Powerup

**Sample Only**

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Reference Guide

REV003

1. How the Calculation Works

**Parameter Input Worksheet**

-Input the year in cell E11 and the month number in cell E9 for the actual period. This will calculate the month and year stream for actual and forecast month and year stream. First 12 months will be analyzed for actual activity and then the second set of 12 months will show activity for forecasted month. Powerup has designed a model that investigates monthly revenue produced, which is generated from our net income. First we have created an array of 1 to 12 to represents 12 months and its corresponding month name. Then the actual month stream uses the range “Startmonth” and “currentyear” to start populating the stream. The formula then adds a month to the prior month if prior month is not equal to 12. If it is 12 then it resets it to 1 and then the formula will calculate each month. We use the same methodology for year, by using the current year unless the prior month is 12. If the prior month is 12 then it adds 1 to current year. Regardless of the start month, we will always be working with current year plus 1. Month name uses the month number and pulls in the corresponding month name from the array described above.

Month: =IF(Startmonth=12,1,(Startmonth)+1)

Month Name: =INDEX(MonthName,0,H15)

Year: =IF(G15=12,(CurrentYear+1),G17)

-Input the revenue rate per contract in E15. We computed energy savings in terms of dollars by computing the rate for each state. As of now, we are concentrating on Northeast states. Per our contract with National Grid, revenue can be calculated as 30% of the total energy saved in dollars.

-Input the labor increment in cell E17. We are using last month’s data from the net income analysis sheet to determine labor spent and we are using a 5% increase for future employee raises.

-Input the inflation rate in cell E19. We are including an inflation factor of 2.5% to compute additional overhead expenses.

-Input the number of ads in each category for month in the ads stream (E27: P35). The number of ads fluctuates through out the year based on the marketing strategy.

-Input the cost per add in the cost range (E39: E47). The calculation of the projected marketing cost is computed in the prior worksheet, Mkt Cost Worksheet, from the Parameters Input Worksheet. Essentially, the model takes into consideration the total expected marketing expenditure, and then subsequently uses the tier to define the accurate revenue increment. Blaine Consulting Groups has helped us create a five tier grid where we can compute anticipated revenue with increased marketing dollars. Higher marketing expenditure correlates to a higher tier of revenue increment. In essence, we are receiving more revenue for increased member's enrollment. The projected revenue increment can be found in "Revenue Rate Forecast" (E55)

**Electricity Input Worksheet**

The logical function "If" is used for the analysis that considers the energy savings per consumer per month for each energy rates independently. The monthly energy savings is multiplied by the energy rates for each year per region. Based on these values, the model automatically generates energy savings per consumer in each region. The formula used:

=IF(cyear=year1,(rate01\*Energykwh)(rate02\*Energykwh). The Energy Rate 1 (D36: D44) and Energy Rate 2 (E36: E44) cost of o KWH consumed in the current year for each consumer comes from the “Electricity Input Worksheet.”

**Revenue Analysis Worksheet**

The data stream is calculated using array multiplication. The revenue analysis worksheet is a series of simple arithmetic operations used to calculate the output stream. It is a straightforward calculation that is obtained by multiplying revenue rate per contract (E15) from the input data worksheet by the energy saved in dollars per consumer per month which comes from “Energy per month”(D56:064) from the electricity input sheet. This data stream shows revenue by region per month for the current year. Revenue is reported in the period in which it is produced.

**Labor Input Worksheet**

This data stream is calculated by using array multiplication. The current labor is found by multiplying the labor rate (D8:D22), array “LaborRate” by the labor count array (D27:O41) which is then divided by 12. The total labor rate does not change, unless a raise was given or a new hire added. The last row represents the sum of number of employees per position for each month =SUM(D48:D63). This computes the ideal amount that needs to be expensed assuming that they are performing at 100% productivity. Formula: =(LaborRate\*LaborCount)/12

**Mkt Cost Worksheet**

The Mkt cost worksheet is very important to this model. It has two components, actual and projected marketing cost. The actual, top section (D11:O19), marketing cost is being extracted from out Oracle system. This data will be evaluated in the net income analysis tab so show actual progress of the company. Currently, we have contracts with TV, radio, newspaper, MBTA and online channels and now we have decided to separate traditional marketing from future marketing channels. We also weren’t focusing on marketing as much since we are still in the process of initial setup of the firm. Now we have great ideas about our marketing scheme which is being translated in to the bottom section of the mkt cost worksheet. The bottom section, D34:O42, uses the array multiplication to calculate the project marketing cost. It uses array “Ads” for number of ads per month schedule (E27:P35) and “Cost” from cost per ad schedule (E39:E47) from the ParametersInput worksheet to calculate the expected cost. Formula: =Ads\*Cost

**Other Expense Input Worksheet**

Input the expense data in the "Other Exp" stream (D10:016)

**Expense Analysis Worksheet**

This worksheet will delineate all of the current expenses. The "CurrentExp" array (D11:19) shows the total expenses the company has for every individual month for the current period. For the most part our expenses are stable as we have annual agreements on insurance and rental. We use straight line depreciation. The majority of our fixed assets have been purchased within the last few months and our variable expenses such as postage and insurance are minimal.

