000 |
| Repairs | $1,800 | $1,800 | $1,800 | $1,800 | $1,800 | $9,000 |
| Food / Beverage Restock | $36,500 | $36,500 | $36,500 | $36,500 | $36,500 | $182,500 |
| Paper Product Restock | $3,200 | $3,200 | $3,200 | $3,200 | $3,200 | $16,000 |
| Parking or leasing every week | $14,500 | $14,500 | $14,500 | $14,500 | $14,500 | $72,500 |
| **Total** | **$124,370** | **$88,350** | **$88,350** | **$88,350** | **$88,350** | **$477,770** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Total Operating cost** | **$441,750** |  |  |  |  |  |
| **Total Investment** | **$36,960** |  |  |  |  |  |

Total Cost of 5 years

This is the total cost of very first year

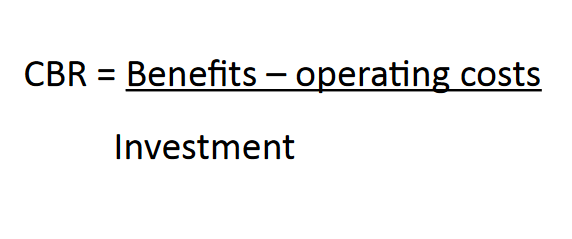
**Profit :** After the sales and voiding out the cost the value obtained is the profit amount generated for solution.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Margin | 28% | 30% | 30% | 32% | 33% |  |
| Revenue | $325,000 | $355,000 | $375,600 | 390000 | 410000 |  |
|  |  |  |  |  |  |  |
| **Benefits** |  |  |  |  |  |  |
| Net Profit from Sales | $91,000 | $106,500 | $112,680 | $124,800 | $135,300 | $570,280 |

Profit = Revenue \* Margin

Total Profit for 5 years

**Cost Benefit Ratio :** This ratio is the basic of thinking how benefits relates to the cost.

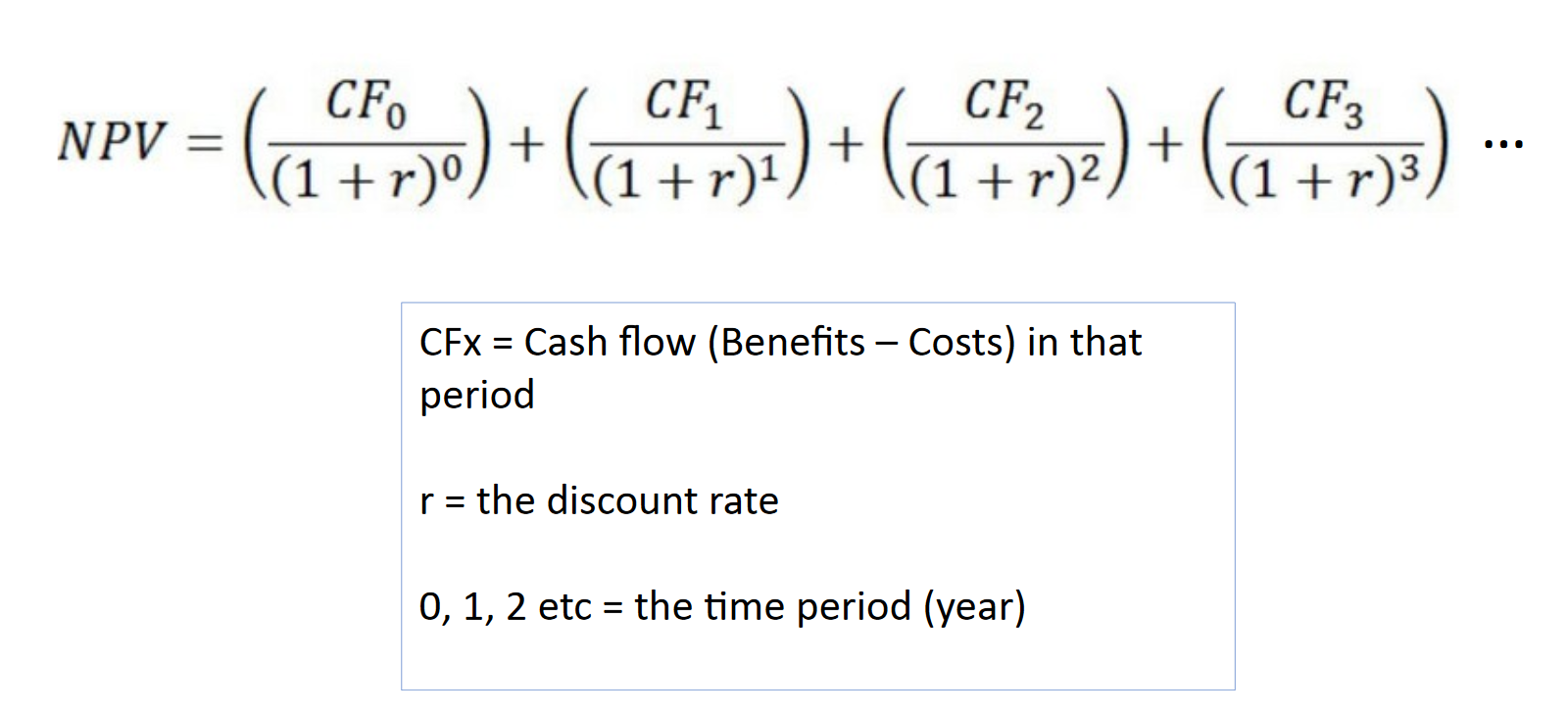


CBR = (570280 -441750 )/ 36960

= **3.48%**

**Net Present value:** This determines what will the cashflow and after what time the pay will be back(payback period).

The formula used for calculation is:



