Project Name: SimulPro

**Sample Only**

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Document Title: User Guide

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SimulPro Team:

**1. Location and meaning of all input parameters and input streams**

All the input streams and parameters are located on the worksheet named Inputs. The worksheet has the following Input Streams:

*Product Costs.* The stream of prices, which the Store pays to the Supplier for the product each month. As the model is intended to be used for seasonal goods, the product costs are not the same during the year. However, the user can use any prices, even the same ones during the year. All values are greater than zero. The Product Costs stream is used to calculate models’ prices and Costs of Goods Sold.

*Model’s Prices.* Two streams of prices the Store asks for the popular and unpopular models. They are represented in percentage of the Product Costs. For example, if the cost of the model was $100 and in the first month the Store asks for it $200, then the price in this stream will be represented as 200%. The Store asks the highest percent for the newest model, then as model becomes older, the price becomes lower and lower each month till it reaches zero. In the first month, while the Store management doesn’t know yet if the model is popular or unpopular, it asks the same price for any model. However, after the first month of selling it’s possible to classify the model by popularity and choose an appropriate pricing scheme. So, the Model’s Prices streams represent the pricing policy of the user’s store. The user can create any pricing scheme he or she wishes. All values are greater than or equal to zero. The Model’s Prices stream used to calculate the Revenue.

*Demand Analysis.*  These two streams show the fall of the demand on popular and unpopular models as the models become older. The older the model, the smaller the demand on it, and eventually it reaches zero. Obviously the unpopular models have lower demand starting from the first month, they probably also experience more rapid decrease in the demand in following months than popular models. These streams should be created by a sales management team according to historical data. The demand values are expressed in the percentages of the Highest Demand (see below) and cannot be greater than 100%. All values are greater than or equal to zero. The Demand Analysis stream is used in the model to calculate the size of monthly demand for each type of the model.

*Random Number Stream.*  This is the technical stream used in calculations. It is a stream of random numbers between zero and one. It can be changed or left as it is during creation of a new scenario. If a new scenario is supposed to be used by itself, then a new stream should be generated, if, on the other hand, 2 scenarios are intended to be compared with each other, then the same stream of random numbers should be used. The Random Number Stream is used to assign popularity for the models. For more details about purposes of this stream and how it can be changed see the Reference Guide.

The Inputs worksheet also has the following Input Parameters:

*Order Sizes.*  The model assumes that the Supplier offers three possible order sizes. Once chosen the same number of items will be ordered during the entire year. The model can be changed to accommodate fewer or more than 3 order sizes. See the Reference Guide for the details. The Order Sizes are used to calculate the Inventory levels and Holding expenses.

*Highest Demand.* The highest demand possible, the values is estimated using historical data. Supposedly it is limited by the size of the store. The Highest Demand is used to calculate monthly demand values.

*Holding Cost.* The cost to hold one unit of product for one month. The model assumes that even if a unit was sold at some point during the month the holding expense for this unit is as if for the entire month. The Holding Cost value is used to calculate monthly holding expenses.

*Probability that Model is Popular.* This probability is estimated according to historical data and the Supplier evaluation. The probability is always a fraction of 1. The Probability that Model is Popular value is used with the Random Numbers Stream to assign popularity to the models of the product.

**2. Location and meaning of all outputs**

All the outputs are located on the worksheet named Outputs.

The Outputs worksheet shows a table with all three possible order sizes and the corresponding performance values. First, there is a table of corresponding profits month by month. Then, there is a table of Annual values: Annual Profit, Annual Holding Costs, Annual COGS (Costs of Goods Sold), Total Costs (which is the sum of the previous two), and Annual Revenue. All these values allow to compare the consequences of choosing different order sizes. The Expected Average Monthly Demand is also given on this worksheet. This value may be interesting by itself and while comparing different scenarios.

The most important information on the Output sheet is the Annual Profit. The cells are colored according to the values, the lowest profit is red, the medium is yellow and the highest is green (see below). The Store, as any business, seeks to maximize its profit, thus the management should choose the order size which gives the best Annual Profit. The column chart visualizes the same information - the comparison of the Annual Profits given the different order sizes.

**3. Guide to visual cues and naming conventions**

The model has the following visual cues:

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| Input Streams (can be changed by user) |
| **Input Parameters (can be changed by user)** |
| Inputs Worksheet References |
| **Intermediate Results given later in Outputs** |
| Names Definitions (given only for reference) |
| Smallest Annual Profit |
| Medium Annual Profit |
| Highest Annual Profit |

The only naming convention used was to use a substantive word at the beginning of the name and all the descriptions after that. For instance, OrderSize, OrderSmall, OrderMedium and so on. It allows more effective search of names. All the names relating to orders will be close to each other. If names like SizeofOrder, MediumOrder and so on were used, they would be harder to find.

**4. Step-by-step use of the model**

To create a new scenario, first create a copy of existing workbook and rename it using a new scenario name or number. Open the new scenario. Everything that the user may change is located in the Inputs worksheet. Change any input stream and/or parameters you wish according to their description (see the “Location and meaning of all input parameters and input streams” section above). Press F9 to recalculate the model. Go to the Outputs worksheet. The results necessary for decision making will be represented there.