**Forecast Worksheet**

Projected Revenue (D12:O12) is computed using the Forecast Revenue (O12) from the Net Income Analysis Worksheet and the Revenue Rate Increment (E57) from the parameter Input sheet. Projected Expenses are not considered "outputs" because these calculations are not necessary to demonstrate results of the compilation of worksheet calculations.

Projected Labor Stream (D15: O15) is computed using the "Labor Forecast" (O15) from Net Income Analysis and labor increment rate" (E17) from the Parameters Input Worksheet. For the purpose of making the model more sophisticated, we now have the option to add or remove staff by using the staffing grid. Anticipated Marketing Cost Stream (D16: O16) is computed using the Total Mkt Forecast Cost (D44:O44) from the Mkt Cost Worksheet. Finally, projected Other Expenses stream (D17:O23) are calculated using the "Expense Forecast" (O17:O23) from the Net Income Analysis and "Inflation Rate" from the Parameters Input worksheet. The model calculates the forecast for the subsequent 12 months in terms of net income.

The worksheets are named with the word “input” if data entry is required. Similarly, if no data entry is required, the names of the worksheets are followed by the word “analysis”. Within the input worksheets, the cells that required data are colored in yellow to guide the user throughout the input process. Intermediate calculations that appear in the analysis worksheet and some input worksheets are highlighted in green. Finally outputs streams are highlighted in purple in the Forecast tab.

1. How to locate inputs, outputs and intermediate results

Input parameters are located in the following worksheets:

**Parameters Input Worksheet:**

Start Month (E9): number of month, 1 for January

Current Year (E11): current year (year)

Revenue Rate (E15): percentage of the total household energy savings that the company receives as revenue (%)

Labor Increment (E17): annual salary indexation (%)

Inflation (E19): annual inflation rate (%)

Cost (E39:E47): Cost of one unit of add for a particular marketing category ($)

**Labor Input Worksheet:**

Labor Rate (D8:D22): annual salary for a particular position in current year ($)

**Electricity Input Worksheet:**

Energy Rate 1 (D36:D44): cost of one KWh consumed in current year for each consumer ($)

Energy Rate 2 (E36:E44): cost of one KWh consumed next year for each consumer ($)

Input streams are located in the following worksheets:

**Parameters Worksheet:**

Ads (E27:P35): Number of ads per month for a particular marketing category. Each marketing category is a input stream so there are total of 9 input streams in this array

**Labor Input Worksheet:**

Labor Count (D27:O41): number of employees per position per month in current year. Each employee is a stream so there are 15 streams in this array.

**Other Expense Input:**

Other Exp (D10:O16): other expenses per month in current year (depreciation, insurance, IT, Office , Postage, Rent and Utilities, Travel) ($). Each expense is a stream so there are 7 streams in this array.

**Electricity Input Worksheet:**

Energy Kwh(D10:O18): energy saved per consumer per month (KWh). Each consumer is a stream so there are 9 streams in this array

Outputs are located in the following worksheets:

The model shows 2 streams of outputs: forecast revenue and forecast net income. We are presenting them together so the user can have a better sense of how revenues and expenses interact throughout the year to achieve the target net income of $1,000,000.

**Forecast Worksheet:**

Forecast Revenue (D12:O12): projected revenue for the next 12 months ($)

Forecast Net Income (D26:O26): projected net income for the next 12 months ($)

Intermediate Calculations are located in the following worksheets:

**Electricity Input Worksheet:**

Energy per month (D56:O64): calculates energy savings per month per consumer

**Revenue Analysis Worksheet**

Revenue Analysis (D12:O20): calculates the revenue per month per consumer

**Labor Input Worksheet:**

Current Labor (D48:O62): calculates current labor cost per month per employee

**Marketing Cost Worksheet:**

Mktg Cost Forecast (D34:O42): calculates the projected marketing cost per month per marketing category

**Expense Analysis Worksheet:**

Current Expense (D11:O19): calculates current expenses per month

**Net Income Analysis Worksheet:**

The worksheet demonstrates 3 unique calculations. First, it shows current revenues from "Rev Total" stream (D28: O28) from the Revenue Analysis Worksheet. The first output stream takes the total cost stream which is generated from our marketing costs, labor and other overhead expenses. Second, it demonstrated current expenses, using the "current expense" stream (D11:019) from Expenses Analysis Worksheet. Expenses are categorized as payroll, marketing, depreciation, insurance, etc. Finally, the model computes the current net income of the company which is shown in the "current net income stream (D25:025). The model concurrently adds the total revenue and cost for the 12 forecasted months and predicts the net income. This worksheet is critical to the model because in order to compute the future net income, the model will use 3 values from the previous month of the calculation to adequately predict the forecast: Revenue Forecast (O12), Labor Forecast (O15) and Expense Forecast (O17:O23