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NPV** |  |  |  |  |  |  |
|  | Year1 | year2 | year 3 | year 4 | year 5 | Total |
| Cost | $124,370 | $88,350 | $88,350 | $88,350 | $88,350 | $477,770 |
| Benefits | $91,000 | $106,500 | $112,680 | $124,800 | $135,300 | $570,280 |
| Cash Flow | -$33,370 | $18,150 | $24,330 | $36,450 | $46,950 | $92,510 |
| Cumulative | -$33,370 | -$15,220 | $9,110 | $45,560 | $92,510 |  |
| Discounted | 10% | 10% | 10% | 10% | 10% |  |
| Discounted Amount | -$33,337 | $18,114 | $24,257 | $36,305 | $46,716 | **$92,055** |
| Cumulative (Discounted) | -$33,337 | -$15,223 | $9,034 | $45,339 | $92,055 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | NPV |
|  |  | Payback | |  |  |  |

Net Present Value = **$ 92,055**

**Payback period:** A common way that companies think about projects is when the project will break-even – i.e. start to generate positive return.

The pay back is year – **3 year**

**Return of Investment:** ROI tries to directly measure the amount of return on a particular investment, relative to the investment’s cost.

ROI = Estimated net benefits / Estimated Cost of solution

=570280 / 477770

= **1.19%**

**Internal Return Rate (IRR) :**The Internal Rate of Return (IRR) is the discount rate that makes the NPV of a project zero.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Options:** | | | |
| # of Periods | | 5 | |
| **Adjust Cash Flow Below as Needed** | | | |
|  |  |  |  |
| **Year** | **Cash Flow** |  |  |
| 0 |  |  |  |
| 1 | (-$33,370) |  |  |
| 2 | (-$15,200) |  |  |
| 3 | $9,110 |  |  |
| 4 | $45,560 |  |  |
| 5 | $92,510 |  |  |
|  |  |  |  |
| IRR | 41.09% |  |  |

**Multiple Object Analysis**

**Steps to Follow:**

1)Assigning the priorities according to assign criteria

2)Changing priorities into number

3)Assigning weights with respect to criteria

4)Assigning value 100 as the base and priority number in descending order with the priority list.

5)Assigning value 10 as the base and priority number in ascending order with the priority list

6)Calculate average weights

7)Multiply the weights to the number assigned in step 2.

1. Assigning the priorities according to assign criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get Running** |
| Goodwill | High | Moderate | Medium | Older | 6 months |
| Customer Satisfaction | High | Easy | High | Younger | 4 months |
| Innovation | Medium | Difficult | Low | Younger | 2 months |
| Employee Productivity | Low | Easy | High | Older | 1 month |

1. Changing priorities into number

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get running** |
| Goodwill | 1 | 0.5 | 0.6 | 0.5 | 0.2 |
| Customer Satisfaction | 0.9 | 0.8 | 0.9 | 0.9 | 0.5 |
| Innovation | 0.4 | 0.3 | 0.4 | 0.7 | 0.7 |
| Employee Productivity | 0.1 | 0.8 | 0.8 | 0.3 | 0.9 |

1. Assigning weights with respect to criteria

|  |  |  |
| --- | --- | --- |
| **Assigning Weights** |  |  |
| Criteria | Worst | Best |
| Brand | Low | High |
| Staffing | Difficult | Easy |
| Food Traffic | Low | High |
| Demographic | Older | Younger |
| Get running | 6 months | 1 month |

1. Assigning value 100 as the base and priority number in descending order with the priority list.

Once assigned numbers in descending order and in accordance to priority , add all the number and write the total.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Food Traffic | Low | High | 100 |
| Demographic | Difficult | Easy | 80 |
| Staffing | Low | High | 60 |
| Brand | Older | Younger | 40 |
| Get running | 6 months | 1 month | 20 |
| **Total** |  |  | **300** |

1. Assigning value 10 as the base and priority number in ascending order with the priority list

Once assigned numbers in ascending order in accordance to priority , add all the umbers and write the total.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Get running | Low | High | 15 |
| Brand | Difficult | Easy | 35 |
| Staffing | Low | High | 57 |
| Demographic | Older | Younger | 78 |
| Food Traffic | 6 months | 1 month | 90 |
| **Total** |  |  | **275** |

1. Calculate Average of weights

So, the calculation of high level is taking the assigned value /Total weight of high level.(e.g. 100/300 = 0.33) and similarly for low level assigned value /Total weight of low level(e.g. 10/275 =0.32333333).All the values are calculated as the above calculation.

After getting values we made the average of both the weights.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **High level** | **Low-level** | **Avg** |
| Food Traffic | 0.33 | 0.33 | 0.33 |
| Demographic | 0.27 | 0.28 | 0.28 |
| Staffing | 0.2 | 0.21 | 0.2 |
| Brand | 0.13 | 0.13 | 0.13 |
| Get running | 0.07 | 0.05 | 0.06 |

This is the table assigning the weights and the numbers of the step 2, to make calculation easy.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Avg weight** | **Good will** | **Customer satisfaction** | **Innovation** | **Employee productivity** |
| Food Traffic | 0.33 | 0.6 | 0.9 | 0.4 | 0.8 |
| Demographic | 0.28 | 0.5 | 0.9 | 0.7 | 0.3 |
| Staffing | 0.2 | 0.5 | 0.8 | 0.3 | 0.8 |
| Brand | 0.13 | 1 | 0.9 | 0.4 | 0.1 |
| Get running | 0.06 | 0.2 | 0.5 | 0.7 | 0.9 |

1. Multiply the weights to the number assigned in step 2 and add all the total.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Avg weight** | **Good will** | **Customer satisfaction** | **Innovation** | **Employee productivity** |
| Food Traffic | 0.33 | 0.198 | 0.297 | 0.132 | 0.264 |
| Demographic | 0.28 | 0.14 | 0.252 | 0.196 | 0.084 |
| Staffing | 0.2 | 0.1 | 0.16 | 0.06 | 0.16 |
| Brand | 0.13 | 0.13 | 0.117 | 0.052 | 0.013 |
| Get running | 0.06 | 0.012 | 0.03 | 0.042 | 0.054 |
|  |  |  |  |  |  |
| **Total** | 1 | 0.58 | **0.856** | 0.482 | 0.575 |

According to calculated scenario the customer satisfaction have the highest number with the comparison to 1 (i.e. the total of the weights). So, from this, **Customer satisfaction** is the non-financial variable we are focused on.

**2)Sole proprietorship**

Following are the advantages and disadvantages of a sole proprietorship.

Advantages

* It is simple and flexible
* Involves quick decision process and they have direct relationship with customers.
* Owners can instantly establish, and it is cost effective.
* They have very little formalities and may mix their business freely.
* Freedom of operating.
* The sole proprietors can survive debts if it is a small-scale organization.

Disadvantages

* Will be very difficult to raise capital.
* Owners are subjected to personal liability for risks and debts.
* Difficulty in tracking expenses.
* High competition.
* Lack of managerial experience.
* Limited resources and finance.
* Business expansion will not work in every organization.

DATA: **Sole proprietorship**

* This can be applied to many solutions, like training, physical infrastructure and to software purchases.
* A common measure should be used to compare both cost and benefit, in this scenario we use money as our measure.
* Firstly, we listed all the costs that needed to setup a food truck and we have divided all the costs into categories.

1. Investment
2. Insurance, POS, phone, internet, wages
3. Leasing, licensing.

* Now after knowing all the costs, investments are regarded as a onetime cost which will cost the company at the initial stage to set up the business.
* All the other costs come under operational cost because the owner must spend those costs in a regular basis to run the business.

Investment is a onetime cost that is required to setup a food truck. We have listed below all the costs that we spent on to set up the business. We have mentioned from year 1 to year 5 that is our one-time investment for the truck.

Operational cost

All the costs that are required to run the business in a regular basis are called operating costs. Here are the operational costs we included from our business perspective.

* The operating costs are also considered for five years.

Total operating costs involved are calculated for a year and for five years.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Total** |
| **Investment Cost** |  |  |  |  |  |  |
| Truck | $25,000 |  |  |  |  | $25,000 |
| Kitchen Equipment | $50,000 |  |  |  |  | $50,000 |
| Kitchen Tables and Chair | $10,000 |  |  |  |  | $10,000 |
| Training | $400 |  |  |  |  | $400 |
| Uniforms and safety gears for workers | $2,000 |  |  |  |  | $2,000 |
| Fire Extinguisher | $200 |  |  |  |  | $200 |
| Other Expenses | $6,000 |  |  |  |  | $6,000 |
| **Operating Cost** |  |  |  |  |  |  |
| Licensing cost | $60,000 | $60,000 | $60,000 | $60,000 | $60,000 | $300,000 |
| Insurance | $1,200 | $1,200 | $1,200 | $1,200 | $1,200 | $6,000 |
| Commissary | $4,800 | $4,800 | $4,800 | $4,800 | $4,800 | $24,000 |
| Phone / Internet | $1,440 | $1,440 | $1,440 | $1,440 | $1,440 | $7,200 |
| Fuel | $3,000 | $3,000 | $3,000 | $3,000 | $3,000 | $15,000 |
| Labor | $36,000 | $36,000 | $36,000 | $36,000 | $36,000 | $180,000 |
| Repairs | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 | $30,000 |
| Food / Beverage Restock | $48,000 | $48,000 | $48,000 | $48,000 | $48,000 | $240,000 |
| Paper Product Restock | $4,800 | $4,800 | $4,800 | $4,800 | $4,800 | $24,000 |
| Parking fee | $8,400 | $8,400 | $8,400 | $8,400 | $8,400 | $42,000 |
| Register / POS | $1,200 | $1,200 | $1,200 | $1,200 | $1,200 | $6,000 |
| Paper Products | $240 | $240 | $240 | $240 | $240 | $1,200 |
| **Total** | **$268,680** | **$175,080** | **$175,080** | **$175,080** | **$175,080** | **$969,000** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Total Operating cost** | **$875,400** |  |  |  |  |  |
| **Total Investment** | **$93,600** |  |  |  |  |  |