Total Revenue Analysis: shows current revenues

Total Expense Analysis shows current expenses

Current Net Income (D25:O25): calculates current net income

**Parameters Worksheet:**

Tier (I51:I55): calculates the appropriate tier of the total projected marketing expenditure

Revenue Rate Forecast (E57): calculates the appropriate expected revenue rate for the projected period

Tier Number (G57): indicates the tier number of the projected marketing expense

**Forecast Worksheet:**

Projected Expenses (D15:O23): calculates projected expenses

1. Guide to visual cues and naming conventions

While the Powerup model appears to be relatively straightforward, there are many subtleties involved in the kind of detailed analysis to analyze monthly revenue generated based on total energy savings. The model is user friendly, which is achieved by using the most concise parameters, data streams, named ranges and worksheets. The ten-worksheet names were used, in order,” ParametersInput”, “NetIncome Analysis”, “Expense Analysis”, “OtherExpInput”, “MktCost”, “LaborInput”, “RevenueAnalysis” and “Electricity Input.” Worksheets that are named "input" are the only ones where the user enters data. If data entry is not necessary, the worksheet is titled "analysis.” The entire workbook is color coded.

Yellow cells: references to input values that require data. It can be either a parameter input or stream input. Essentially these are cells that can “accept data”.

Green cells: references to intermediate calculations. The user should not modify these cells.

Purple cells: These are new calculations that give the results of the compilation of worksheet calculations. All values from the output worksheet are computed from the input and analysis worksheets.  The user should not modify these cells.

Gray cells: The background of every worksheet to enable the calculated results, which are highlighted in white to stand out more.

White cells: The white cells indicate that the user should not modify these cells. They are necessary for the construction of the model but no data needs to be modified.

Some of these names are longer to fully delineate the information. Abbreviations are used as frequently as possible, but not at the expense of losing information or clarity. All the parameters are defined in the "ParametersInput" sheet. Any parameter can be altered individually because there are no formulas attached to the cells. With the exception of “sum” functions, every excel functions utilizes named values. This method makes it possible

for the user to understand where the information comes from. It is also the best technique used for referencing data. If a user is using data that is located on a different worksheet, a link is created back to the worksheet where the original data is stored so the user can see

the data from the original worksheet without needing to search between worksheets. All names in the Powerup model are global names. The naming strategy utilizes the ripple principle , which means that when data is changed in the model, the change is rippled through the model.

Names of ranges and parameters follow the next convention:

Fcst=Forecast

Rev=Revenue

Inc=Increment

Exp=Expense

Val=Value

Mkt=Marketing

Inf=Inflation

Per=Periods

Proj=Projected

In addition to the naming strategy, all the information is guarded from user erroneously changing data or labels at various points in the workbook. This is accomplished by the use of array formulas. While it is possible for a user to erase entire arrays in order to delete information, an accidental “delete” will not automatically erase any pertinent information. It is important to note while the model does an excellent job at protecting data from being erased from user misuse, sometimes working with the model can be tedious. For example, if you want to slightly change a worksheet, you will have to erase the whole array formula of any of the named ranges you want to change. Arrays are also used to minimize the amount of calculations the user must input into the spreadsheet. A basic array formula for a data stream is capable of performing many calculations at the same time that it would take to perform just a single calculation. Finally, the model does a good job about providing concise information. The model contains no macros or nonstandard functions.

1. How to make changes

This model is very thorough with a strong framework that was implemented to make easy for future use. There are a number of ways to extend this model, which include adding inputs (streams or parameters) and altering the way calculations are performed. Adding input streams and parameters is relatively straight forward. As far as extending the model in the future, the model could be changed significantly by scoring each media outlet a single, overall priority score that reflects how valuable the media outlet is. Each media outlet will be assigned a single, overall priority score that reflects the consideration of all review criteria. The scoring system will utilize a 9-point rating scale (1 = exceptional; 9 = poor). This would create a more efficient model by removing or decreasing the media outlets that have less impact on the overall revenue structure. However, this would mean turning away media outlets and add the additional wrinkle of potential bad relationships. It would be extremely interesting to add this feature but is beyond the demands of the current task.

The model could be extended through the addition of different cities/towns in each state. For the addition of towns, new worksheets would simply be created to accommodate the new locations. Each new worksheet should follow the same format as the existing Electricity input worksheet. After the new worksheets are added, the input sheets will be used to modify to include the new rates of each town.