Total Cost for 5 years

This is the total cost for very first year



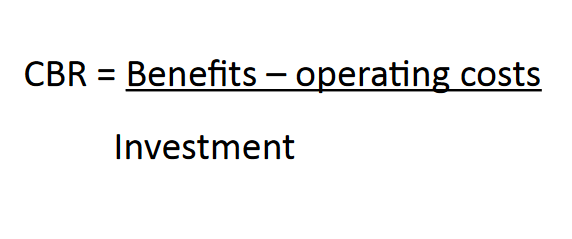
**Profit:** Profit is the difference between the overall amount earned and the amount spent to the business.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Margin | 20% | 25% | 30% | 35% | 33% |  |
| Revenue | $500,000 | $650,000 | $750,000 | $900,000 | $940,000 |  |
| **Benefits** |  |  |  |  |  |  |
| Net Profit from Sales | $100,000 | $162,500 | $225,000 | $315,000 | $310,200 | $1,112,700 |

**Cost Benefit Ratio**

Total net profit of 5 years

This ratio is the basic of thinking how benefits relates to the cost.

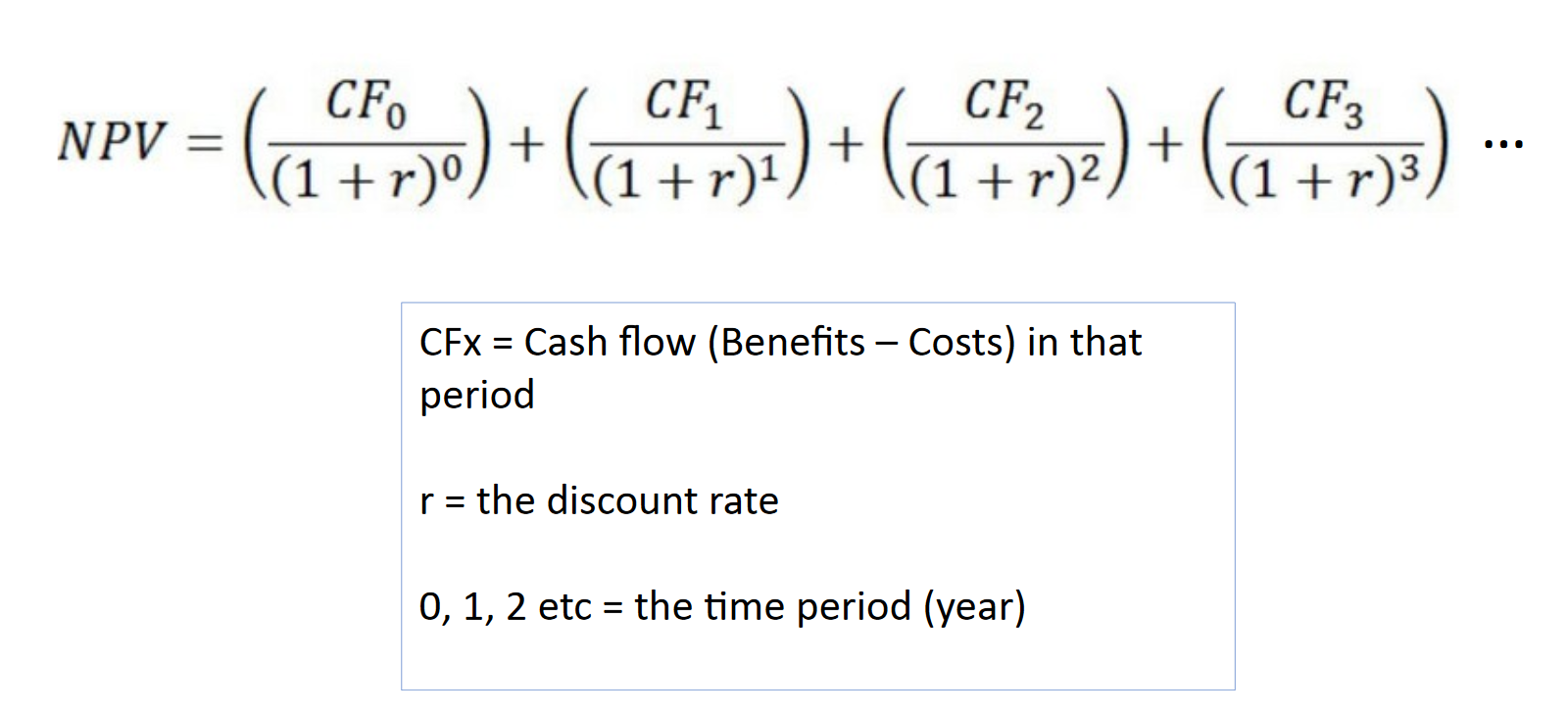


CBR = (1112700 -875400)/ 93600

= **2.54**

**Net Present value:** Net present value is the difference between the present value of cash inflows and present value of cash outflows over a period.

The formula used for calculation is:



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NPV** |  |  |  |  |  |  |
|  | **year1** | **year2** | **year 3** | **year 4** | **year 5** | **Total** |
| Cost | $268,680 | $175,080 | $175,080 | $175,080 | $175,080 | $969,000 |
| Benefits | $100,000 | $162,500 | $225,000 | $315,000 | $310,200 | $1,112,700 |
| Cash Flow | -$168,680 | -$12,580 | $49,920 | $139,920 | $135,120 | $143,700 |
| Cumulative | -$168,680 | -$181,260 | -$131,340 | $8,580 | $143,700 |  |
| Discounted | 10% | 10% | 10% | 10% | 10% |  |
| Discounted Amount | -$168,511 | -$12,555 | $49,771 | $139,362 | $134,446 | **$142,512** |
| Cumulative (Discounted) | -$168,511 | -$181,066 | -$131,296 | |  | | --- | | $8,066 | | $142,512 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  | NPV |
|  |  |  |  | Payback |  |  |

Net present value = **$142,512**

**Payback period:** The time required to recoup the funds spent as an investment. From a organization perspective it is very important.

The pay back is year – **4 year**

**Return of Investment:** It is the ratio between net profit and cost of investment. It is a performance measure used to evaluate the efficiency of an investment.

ROI = Estimated net benefits / Estimated Cost of solution

= **1.15%**

**Internal Return Rate (IRR) :**The Internal Rate of Return (IRR) is the discount rate that makes the NPV of a project zero.

|  |  |  |  |
| --- | --- | --- | --- |
| **Options:** | | | |
| # of Periods | | 5 | |
| **Adjust Cash Flow Below As Needed** | | | |
|  |  |  |  |
| **Year** | **Cash Flow** |  |  |
| 0 |  |  |  |
| 1 | (-$168,680) |  |  |
| 2 | (-$12,580) |  |  |
| 3 | $49,920 |  |  |
| 4 | $139,920 |  |  |
| 5 | $135,120 |  |  |
|  |  |  |  |
| IRR | 20.35% |  |  |

**Multiple Object Analysis**

**Steps to Follow:**

1)Assigning the priorities according to assign criteria

2)Changing priorities into number

3)Assigning weights with respect to criteria

4)Assigning value 100 as the base and priority number in descending order with the priority list.

5)Assigning value 10 as the base and priority number in ascending order with the priority list

6)Calculate average weights

7)Multiply the weights to the number assigned in step 2.

1. Assigning the priorities according to assign criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get Running** |
| Goodwill | High | Moderate | Medium | Older | 8 months |
| Customer Satisfaction | High | Easy | High | Younger | 5 months |
| Innovation | Medium | Difficult | Low | Younger | 3 months |
| Employee Productivity | Low | Easy | High | Older | 1 month |

1. Changing priorities into numbers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get running** |
| Goodwill | 0.5 | 1 | 0.7 | 0.4 | 0.3 |
| Customer Satisfaction | 0.8 | 0.3 | 0.9 | 0.9 | 0.4 |
| Innovation | 0.4 | 0.3 | 0.2 | 0.7 | 0.8 |
| Employee Productivity | 0.1 | 0.8 | 0.8 | 0.3 | 0.9 |

1. Assigning weights with respect to criteria

|  |  |  |
| --- | --- | --- |
| **Assigning Weights** |  |  |
| Criteria | Worst | Best |
| Brand | Low | High |
| Staffing | Difficult | Easy |
| Food Traffic | Low | High |
| Demographic | Older | Younger |
| Get running | 6 months | 1 month |

1. Assigning value 100 as the base and priority number in descending order with the priority list.

Once assigned numbers in descending order and in accordance to priority, add all the number and write the total

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Food Traffic | Low | High | 100 |
| Demographic | Difficult | Easy | 70 |
| Staffing | Low | High | 80 |
| Brand | Older | Younger | 60 |
| Get running | 6 months | 1 month | 40 |
|  |  |  | 350 |

1. Assigning value 10 as the base and priority number in ascending order with the priority list

Once assigned numbers in ascending order in accordance to priority, add all the numbers and write the total.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Get running | Low | High | 10 |
| Brand | Difficult | Easy | 45 |
| Staffing | Low | High | 55 |
| Demographic | Older | Younger | 60 |
| Food Traffic | 6 months | 1 month | 90 |
| **Total** |  |  | **260** |

1. Calculate Average of weights

So, the calculation of high level is taking the assigned value /Total weight of high level and similarly for low level assigned value /Total weight of low level. All the values are calculated as the above calculation.

After getting values we made the average of both the weights.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **High level** | **Low-level** | **Avg** |
| Food Traffic | 0.29 | 0.35 | 0.32 |
| Demographic | 0.20 | 0.23 | 0.22 |
| Staffing | 0.23 | 0.21 | 0.22 |
| Brand | 0.17 | 0.17 | 0.17 |
| Get running | 0.11 | 0.04 | 0.08 |

This is the table assigning the weights and the numbers of the step 2, to make calculation easy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Avg weight** | **Good will** | **Customer satisfaction** | **Innovation** | **Employee productivity** |
| Food Traffic | 0.32 | 0.7 | 0.9 | 0.2 | 0.8 |
| Demographic | 0.22 | 0.4 | 0.9 | 0.7 | 0.3 |
| Staffing | 0.22 | 1 | 0.3 | 0.3 | 0.8 |
| Brand | 0.17 | 0.5 | 0.8 | 0.4 | 0.1 |
| Get running | 0.08 | 0.3 | 0.4 | 0.8 | 0.9 |

1. Multiply the weights to the number assigned in step 2 and add all the total.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Avg weight** | **Good will** | **Customer satisfaction** | **Innovation** | **Employee productivity** |
| Food Traffic | 0.32 | 0.22 | 0.28 | 0.06 | 0.25 |
| Demographic | 0.22 | 0.09 | 0.19 | 0.15 | 0.06 |
| Staffing | 0.22 | 0.22 | 0.07 | 0.07 | 0.18 |
| Brand | 0.17 | 0.09 | 0.14 | 0.07 | 0.02 |
| Get running | 0.08 | 0.02 | 0.03 | 0.06 | 0.07 |
|  |  |  |  |  |  |
| Total | 1 | 0.64 | **0.71** | 0.41 | 0.58 |

According to calculated scenario the customer satisfaction has the highest number with the comparison to 1 (i.e. the total of the weights). So, from this, **Customer satisfaction** is the non-financial variable we are focused on.

**3)Marketing and Advertisement**

In this document we had tried to analyze both views in accordance to cost benefit ratio , NPV , cashflow and payback period. We have calculated MOA for non-financial variable.

Initially we divided into operating and investment cost. The Calculation is based on the time interval of 5 years. The summation of investment and operating will give the total cost. The profit is calculated with the help of revenue and margin.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Total** |
| **Investment Cost** |  |  |  |  |  |  |
| Capital | $ 72,000 | $ - | $ - | $ - | $ - | $ 72,000 |
| Marketing Training | $ 7,200 | $ - | $ - | $ - | $ - | $ 7,200 |
| Loyalty Program | $ 7,200 | $ - | $ - | $ - | $ - | $ 7,200 |
| Social Media Marketing | $ - | $ - | $ - | $ - | $ - | $ - |
| hoardings | $ 4,320 | $ - | $ - | $ - | $ - | $ 4,320 |
| business cards | $ 3,600 | $ - | $ - | $ - | $ - | $ 3,600 |
| **Operation cost** |  |  |  |  |  |  |
| advertisement cost | $ 7,200 | $ 7,200 | $ 7,200 | $ 7,200 | $ 7,200 | $ 36,000 |
| design logo cost | $ 2,160 | $ 2,160 | $ 2,160 | $ 2,160 | $ 2,160 | $ 10,800 |
| sales promotion expenses | $ 7,200 | $ 7,200 | $ 7,200 | $ 7,200 | $ 7,200 | $ 36,000 |
| printing cost | $ 5,040 | $ 5,040 | $ 5,040 | $ 5,040 | $ 5,040 | $ 25,200 |
| news paper | $ 1,440 | $ 1,440 | $ 1,440 | $ 1,440 | $ 1,440 | $ 7,200 |
| brochures | $ 5,040 | $ 5,040 | $ 5,040 | $ 5,040 | $ 5,040 | $ 25,200 |
| **Total** | **$ 122,400** | **$ 28,080** | **$ 28,080** | **$ 28,080** | **$ 28,080** | **$ 234,720** |
|  |  |  |  |  |  |  |
| **Total Operating cost** | **$ 140,400** |  |  |  |  |  |
| **Total Investment** | **$ 94,320** |  |  |  |  |  |

Note: The revenue and margin are the assumptions.

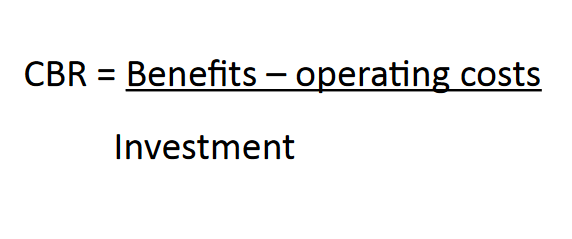
**Profit:** After the sales and voiding out the cost the value obtained is the profit amount generated for solution.

**Profit = Revenue \* Margin**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Margin | 20% | 20% | 22% | 24% | 27% | Total |
| Revenue | $110,000 | $260,000 | $280,000 | 295000 | 300000 |  |
| **Benefits** |  |  |  |  |  |  |
| Net Profit from Sales | $22,000 | $52,000 | $61,600 | $70,800 | $81,000 | **$287,400** |

Total net profit of 5 years

**Cost Benefit Ratio:** This ratio is the basic of thinking how benefits relates to the cost.

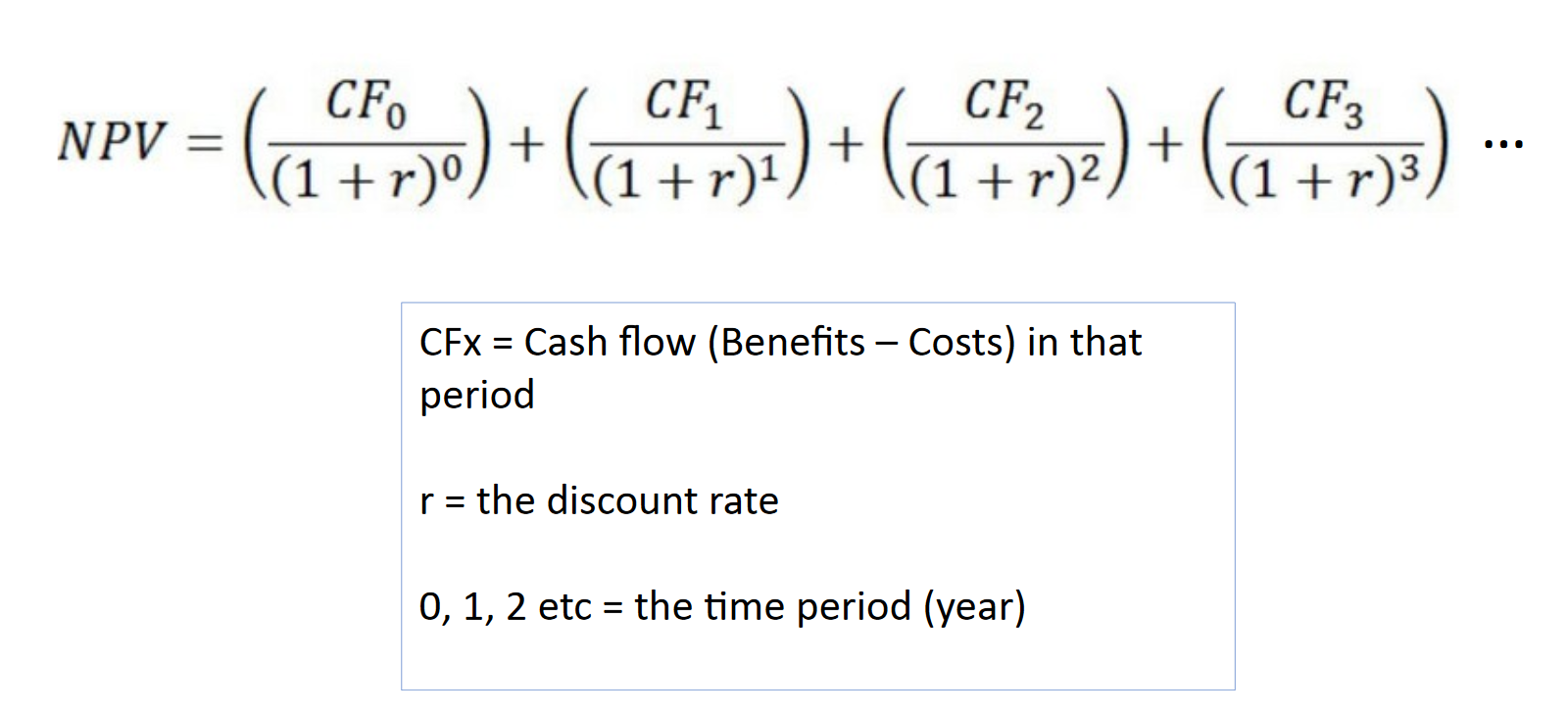


CBR = (287,400-140,400)/ 94,320

= **1.56%**

**Net Present value:** This determines what will the cashflow and after what time the pay will be back(payback period).

The formula used for calculation is:



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NPV** |  |  |  |  |  |  |
|  | **year1** | **year2** | **year 3** | **year 4** | **year 5** | **Total** |
| Cost | $122,400 | $28,080 | $28,080 | $28,080 | $28,080 | $234,720 |
| Benefits | $22,000 | $52,000 | $61,600 | $70,800 | $81,000 | $287,400 |
| Cashflow | -$100,400 | $23,920 | $33,520 | $42,720 | $52,920 | $52,680 |
| Cumulative | -$100,400 | -$76,480 | -$42,960 | -$240 | $52,680 |  |
| Discounted | 12% | 12% | 12% | 12% | 12% |  |
| Discounted Amount | -$100,280 | $23,863 | $33,400 | $42,516 | $52,604 | **$52,102** |
| Cumulative (Discounted) | -$100,280 | -$76,417 | -$43,017 | -$502 | $52,102 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  | Payback Period | | NPV |
|  |  |  |  |  |  |  |

Net Present Value = **$ 52,102**

**Payback period:** A common way that companies think about projects is when the project will break-even – i.e. start to generate positive return.

The pay back is year – **5 year**

**Return of Investment:** ROI tries to directly measure the amount of return on a particular investment, relative to the investment’s cost.

ROI = Estimated net benefits / Estimated Cost of solution

= (287,400-234720)

= **1.22%**

**Internal Return Rate (IRR):** The Internal Rate of Return (IRR) is the discount rate that makes the NPV of a project zero.

|  |  |  |  |
| --- | --- | --- | --- |
| **Options:** | | | |
| # of Periods | | 5 | |
| **Adjust Cash Flow Below As Needed** | | | |
|  |  |  |  |
| **Year** | **Cash Flow** |  |  |
| 0 |  |  |  |
| 1 | (-$100,400) |  |  |
| 2 | $23,920 |  |  |
| 3 | $33,520 |  |  |
| 4 | $42,720 |  |  |
| 5 | $52,920 |  |  |
|  |  |  |  |
| IRR | 16.75% |  |  |

**Multiple Object Analysis**

**Steps to Follow:**

1)Assigning the priorities according to assign criteria

2)Changing priorities into number

3)Assigning weights with respect to criteria

4)Assigning value 100 as the base and priority number in descending order with the priority list.

5)Assigning value 10 as the base and priority number in ascending order with the priority list

6)Calculate average weights

7)Multiply the weights to the number assigned in step 2.

1. Assigning the priorities according to assign criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get Running** |
| Goodwill | High | Moderate | Medium | Older | 6 months |
| Public relations | High | Easy | High | Younger | 4 months |
| Customer Satisfaction | Low | Easy | Low | Younger | 2 months |
| Innovation | High | Difficult | Medium | Older | 1 month |
| Employee Productivity Rate | Low | Easy | Medium | Younger | 1 month |

1. Changing priorities into number

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Non-Financial Variables** | **Brand** | **Staffing** | **Food Traffic** | **Demographic** | **Get running** |
| Goodwill | 0.9 | 0.5 | 0.7 | 0.5 | 0.2 |
| Public relations | 1 | 0.6 | 0.9 | 0.9 | 0.5 |
| Customer Satisfaction | 0.1 | 0.3 | 0.4 | 0.7 | 0.7 |
| Innovation | 1 | 0.2 | 0.8 | 0.3 | 0.9 |
| Employee Productivity Rate | 0.2 | 0.5 | 0.3 | 0.4 | 0.3 |

1. Assigning weights with respect to criteria

|  |  |  |
| --- | --- | --- |
| **Assigning Weights** |  |  |
| Criteria | Worst | Best |
| Brand | Low | High |
| Staffing | Difficult | Easy |
| Food Traffic | Low | High |
| Demographic | Older | Younger |
| Get running | 6 months | 1 month |

1. Assigning value 100 as the base and priority number in descending order with the priority list.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Food Traffic | Low | High | 100 |
| Demographic | Difficult | Easy | 80 |
| Staffing | Low | High | 60 |
| Brand | Older | Younger | 40 |
| Get running | 6 months | 1 month | 20 |
| **Total** |  |  | **300** |

Once assigned numbers in descending order and in accordance to priority , add all the number and write the total.

1. Assigning value 10 as the base and priority number in ascending order with the priority list

Once assigned numbers in ascending order in accordance to priority , add all the numbers and write the total.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Worst** | **Best** | **Assigned Values** |
| Get running | Low | High | 15 |
| Brand | Difficult | Easy | 35 |
| Staffing | Low | High | 57 |
| Demographic | Older | Younger | 78 |
| Food Traffic | 6 months | 1 month | 90 |
| **Total** |  |  | **275** |

1. Calculate Average of weights

So, the calculation of high level is taking the assigned value /Total weight of high level.(e.g. 100/300 = 0.33) and similarly for low level assigned value /Total weight of low level(e.g. 15/275 =0.05). All the values are calculated as the above calculation.

After getting values we made the average of both the weights.

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **High- level** | **Low-level** | **Avg** |
| Food Traffic | 0.33 | 0.05 | 0.19 |
| Demographic | 0.27 | 0.13 | 0.20 |
| Staffing | 0.20 | 0.21 | 0.20 |
| Brand | 0.13 | 0.28 | 0.21 |
| Get running | 0.07 | 0.33 | 0.20 |

1. Multiply the weights to the number assigned and add all the total.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Criteria** | **Avg weight** | **Goodwill** | **Public relations** | **Customer Satisfaction** | **Innovation** | **Employee Productivity Rate** |
| Food Traffic | 0.19 | 0.23 | 0.17 | 0.08 | 0.16 | 0.06 |
| Demographic | 0.20 | 0.10 | 0.18 | 0.14 | 0.06 | 0.08 |
| Staffing | 0.20 | 0.10 | 0.12 | 0.06 | 0.04 | 0.10 |
| Brand | 0.21 | 0.19 | 0.21 | 0.02 | 0.21 | 0.04 |
| Get running | 0.20 | 0.04 | 0.02 | 0.14 | 0.18 | 0.06 |
| Total | 1.00 | 0.66 | **0.70** | 0.44 | 0.64 | 0.34 |

According to calculated scenario the Public relation has the highest number with the comparison to 1 (i.e. the total of the weights). So, from this, **Public Relation** is the non-financial variable we are focused on and than, Goodwill and Innovation.